ernst schering foundation

Highlighting Excellence

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Monika Lessl and Ilona Muráti-Laebe

Highlighting Excellence

Our society is more than the sum of its members. Exceptionally bright people can and should make a special contribution. For that reason, the Focus section of our Annual Review 2005 is devoted to our young award recipients whose excellent work has impressed and inspired us.

To contribute to the progress of society – this goal is best served by making visible role models and by inspiring others. Therefore, we want to contribute to letting the public participate in outstanding accomplishments of the past and the present.

Opening up new paths in art and science to point the way to the future – this is another main focus of our work. Truly new things frequently develop at the intersection of traditional disciplines. We therefore have initiated and supported projects and programs to provide artists and scientists from different disciplines and ways of thinking with the opportunity to enter into a mutual dialogue. Our goal is to create think tanks for new ideas.

"One has to do new things in order to see new things."
(Georg Christoph Lichtenberg)

We hope that you will be inspired by our projects and initiatives!

Monika Lessl

Ilona Muráti-Laebe

Highlighting Excellence

Cornelia Renz, Ernst Schering Foundation Art Award

Peter Rehling, Young Investigator Award

Nils Krone & Ute Wellmann, Prizes for Young Scientists

Focus on Bright People – Young Award Recipients of the Ernst Schering Foundation

With its awards and prizes for young artists and scientists, the Ernst Schering Foundation aims to identify and honor outstanding young talents in these fields. The awards are intended as an incentive to further exceptional achievements and aim to open up new opportunities. Therefore, this year's Focus section is devoted to the young award recipients and their work.

Ernst Schering Foundation Art Award for Cornelia Renz

Cosmos of Isolation

In March 2005, the Ernst Schering Foundation Art Award, which is accompanied by a prize of 10,000 Euro, was awarded for the first time. It is given to exceptionally talented young artists whose work is of high quality showing an original artistic position and the potential for further development. The theme of the first award competition was: How does the information society change people and their lives? The award was bestowed on Cornelia Renz. In her pictures, the master-class student of Leipzig professor Sighard Gille creates a world of isolation and self-alienation.

Contradictions, ambiguities, irritations – in Cornelia Renz's work, nothing is what it seems. Sentimental things are next to alarming things, naivety shares space with callousness. Little girls express innocence and shame – even though they are dressed in a highly provocative way. The picture "Eve's Garage" shows two young, tool-wielding women watching a car accident – as unmoved and idle bystanders. In "Puppy," a girl is connected to a young dog by a bleeding umbilical cord. In the background, there is a cheerful, colorful poster of the "Hello Kitty" brand.

Cornelia Renz


Exhibition opening at the Berlinische Galerie

Cornelia Renz, *Puppy,* 2004
Pigment marker on acrylic glass and Kömatex, 106 x 86 cm

These discrepancies remain unsolved and force questions on the viewer – questions that s/he needs to live with, without receiving any answers. Cornelia Renz skillfully pulls the rug out from under those who approach her art. The viewer becomes as insecure and disoriented as the people populating her pictures.

Renz creates a cosmos of isolation and self-alienation, where fake poses, an ostentatiously paraded sexuality, masquerade and outfit are the defining elements. For the jury of the Ernst Schering Foundation Art Award, she thus responds to a specific contemporary feeling at a time when opportunities for emancipation are scarce and our lives rest on fragile foundations.

The jury – consisting of Professor Horst Bredekamp (Humboldt University Berlin), Dr. Ursula Prinz (Berlinische Galerie), and Professor Armin Zweite (Kunstsammlung Nordrhein-Westfalen) – was above all impressed by the intense and uncompromising nature of this pictorial world: "By telling stories of action and communication, of


Cornelia Renz, *Eve's Garage,* 2004
Pigment marker on acrylic glass and Kömatex, 190 x 300 cm

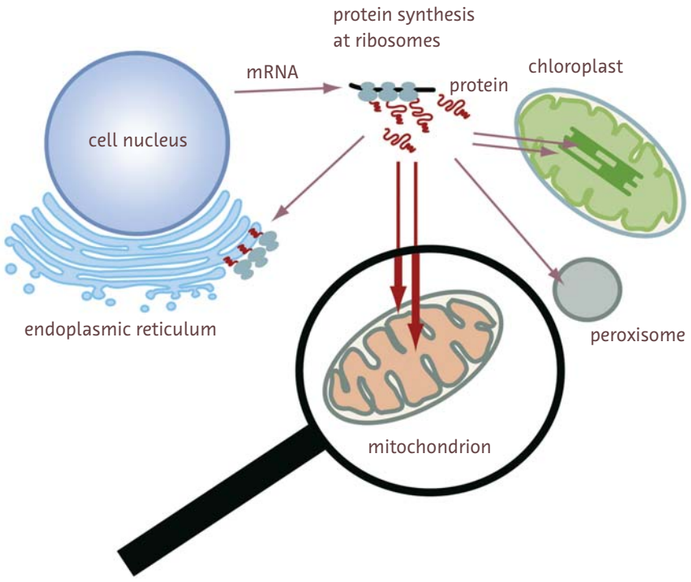
aggression up to the point of violence and cruelty, Cornelia Renz confronts the viewer with issues that are repressed and neutralized to the same degree that they are over-represented in the media." The public was able to judge the validity of this statement in the spring of 2005. After the festive award ceremony on March 11, the pictures by Cornelia Renz and the other nominees – Thomas Dillmann, Justine Otto, Markus Willeke and Jongsuk Yoon – were on display at the Berlinische Galerie through May 22, attracting a large audience.

This was a confirmation for the Ernst Schering Foundation, whose new, biennial award pursues a clear objective: to promote young talented artists, because excellent work needs continual nurturing to grow again. It is the Foundation's conviction that awards and prizes, in honoring and making visible great achievements, are particularly inspiring and stimulating. They also show others that it is worth pursuing one's talents.

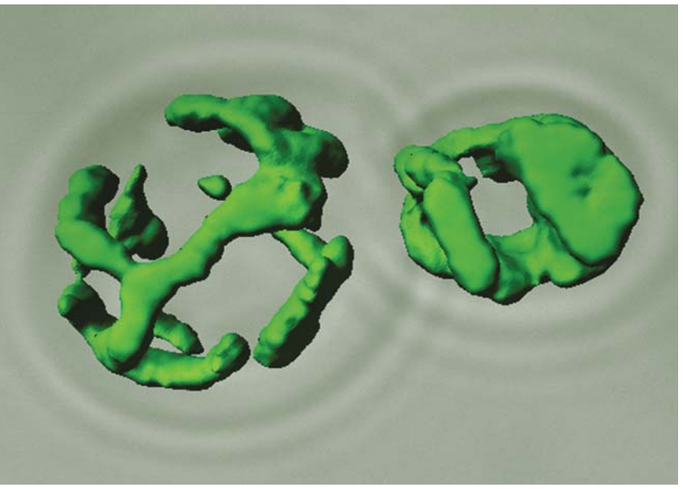
CORNELIA RENZ, born in 1966, studied at the Leipzig Academy of Visual Arts (HGB) from 1993 until 1998, where she received her diploma and was a master-class student of Sighard Gille's.

SELECTED STIPENDS & AWARDS
1999 — Stipend of the Free State of Saxony
2001 — Marion Ermer Prize

SELECTED EXHIBITIONS
2004 — Bambi and Comrads, Zeche Zollverein, Essen
2005 — Lindbergh's Dream, Backfabrik Berlin (with Marcel Bühler)
2005 — Cornelia Renz, Galerie Goff + Rosenthal, New York



Proteins (red) are produced on the ribosomes and directed to their destination, e.g. the mitochondrion, via signal sequences.



Projection of yeast mitochondria, marked with a fluorescent dye

MITOCHONDRIA play a central role in the energy metabolism. For that reason, they are also referred to as the power plants of the cell. 1,000 to 1,500 different proteins are active in the mitochondria. But only a few of those are produced directly on site. All others need to be transported there. Those proteins contain special signals in their amino acid sequence. A protein complex in the outer membrane (TOM complex) and two protein complexes in the inner membrane of the mitochondria (TIM complex) recognize these signals and mediate the protein transport to the mitochondria.

Peter Rehling is interested in the molecular mechanisms that underlie the protein transport via the inner membrane of the mitochondria. He has already succeeded in isolating the TIM complexes and in identifying numerous, previously unknown proteins. Thus important insights could be gained into the transport processes. Rehling was able to show that a contact happened between the transport machinery in the outer (TOM) and inner (TIM) membranes during the protein transport to the matrix of the mitochondria. He discovered that the TIM complexes adapted to the needs of the transported protein. How does this work? This is the question he and his team will try to answer next.

Peter Rehling

Young Investigator Award for Peter Rehling

"Wonder Is the Beginning of All Science"

In September 2005, the German Society for Biochemistry and Molecular Biology and the Ernst Schering Foundation for the first time conferred the Young Investigator Award, which is accompanied by a prize of 10,000 Euro.
The award was given to Peter Rehling of the University of Freiburg. He is interested in the question of how proteins are transported to their intracellular destination.

Mr. Rehling, what does the Young Investigator Award mean to you?
It is a very important honor. It documents the originality of my research – and the fact that my team and I successfully work on a central topic of biomedical research.

Where do you see the biggest challenges for young scientists in Europe?
I believe that international collaborations – and support structures – are becoming more and more important. In order to experimentally approach current questions of biochemistry and cell biology, we have to learn to use new techniques and to cooperate with specialists in other fields.

What is your advice to scientists who are still in the early stages of their career?
When moving from a postdoc position to becoming the head of your own working group, you need to have a lot of organizational skills. For the most part, our training does not prepare us for that. Young scientists should think carefully early on about whether they are ready to take this step and adequately prepare for it.
In addition, you need to plan well on what to focus in your research. When organizing an initially small research group, your success depends on the choice of a topic that can compete with more established groups.

Which quotation would you use to describe yourself and your work?
"Science becomes interesting just where it stops." This is a sentence from Justus Freiherr von Liebig. Another one is from Aristotle: "The beginning of all science is the wonder about things being the way they are."

PETER REHLING, born in 1966, studied biology and chemistry at the Ruhr University of Bochum. Both his dissertation (1996) and his habilitation (2003) dealt with the protein transport in yeast cells. From 2000 to 2004, he was head of a junior research group at the Institute for Biochemistry and Molecular Biology at the University of Freiburg, where he has taught since 2004.

The Schering Prize is endowed with 5,000 Euro and awarded annually by the Society of Friends of the Technical University Berlin.

Marianne Engeser
Prize Recipient 2005

The Avrion Mitchison Prize is endowed with 2,500 Euro and awarded annually by the German Rheumatism Research Center.

Ute Wellmann
Prize Recipient 2005

The Schoeller-Junkmann Prize is endowed with 10,000 Euro and awarded annually by the German Society of Endocrinology.

Marcus Quinkler

Nils Krone

Felix G. Riepe

The Schoeller-Junkmann Prize 2005 was split between Marcus Quinkler, Nils Krone and Felix G. Riepe.

Prizes for Young Scientists

Highlighting Excellence in Science

Schering Prize

Marianne Engeser

Catalysts play an important role in the chemical industry. Their precise functioning, however, is frequently unknown. Marianne Engeser has examined the workings of vanadium oxide catalysts.

Catalysts save energy. With them, chemical conversions can be performed at low temperatures and more quickly. Besides, some reactions are only possible because of the presence of a catalyst. Yet their mechanisms are frequently unknown. A better understanding would help to develop better catalysts. This is also true for the conversion of butane to maleic acid anhydride – an important intermediate product for the production of polyesters that are used to make synthetics. Vanadium pyrophosphate is an established catalyst, but given a 60 percent yield, its economic efficiency is not ideal.

Marianne Engeser has already been able to find out a few things about the mechanisms of vanadium pyrophosphate. She has examined how simple gaseous vanadium oxygen compounds interact with butane. Her first results: VO+ is especially suited for removing hydrogen from butane. However, in order to bind oxygen to the molecule, VO2+ is needed.

In the meantime, she has progressed to experiments with larger VxOy compounds. Step by step, she seeks to uncover the complex processes on the surface of the vanadium pyrophosphate in order to ultimately create a more effective catalyst. This could increase the efficiency of the production of maleic acid anhydride.

Avrion Mitchison Prize

Ute Wellmann

Systemic lupus erythematosus (SLE) is an autoimmune disease which can affect many organs. Ute Wellmann has investigated how this happens.

The body's immune system is an important weapon in the fight against external attacks. This includes the production of antibodies which neutralize foreign proteins. Occasionally, however, antibodies are produced that attack endogenous targets (autoantibodies).

This is also the case with systemic lupus erythematosus – a relatively unknown disease, which, however, affects one in every 2,000 people. The patients suffer from skin rashes and kidney infections. These are caused, among other things, by deposits of immune complexes (from antibodies and their target proteins).

Until now it was known that, for most patients, autoantibodies that bind to DNA played a major role. Ute Wellmann and her team showed that these antibodies were produced by cells that may develop because of mutations during the normal immune response. A healthy organism will destroy such cells, but with lupus patients, this mechanism does not work. Moreover, the phagocytosis – the process by which the organism disposes of dying cells – is impaired. As a consequence, DNA from dying cells can combine with antibodies to form the fatal immune complexes. "Next, we want to examine whether the impaired phagocytosis already plays a role during the development of these antibodies," says Wellmann. The findings could provide new approaches to treating the disease.

Schoeller-Junkmann Prize

Marcus Quinkler

In puberty, the blood pressure in the arteries of boys suddenly increases – and remains high for life. This is one of the reasons why men run a higher risk of developing hypertension and of dying of a stroke or a heart attack than women. Internist Marcus Quinkler from the Charité in Berlin uncovered the process behind this phenomenon.

Quinkler early on guessed that the kidneys play a role in male hypertension. They are, after all, of major importance for the regulation of the blood pressure. The renal tubules process the urine – with the aid of pumps in the cell walls. Those pumps transport sodium from the urine back to the blood. However, they not only extract salt, but also water from the urine. This increases the amount of blood – and the blood pressure rises.

Together with colleagues from the University of Birmingham, Marcus Quinkler discovered how the male sex hormone testosterone influences this process. He found out that it was capable of docking to the cells of the renal tubules and thus triggered the creation of further sodium pumps. The result: More sodium is being transported through the cells – and directly returned to the blood in the kidney.

Quinkler moreover identified the genes that are activated in the cell nucleus by testosterone and that stimulate the creation of the sodium channels. His experiments might suggest ways to treat high blood pressure in men.

Felix G. Riepe, Nils Krone

The andrenogenital syndrome – a genetic hormone disorder – leads to a masculinization of the female genitalia. Mice, too, can contract this disease. Felix G. Riepe and Nils Krone of the Kiel University Clinic have shown that the same genetic defect is present in humans and mice.

Stress is unavoidable. The body has therefore developed strategies to be able to live with it. Here, the adrenal gland plays an important role. It produces hormones that are indispensable for stress responses and normal blood sugar and blood sodium levels.

Congenital defects in the production of these hormones can be fatal. If such gene defects exist, the organism tries to compensate for the deficits. It makes the adrenal gland step up production. The negative side effect is that this leads to an increased production of male hormones – and to a masculinization of the external genitalia in girls and women.

The gene defect underlying this "andrenogenital syndrome" in humans is known. It is also known that mice, too, contract the disease – with the same distinctive features in the hormone metabolism.

Felix Riepe and Nils Krone were able to show that mice and humans shared a number of structural and point-specific mutations on the same gene – and that the results of mice studies could thus be applied to humans. They have thus laid an important foundation for further research that, in the long run, is intended to lead to better therapies.

Thomas Tuschl, Ernst Schering Prize Recipient

Award Ceremony, Ernst Schering Prize

Stories on Gold

Presenting Role Models to Provide Inspiration

The Ernst Schering Foundation supports people and institutions that have accomplished pioneering work or set standards in science or art. It aims to make visible and help conserve ground-breaking work. The annual Ernst Schering Prize honors outstanding research in the life sciences. In the arts, the Foundation supports projects that offer reinterpretations of major figures and works or that highlight outstanding accomplishments of the past – such as the exhibition “Stories on Gold” in 2005.

Johanna Wanka, Brandenburg's Minister of Science, presents the Ernst Schering Prize 2005 to Thomas Tuschl.

Ernst Schering Prize for Thomas Tuschl

RNA – All Set to Become a Superstar

RNA interference has become the magic word in the functional analysis of genes. One of the pioneers in this field is Thomas Tuschl. For his ground-breaking work, the Ernst Schering Foundation awarded him the Ernst Schering Prize 2005.

Only a few years ago, all attention was focused on DNA – the molecule that carries the genetic information. The RNA, chemically related to DNA, seemed to play supporting roles at best. These included transporting the genetic information about individual proteins to the cell's protein factories, after the gene had been transcribed. This messenger role earned this type of RNA the name of messenger RNA (mRNA).

Today it is known that this very process can be blocked with so-called siRNA molecules (=small interfering RNA). RNA interference describes the process of one RNA intercepting another, namely the messenger RNA, and attaching to it like one half of a Velcro fastener to the other half. The mRNA becomes ineffective, the protein is not produced, and the gene is silenced, so to speak.

This mechanism was discovered in the 1990s – first in plants, then in threadworms. In 2001, the chemist Thomas Tuschl from the Max Planck Institute for Biophysical Chemistry in Göttingen was the first to show that RNA interference also takes place in human cells. From then on, it was possible to silence any gene with the appropriate RNA molecules.

Within a few years' time, RNA interference has become a standard tool in numerous laboratories. Researchers simply silence individual genes if they want to know more about their functions. In addition, they are searching for therapeutic uses of the process. For example, they try to use the mechanism of RNA interference to downregulate genes that are falsely activated and cause diseases.

Tuschl now works at the Rockefeller University in New York City. Currently, his main interest is in so-called micro RNAs (miRNAs). These are RNA fragments that are produced by the cells themselves. Their specific tasks are still under investigation, but one thing is for sure: They, too, can interact with mRNA molecules and thus disrupt protein production. "We now believe that the RNA interference caused by micro RNAs is actually one of the most important mechanisms in gene expression," says Thomas Tuschl.

They may even very well be the main actors when it comes to the question of which part of the approximately 22,000 human genes in a cell is actually transcribed. Their complex interaction might possibly be the reason for the partly big differences between species that are not that different in terms of the number of their genes. Scientists currently know of some 500 different micro RNAs. Another thing is interesting about them. There are first indications that some diseases might be connected to the existence of certain micro RNAs in the sick cells. Tuschl says: "For example, the concentration of individual RNAs is remarkably high in the cells of certain tumors. This might lead to completely new approaches in the fight against cancer."

Much applause for Teresa Zimmermann, Hanns Eisler Academy of Music, Berlin, from the guests of the award ceremony

Award ceremony, Berlin-Brandenburg Academy of Sciences

THOMAS TUSCHL was the first to show, in 2001, that RNA interference also takes place in human cells. Since 2003, the biochemist has been working at the Rockefeller University in New York, where he is head of the RNA Molecular Biology Laboratory. In the meantime, RNA interference is also seen as a promising approach to the treatment of diseases.

Ernst Schering Prize Recipients

1992 — Peter H. Seeburg
Function of GABA Receptors

1993 — Christiane Nüsslein-Volhard
Foundations of Developmental Biology

1994 — Bert Vogelstein
Molecular Biology of Colon Carcinoma

1995 — Yasutomi Nishizuka
Signal Transduction through Protein Kinase C

1996 — Judah Folkman
Role of Angiogenesis in Tumor Biology

1997 — Johann Mulzer
Chemistry of Chirality

1998 — Ilme Schlichting
Development of Kinetic Crystallography

1999 — Michael J. Berridge
Functioning of Calcium Signal Transduction

2000 — Takao Shimizu
Role of Eicosanoides

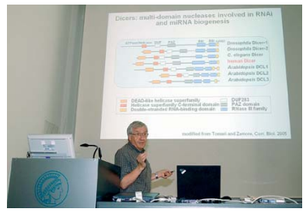
2001 — Kyriacos Costa Nicolaou
Synthesis of Natural Products

2002 — Ian Wilmut
Development of Transgenic Methodologies and the "Nuclear Transfer Protocol"

2003 — Svante Pääbo
Analysis of the Evolution of the Human Genome

2004 — Ronald D. G. McKay
Neuronal Stem Cell Research

The RNAi Symposium with Thomas Tuschl at the Harnack-Haus in Berlin-Dahlem



Symposium on RNA interference

Between Basic Research and First Therapeutic Approaches

More than 250 visitors accepted the invitation of the Ernst Schering Foundation and the German Society for Biochemistry and Molecular Biology to attend the symposium on RNA interference at the Harnack-Haus of the Max Planck Society in September. One of the high-profile speakers at the symposium was Ernst Schering Prize recipient Thomas Tuschl.

Since it is known that RNA interference silences genes, the idea is to use it to treat illnesses. To deactivate erroneously activated genes by intercepting the corresponding messenger RNA. At the symposium, Thomas Meyer of the Max Planck Institute for Infectious Biology addressed the possibility of fighting infectious diseases such as chlamydia infections that play a role in paranasal sinus infections and pneumonia. In these cases, targets of RNA interference could be proteins that compromise the effectiveness of antibiotics or that allow the bacteria to enter the cell.

Infections, but also neurological diseases, metabolic disorders and cancer are the diseases targeted by the company Alnylam. Hans-Peter Vornlocher of Alnylam talked about first successes in treating mice that had been infected with the so-called respiratory syncytial viruses, i.e. viruses that in humans are responsible for the most frequent problematic respiratory infections during the first two years of life. Moreover, Alnylam succeeded in delivering a therapeutic siRNA directly to the liver and intestinal cells to downregulate a key protein for the transport of cholesterol. The aim of this approach is to control blood lipid levels. Before RNA interference therapies can be deployed, however, important issues need to be addressed. For instance, unwanted side effects need to be completely eliminated; these could occur, for example, if one siRNA were able to neutralize different mRNAs.

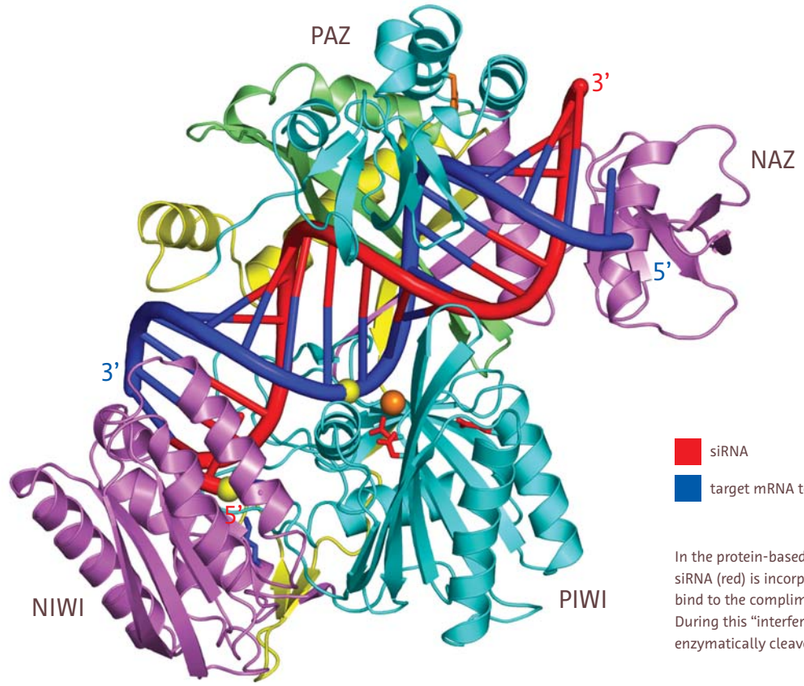
Thomas Tuschl, who was awarded the Ernst Schering Prize only the day before, among other things presented the most recent data on the characterization of the Ago2 protein. This protein plays an important role in the so-called RISC molecule (see illustration) and thus in RNA interference.

Another focus of the symposium was on micro RNAs – endogenous RNAs that can also inhibit the translation of mRNAs into proteins. Victor Ambros from New Hampshire pointed out that approximately 30 percent of known miRNAs were basically the same in all species. For miRNAs goes the same as for proteins: Not every cell produces all miRNAs that are part of the genetic blueprint. Ronald Plasterk from Utrecht used the example of the zebrafish to show tissue-specific miRNA profiles.

Stephen Cohen, who works on RNA interference in drosophila in Heidelberg, showed that approximately 30 percent of drosophila genes were regulated by miRNAs – this affects above all development processes. A single RNA, he said, can influence more than 100 target genes. Which mRNA is regulated by which miRNA, however, is only known in a few cases.

Witold Filipowicz from Basel focused on the still unsolved question of where the miRNA inhibits the production of protein. From his most recent data he deduced that this happened at the beginning. Until now it had also been discussed whether this took place only after the production of the protein.

The high number of younger participants in the symposium demonstrated the appeal of the field for young, emerging researchers. One scientist who has made a major contribution to opening up new application possibilities for RNA research, is Thomas Tuschl. Therefore, Witold Filipowicz expressed his particular gratitude to him during his speech: “Without you, Tom, we would not even be here.”



In the protein-based RISC complex, the siRNA (red) is incorporated such as to bind to the complimentary mRNA (blue). During this “interference,” the mRNA is enzymatically cleaved.

RNA abbreviation for ribonucleic acid. RNA is composed of many repeating nucleotide units. Each nucleotide consists of a sugar molecule, a phosphate molecule and one of the four bases adenine, guanine, cytosine or uracil. The base sequence along a nucleotide chain is the characteristic feature of each RNA.

mRNA messenger RNA. Formed by transcribing the DNA in the cell nucleus. As a copy of a DNA strand it has the task of transporting the genetic instructions for a protein to the protein factories of the cell, the ribosomes.

tRNA transfer RNA. Its task is to absorb individual amino acids from the cell liquid and transport them to the ribosomes where they are used for protein synthesis.

siRNA small interfering RNA. Relatively short-chained RNA which plays a crucial role in RNA interference. As part of the RNA-induced silencing complex (RISC), it binds to a complementary piece of mRNA and triggers its cleavage (see illustration). The gene formed by the transcription of the mRNA is “silenced.”

miRNA micro RNA. Small RNA fragments which are formed by the cells themselves. Some 500 different miRNA or genetic instruction manuals for them have been found in human cells. Their exact functions are still under investigation. It is known, however, that different miRNAs are formed in different tissue types. It also appears that the upregulation of very specific miRNA plays a role in diseases, such as certain tumor types.

Giovanni di Paolo, detail from *Crucifixion of Christ*, ca. 1440–45
Central panel of the predella of a five-part polyptych, 33.9 x 25.4 cm

Fra Angelico, *Apparition of St. Francis at Arles,* 1429
Panel from the predella of an altarpiece for Santa Croce in Florence,
27.4 x 31.5 cm

Stories on Gold
Precious, Luminous, Full of Life

Both a stroke of luck and a sensation: With the support of the Ernst Schering Foundation, the Gemäldegalerie Berlin showed a unique anniversary exhibition, "Stories on Gold," from November 2005 to February 2006.

The Frankfurter Allgemeine Zeitung called it an "art historical sensation." Rightly so, because for its 175th anniversary, the Gemäldegalerie realized an exceptional project: Not only did it present precious gold-ground paintings by important artists of the early Renaissance, it also gathered the fragments of the oldest and largest altarpiece in the Tuscan region, which are dispersed all over the world.

The altarpiece by the painter Ugolino di Nerio, created circa 1325, once stood in the Florentine church of Santa Croce. Composed of a multitude of individual images, it showed Mary with the infant Christ, surrounded by a chorus of saints and scenes from the Passion of Christ. Altarpieces such as this one were created in the context of modern monastic orders. They represent a particular type of image whose development was above all influenced by Dominicans and Franciscans who, as part of their mission, make programmatic use of the image.

In the 16th century, the altarpiece was removed from Santa Croce and later demolished. The individual panels were sold. Today, 36 preserved parts are owned by museums in London, Los Angeles, New York, Philadelphia and Berlin. After year-long negotiations, they were gathered in Berlin for the first time and presented in a true-to-life reconstruction of the altar.

The altarpiece was the spectacular focus of an exhibition that also included works by famous painters such as Fra Angelico, Masaccio, Filippo Lippi, and Ghirlandaio. Museum visitors had the unique opportunity to view a particular type of image: the sequence of oblong-shaped panels on the pedestals (predellas) of great altars. In the 14th and 15th centuries, these paintings, which were characterized by an exceptional liveliness, became a central site of biblical imagery.

The works shown in Berlin, which date to the period of transition from the late Middle Ages to the early Renaissance, have one thing in common: They are all painted on gold ground. Many of these "stories on gold" had suffered the same fate as the panels of the di Nerio altarpiece and had been separated. For the exhibition in Berlin, important cycles of paintings were restored and reunited.

A stroke of luck for art history – and for art lovers from all over the world. With the aid of computer-based animation, they could even view the altarpiece in its original environment. The exhibition was accompanied by a lecture series featuring international speakers and a high-quality, comprehensive catalogue.

With its support of "Stories on Gold," the Ernst Schering Foundation realized an important goal: to conserve outstanding work. Cultural and artistic development is not possible without an awareness of one's cultural heritage. For that reason, the Foundation wants to make visible – and accessible to the public – also outstanding accomplishments of the past.

Kommander Kobayashi

syn chron

Shanghai Beauty

Crossing Boundaries to Broaden Horizons

New ideas and thoughts often develop at the intersection of traditional disciplines. By supporting projects at these interfaces and by bringing together artists and scientists from different disciplines and ways of thinking, the Ernst Schering Foundation seeks to build bridges and broaden horizons. Its goal is to create think tanks for new ideas and thus stimulate social progress. To that end, the Ernst Schering Foundation supported, among others, the exhibition “syn chron” by artist Carsten Nicolai and initiated the “Forum on Science and Art.”

Gail Wight, *Study for "Crossing,"* 2003

Forum on Science and Art

A Discussion Platform for Artists and Scientists

The Ernst Schering Foundation devotes itself to the intersections and interfaces between art and science. Not only does the Foundation support and honor representatives of both disciplines, it also aims to bring them together for a productive and fruitful dialogue.

One of the initiatives in this context is a discussion series entitled "Forum on Science and Art," which the Ernst Schering Foundation launched in 2005. The forum offers a platform to examine the relationship between science and art in today's world. Over the course of centuries, art and science have developed in close cooperation – so why is it that today the two disciplines are seen to be so separate?

The goal of the series is to examine differences, commonalities and interfaces in an intensive discussion featuring both scientists and artists. It seeks to suggest possibilities for learning from or with each other and for trying new and unusual paths in both disciplines. The idea is to leave familiar things behind and to apply creativity or methods in new ways.

To that end, the Ernst Schering Foundation invites predominantly young artists and scientists to a moderated, intense, small-scale dialogue about specific themes. Short presentations by both scientists and artists on the relevant topics start off the discussion. What do science and art have in common? What is their relationship today – and what was it like in the past? What goals do scientists and artists pursue in their work – and what are the theoretical principles they build on? How do they approach the medium of the image – and which importance do they attach to it? Which role does the image play in both disciplines? And last but not least, how does one communicate in art and science – and why?

By providing answers to these questions, the Ernst Schering Foundation hopes to give valuable impetus to both science and art. Because with them it is like with good friends. They may be able to live without each other. But they are ill-advised to do so.

The Art of Translation

Science and art have one thing in common: They both thrive on creativity. But are they therefore similar? Do they have something to say to each other? In October 2005, the Ernst Schering Foundation gathered renowned representatives of both disciplines for an intensive discussion as part of its "Forum on Science and Art" series. The topic of the symposium, which took place in Berlin: "The Artist as Researcher, the Researcher as Artist? Scientific Methodology – Artistic Creativity."

Collaborations between science and art are booming. In countless works, images and facts of scientific research make an appearance as artistic science fiction. There is hardly a museum that has not enhanced an art exhibit with scientific experiments. And the world of science, too, from time to time discovers its soft spot for contemporary art, hoping that an intuitive approach to the audience will help overcome the fear of science in a Luddite society.

The collision of the two estranged worlds has thus almost become the norm in the world of art. Interdisciplinary catalogues and conference documentations by the yard fill the office shelves of exhibition planners. Symposia and press releases again and again call for the dialogue between the creative heads from both disciplines. One is almost tempted to believe that everything has already been said on this topic, would it not have been for a round-table discussion organized by the Ernst Schering Foundation, which revealed a surprising need for debate. The findings accumulated by scientists and art historians, museum curators and artists stood in sharp contrast to the collaborative routine. Instead of addressing practical issues of cooperation, the experts launched a spirited discussion on basic methodological issues.

The invited speakers represented the different perspectives on the unequal partnership. Mischa Kuball, free-lance artist and professor for media art at the University for Design in Karlsruhe, talked about his artistic reconstruction of a medical model. Eugen Blume, director of the Hamburger Bahnhof – Museum for Contemporary Art in Berlin, described art as a very special "science." Anette Sommer, Group Head Research of Schering AG, warned of an overhasty appropriation of scientific illustrations by art. And Frank Rösl from the German Cancer Research Center in Heidelberg described the collaboration with artists as a source of inspiration for highly sophisticated basic research.

It quickly became clear that the encounter between science and art is predicated not on interdisciplinary inspiration, but on a profound speechlessness. No artist understands intuitively how creativity develops in large-scale research projects, if s/he takes the surface appeal of scientific illustrations for the research itself. Conversely, scientific institutes know very little about the idiosyncratic methods of contemporary art production, whose radical concerns sometimes seem like a utopian counter-image to the organization and division of labor in complex research settings.

Both artists and scientists never tired to emphasize that the creative thought processes themselves would be material for successful interdisciplinarity. Only when researchers and artists begin to understand each other's methodologies, will they be able to communicate in a common language. Not every project that is on display in the galleries and exhibition halls is even aware of these difficulties of translation, warned the art intermediaries in particular.

That the focus of the symposium was on the different methodologies could be seen as a signal of change in the rapprochement between art and science. Mere curiosity about the exotic other is no longer enough for collaboration. If both sides are to profit from each other, it takes more than a view beyond one's disciplinary boundaries.

In conclusion, the symposium formulated above all two demands: It expressed the desire to institutionalize the dialogue instead of continuing the blind collaboration and stipulated a methodological learning process. For however individualistic the perspective of art and autonomous its expressive modes, fact-based science needs the radicalism of artistic models. Still, the experimental openness to each other – this was made clear by the symposium – has to be re-won. Only then will the collaborations lead to changes in perspectives. Gerrit Gohlke, art critic, Berlin

The sound/space/light installation by Carsten Nicolai in the Neue Nationalgalerie

“syn chron” by Carsten Nicolai
Seeing With Your Ears

Both art and science at the same time: With his walk-through sculpture “syn chron” at the Neue Nationalgalerie in Berlin, artist Carsten Nicolai led an enthusiastic audience into a space beyond familiar auditory and visual experiences. Realization and presentation were largely supported by the Ernst Schering Foundation.

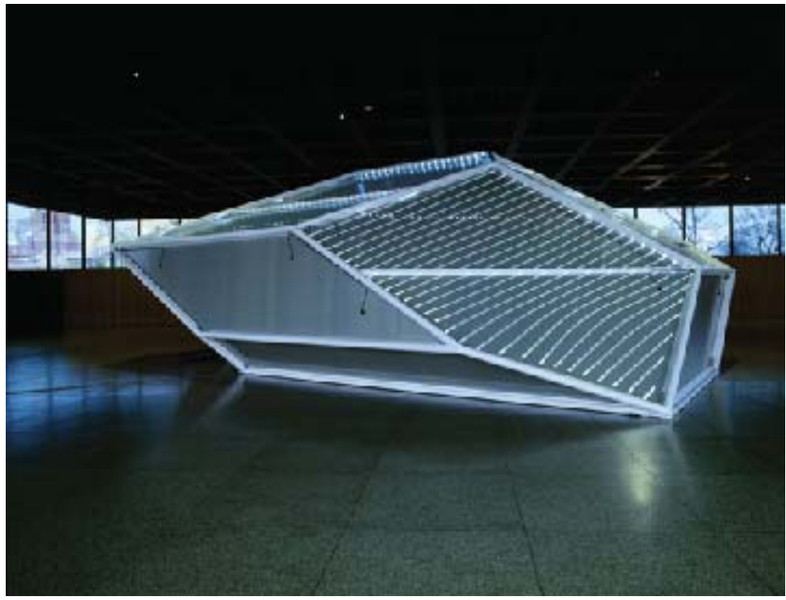
If you passed by the Neue Nationalgalerie between mid-February and early April, you might have been led to believe that an extraterrestrial spaceship had landed. An enormous crystal lay inside the museum. Futuristic. Fantastic. Enigmatic.

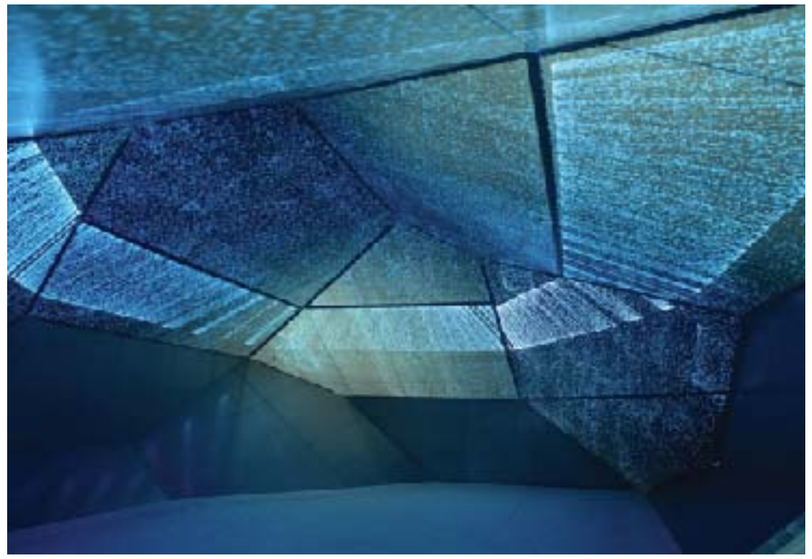
Those who dared to enter the enormous sound/space/light installation were confronted with unfamiliar, fascinating yet also unnerving sensations. Carsten Nicolai’s sculpture “syn chron” dissolves the boundary between hearing and seeing. It breaks down familiar modes of perception and combines light, sound and architecture into a technically sophisticated and aesthetically beguiling total work of art.

Electronic music causes the walls of the crystal to vibrate like membranes and turns its interior into a sound space whose vibrations can be sensed by the visitor. At the same time, the music is translated into light reflections and projects wave lines onto the surface of the gigantic sculpture. An extraordinary sensory experience, which attracted over 25,000 visitors in Berlin.

A visual artist? A musician? Or a scientist, after all? Carsten Nicolai, who for “syn chron” collaborated, among others, with architects, laser and audio specialists, is a little bit of everything – and therefore especially worth supporting by the Ernst Schering Foundation. The Foundation promotes projects where art and science learn from and enhance each other.

The tour partners were also enthusiastic about “syn chron.” The installation was subsequently on display at the Bern Biennial ’05 and – from December 2005 until February 2006 – in the Japanese city of Yamaguchi.





Day and Night – the walk-through sculpture “syn chron” dissolves the boundary between hearing and seeing, and combines light, sound and architecture to a total work of art.

CARSTEN NICOLAI, born in Chemnitz in 1965, is one of the most important representatives of an artistic trend that explores the intersections between art, nature and science. Employing the curiosity of a researcher, the artist and musician Nicolai tries to overcome the separation of human modes of perception. “syn chron” is his largest project to date. Works by Carsten Nicolai could be seen at, among other places, the documenta IX (1997), the Venice Biennial (2001 and 2003), the Museum of Modern Art in Sydney (2001), the Watari-um Museum in Tokyo (2002), and the Schirn Kunsthalle Frankfurt (2002 and 2005).

Kommander Kobayashi
A New Format for Opera

An opera? Or science fiction? Both! In early 2005, the audiences in the newly reopened Opera stabile of the Hamburg State Opera and the Sophiensæle in Berlin experienced a highly unusual opera production: A crew of space travelers embarked on a journey through the depths of space. An experiment – and a novelty. With "Kommander Kobayashi," the Berlin-based opera company of Novoflot has created a new format for the music theater. The ambitious project is supported by the Hauptstadtkulturfonds (German Capital Culture Fund) – and the Ernst Schering Foundation.

Production photo from *Ma vs. Comet*

The goal – and the mission – is unknown. Moreover, all kinds of dangers lie in wait. A captain leads a crew of astronauts on board the spaceship "La Fenice" through the orbit. A journey through nowhere. Odysseyic, dangerous, mysterious. And pioneering. With "Kommander Kobayashi," the Berlin-based opera company of Novoflot has hit a bold success. It transplanted a science fiction series into the opera house and developed a totally new form for the music theater – the operatic saga: a series of several thirty-minute chamber operas, written by different composers. Three operas form a series and an evening's program.

Why am I here? What is my task? How can I solve it? These are the questions that are asked in "Kommander Kobayashi." The mysterious odyssey is a journey to the big questions of life. It is about the search for meaning, about life and death, space and time, and above all about the encounter with the other – and with oneself. In early 2005, the focus was on

Production photo from *Kobayashi sings (under foreign stars)*

the organization of the crew and the team building process. Participating composers were Tanja León (Cuba/New York), Helmut Oehring (Berlin) and Jennifer Walshe (Ireland).

In the second series, envisioned for 2006, "Kommander Kobayashi" and his crew will embark on a journey to Moscow, Warsaw and Prague there to be confronted with the unknown. The recurring motif of the three episodes is risk – the moment where the travelers go beyond their familiar limits to experience and learn something new.

The performances will take place at the Vassiliev Theater in Moscow, the Teatr Wielki in Warsaw, the Théâtre National du Luxembourg, and the Sophiensæle in Berlin.

The Ernst Schering Foundation supports the project for its experimental and innovative intervention into a field of opera which is essentially still dominated by rather traditional approaches. "Kommander Kobayashi" is capable of sparking a debate about contemporary modes of composition in the music theater. Taking its cue from the TV format, the concept is suited to introduce a younger audience to high-brow music theater.

N O V O F L O T is a free-lance Berlin opera company. Founded in 2002, it made a name for itself with productions of the operas "Der Glockenturm" (The Belltower) by Austrian composer Ernst Krenek and "Antigone" by Tommaso Traetta. With the project "Kommander Kobayashi," Novoflot embarks on a search for new concepts for contemporary opera.

Scenes from *Shanghai Beauty*

Shanghai Beauty
Cultures of Aesthetics

The different approaches of Europe and Asia to the notion of beauty were presented by the ensemble of the transsexual Chinese dance star Jin Xing and the Berlin-based Rubato dance company. An inspiring and moving dance performance – supported by the Ernst Schering Foundation.

Beauty has many faces. For the most part, we know only a few. In the Chinese language, for example, there is no direct equivalent for the European idea of beauty. Instead, there is a much more comprehensive word: Mei Li. "It comprises warmth, friendliness, a peaceful demeanor both in gestures and facial expression," says Jin Xing.

The Chinese dancer and her Shanghai-based dance ensemble, the Jin Xing Dance Theatre, were guests of the Haus der Kulturen in Berlin in April 2005. A visit in the service of beauty. Together with the Berlin-based Rubato dance company, it presented the performance "Shanghai Beauty" as part of the "About Beauty" festival. 15 Chinese and German dancers explored the idea of beauty by means of movement and theater, fantasy and the fantastic – to the musical accompaniment of, among other pieces, the Well-Tempered Clavier by Johann Sebastian Bach. The focus was on the different understandings of beauty in Asia and Europe.

Combining, contrasting and conjoining two aesthetic ideas, two modes of being and seeing, it was the work of an artist with an exceptional life story: Jin Xing, who at age 17 was voted the best dancer in China, in 1994 underwent a sex change to become a woman.

The Ernst Schering Foundation supports projects that break down traditional perspectives and disciplines, cross boundaries and combine different ways of thinking. "Shanghai Beauty," a collaboration between German and Chinese artists engaging in a dialogue about the notion of beauty that encompasses high and popular culture, is such a project. The Ernst Schering Foundation is convinced that this can result in new ideas and insights.

Rubato dance company, Berlin, and Jin Xing Dance Theatre, Shanghai

Fellows Meeting

Jan Mancuska, Eastern Europe Fellowship

Dorothee Schmid, Doctoral Fellowship

Agnieszka Kois, Short-Term Fellowship

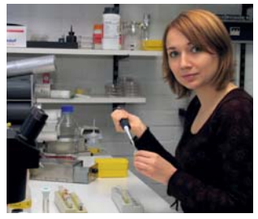
Fostering Young Talents to Promote Development

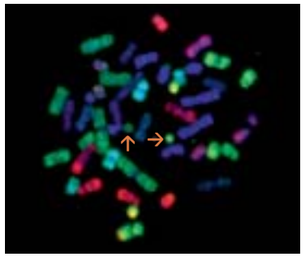
The Ernst Schering Foundation wants to support and honor exceptionally talented young scientists and artists and encourage them to take a leading role in society.

To that end, it not only awards prizes and fellowships, but also organizes programs and workshops on a variety of topics that go beyond purely specialist interests.

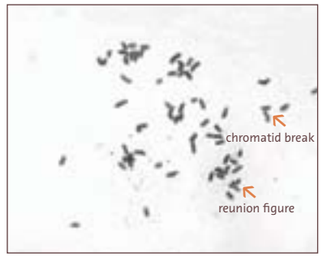
It is the wish of the Foundation to thereby assume the role of a mentor.

SHORT-TERM FELLOWSHIPS By granting short-term fellowships, the Ernst Schering Foundation provides young Polish scientists with the opportunity for a three-month research stay at a renowned guest laboratory in another European country.

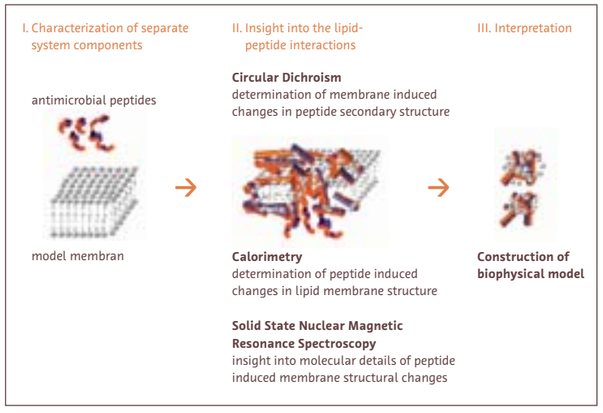




Fluorescent in situ hybridization (FISH) makes visible details of the defect.



Chromosome damage in mouse cell lines after treatment with camptothecin



Step-by-step analysis of the functioning of antimicrobial peptides on model membranes

Agnieszka Kois

The Segregation of Chromosomes

The genetic information of bacteria is contained on a single chromosome, which is found twice in each cell. Before a cell division, these homologous chromosomes are spatially separated. Agnieszka Kois examines the mechanisms of this "segregation."

The separation of homologous chromosomes is necessary for both resulting daughter cells to contain the whole genetic information. It is known that proteins such as ParA and ParB play an important role in the active segregation of chromosomes. But the mechanism is not yet fully understood. Of ParB it is known that it binds to certain regions of the DNA on the chromosome, thus forming a complex. In her dissertation at the Institute for Immunology and Experimental Therapy of the Polish Academy of Sciences in Wrocław, Agnieszka Kois seeks go gain further insights. To that end, she has chosen two strains of bacteria – streptomyces and mycobacteria – and in particular wants to focus on the mycobacterium tuberculosis, the etiologic agent of tuberculosis. Kois used the short-term fellowship to spend three months at the Max Planck Institute for Molecular Genetics in Berlin. She observed the ParB-DNA complex formation under the electronic microscope and examined the effect of ParB on the DNA structure of the bacteria. For her, it was a first step to "gaining more self-confidence about working in an international environment." Her hope: "A better understanding of segregation might help to impair it – one day, it may therefore be possible to develop new antibiotics to fight the proliferation of illness-causing bacteria."

Joanna Pietrzak

The Surplus Chromosome

Some people have a surplus chromosome fragment. In order to be able to evaluate potential health risks, Joanna Pietrzak analyzes such fragments with fluorescent probes.

Joanna Pietrzak works at the Department of Medical Genetics at the Institute of Mother and Child in Warsaw. The biotechnologist, born in 1979, examines illnesses that are caused by chromosome defects. In that context, she also deals with "small Supernumerary Marker Chromosomes" (sSMC). Affected persons do not only have the regular 46 chromosomes, but an additional fragment resulting from one of the other chromosomes. It is very helpful to be able to detect sSMC already during prenatal diagnosis and to evaluate the resulting risk. Because sSMC are smaller than regular chromosomes, the method by which one detects, for example, trisomy 21, is not suitable. Only the multicolor fluorescent in situ hybridization (FISH) makes visible details of the defect. Here, one uses DNA fragments marked with a fluorescent dye. They bind to certain places of the chromosome and thus make visible both the original chromosome of the marker chromosome and which of its segments it contains. "If I familiarize myself with a subject, I always want to know more about it," says Pietrzak. She used her fellowship for a "helpful stay" at the Institute of Human Genetics and Anthropology of the University of Jena. "In Warsaw, we do FISH with only two colors. In Jena, I for the first time used multicolor FISH techniques and performed detailed sSMC analyses."

Maria Mosor

Fatal DNA Damage

Often it is the genes' fault. For instance in the case of the Nijmegen Breakage Syndrome, where certain defects of the DNA are not repaired. Maria Mosor examines the connection to certain kinds of tumor.

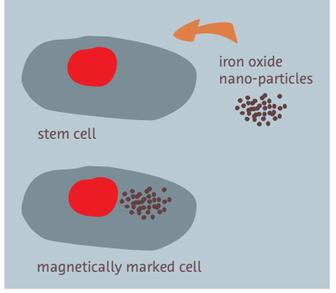
Cytotoxic substances or ionizing radiation can cause breaks in the DNA molecule. Fortunately, the organism has mechanisms to repair such damage. The protein nibrin plays a role in this process. Mutations in its genetic code, on the gene NBS1, are thus seen as cause of the Nijmegen Breakage Syndrome (NBS). Those affected suffer from an oversensitivity to ionizing radiation. Evidently, there also seems to be a connection between NBS1 defects and the susceptibility to tumors. As part of her doctoral research, Maria Mosor has analyzed the NBS1 gene of leukemia patients – and in many cases discovered a deviation. Currently, she is performing similar tests with breast cancer patients.
With the support of the Ernst Schering Foundation, the biotechnologist was able to spend three months at the Institute of Human Genetics at the Charité in Berlin, where the NBS1 gene had originally been discovered. She studied cell lines of mice whose nibrin gene had been deactivated – an opportunity that she does not have at home at the Institute of Human Genetics of the Polish Academy of Sciences in Poznan. Her interesting findings: The mice cell lines are also sensitive to mutagenes if the defect only applies to one of the two chromosomes on which the gene is located. For Maria Mosor, international research cooperation is very important: "I would love to deepen the contacts I have made."

Tomasz Borowik

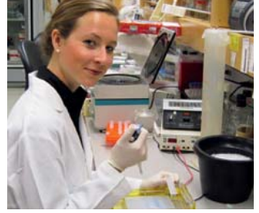
A Basis for New Antibiotics

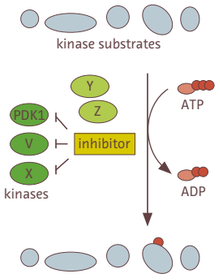
Antimicrobial peptides play an important role in the body's own defense against bacteria. Tomasz Borowik investigates the mechanisms of such peptides. This might lead to the development of new antibiotics.

Plants, animals and human beings – they all produce antimicrobial peptides (AMP) to guard against microbes such as bacteria. Through interactions with the cell membrane of the bacteria, the peptides disrupt the bacteria's activities, and the bacteria cell dies. We do not yet fully understand the details nor do we know how AMP distinguish between bacteria and endogenous cells. If they failed to do so, they would also attack the organism. Tomasz Borowik is investigating the interactions between AMP and membranes at the Wrocław University of Technology in Poland. Using a variety of techniques, the doctoral student examines how the physical-chemical characteristics of membrane models and the secondary structure of peptides change during an interaction. To that end, he uses thermal measurements and also Nuclear Magnetic Resonance spectroscopy (NMR). The fellowship of the Ernst Schering Foundation enabled him to perform specific NMR measurements at the University of Umeå in Sweden. "To come up with a good research plan, but also to remain open for surprises and new ideas" – this Borowik takes to be the motto of such guest research stays.
It is hoped that one day better knowledge about AMP effect could help customize new antibiotics – especially against bacteria that are already resistant to existing antibiotics.

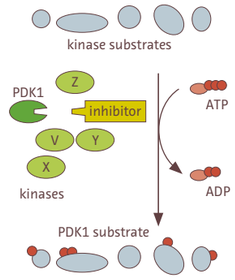


Marking of stem cells





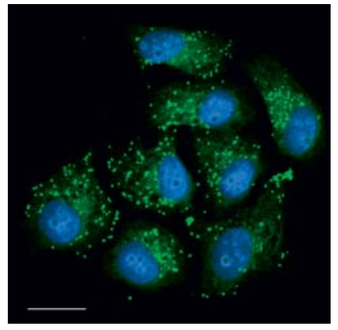
Unspecific kinase inhibitor



Specific kinase inhibitor and modified kinase

DOCTORAL FELLOWSHIPS The Ernst Schering Foundation supports young biologists, chemists and medical students through doctoral fellowships. Apart from providing financial support, the Foundation serves as a mentor, organizes meetings and provides an internet-based information network.

Leaf of a transgenic plant expressing an OBP2-controlled marker gene



Human cells, with recycling compartments made visible by a green fluorescent dye (DNA of the cell nuclei in blue)

Christian Ziener

Imaging Heart Muscles

As part of his dissertation at the University of Würzburg, the physicist Christian Ziener has developed a procedure by which the heart muscle tissue can be made particularly visible. This offers new hope for heart attack patients, because the imaging procedure could help in cultivating new muscle tissue.

Even if the patient survives, every heart attack involves death: Some heart muscle tissue always dies. And the heart muscle cannot regenerate by itself. Researchers thus plan to inject stem cells into the heart muscle tissue of heart attack patients to cultivate muscle fibers. But how can they control whether the cells get to the right place?
Christian Ziener has created the conditions for that to happen. The basis is the Magnetic Resonance Tomography (MRT), a standard procedure to obtain images from inside the body. Using an artificial heart model, Ziener showed how the fibers of the heart muscle tissue can be made visible – and distinguishable from the injected stem cells – with the aid of MRT. For the first time, he applied the "concept of state densities" from statistical physics to a medical question. In the future, it thus might be possible to guide stem cells precisely to the heart muscle – and observe their development.
For Ziener, one of the reasons why doctoral fellowships are important is that they guarantee "independence from other projects and higher authorities." For his research, he was presented with the Young Investigator Award (Second Place) of the European Society for Magnetic Resonance in Medicine and Biology.

Tanja Tamgüney

PDK1 and Cancer

Cancer cells want to divide so that the tumor can grow. The reason for this urge to divide is frequently a failed communication on the molecular level. In her dissertation at the University of California in San Francisco, Tanja Tamgüney examines whether the PDK1 enzyme plays a role in this process.

PDK1 is a kinase, i.e. an enzyme that activates or blocks proteins by transferring to them phosphates of ATP (adenosine triphospate). To investigate its possible role in the development and growth of cancer, researchers try to block PDK1 at a particularly promising point of attack: the binding site for ATP. But the problem is that human cells contain 512 kinases that all have similar binding sites for ATP. Currently, there is no pharmacological substance that only inhibits PDK1, but not the other 511 kinases.
Tanja Tamgüney uses a trick. The molecular medicine researcher has altered the gene encoding PDK1 by mutations so that the enzyme is different from the other 511 kinases with regard to its ATP binding site. It is therefore possible to construct a substance that only blocks the ATP binding site of PDK1. This would make it possible to observe the effect of PDK1 on tumors.
"What is fascinating about my work is the new scientific methodology, but of course also the clinical relevance to the treatment of cancer," says Tamgüney. If the inhibition of PDK1 were to lead to the reduction of the tumor, this would be an indication that the enzyme plays a role in the development of the tumor. This might be a conceivable starting point for therapy.

Aleksandra Skirycz

Investigating Glucosinolates

Many plant substances are also good for humans. If one knew the mechanism of their production, one could bring plants to produce more of them. Aleksandra Skirycz is investigating this issue, using the example of indolic glucosinolates.

Glucosinolates are part of many plants – and function as antibodies against fungi and bacteria. Moreover, their degradation products have a positive effect on humans, for instance as aromas and possibly as a defense against cancer. Researchers are thus eager to learn more about the plant production of glucosinolates. If they could bring plants to produce more glucosinolates, it would not only strengthen their immune system, but also improve their nutritional value for humans.
"I am totally fascinated by the plant metabolism and its application possibilities," says Aleksandra Skirycz, who is one of these researchers. In her dissertation, she studies which factors influence the production of indolic glucosinolate (IG). She does so at the Institute for Biochemistry and Biology of the University of Potsdam – where it had been discovered that the proteins OBP1 and OBP2 played a role in the transcription of the IG gene. The stipend for her stay in Potsdam was awarded by the Ernst Schering Foundation.
Her first findings: Using the example of the Arabidopsis thaliana, a plant widely used as a model organism in the lab, Skirycz identified above all OBP2 as a potential candidate to stimulate IG synthesis. Now she investigates whether OBP2 causes the transcription of the IG gene alone or with partner proteins – and whether it regulates still other genes.

Dorothee Schmid

Recognition of Infected Cells

How does the human immune system recognize infected or degenerate cells? This is the question Dorothee Schmid tries to answer. Her findings might contribute to the development of new vaccines.

Each cell of the body has a mechanism to cleave the protein into fragments – so-called peptides. These are then bound to certain molecules and presented on the cell surface. This happens irrespective of whether endogenous or foreign proteins are broken down. The only difference: If a presented peptide results from a foreign protein, it is recognized by the T cells of the immune system as "dangerous." The immune system destroys the corresponding cells. A useful protection mechanism, because foreign proteins can be signs of an infection or the result of cancer.
The details of the protein break-down are still largely unknown. Dorothee Schmid wants to shed light on this issue. In her dissertation at the Rockefeller University in New York, she tries to find out by which paths the proteins are transported to the so-called recycling compartments – those intracellular sites where the proteins are broken down. Moreover, she pursues the question of how it is possible that T cells are activated only when they deal with peptides of foreign origin. "My findings might lay the foundation for the development of new vaccines," says the biochemist. For her, "the medical relevance is a big motivation in the lab routine."

Fellows Program

The Network Is Alive

In June 2005, 60 young researchers gathered for the Fellows Meeting of the Ernst Schering Foundation in Berlin to exchange experiences and ideas. But the meeting was not only about a conversation with each other, but also with society. "How can we improve the dialogue between science and the public?" was one of the questions discussed as part of a workshop.

They came from England, Italy and Spain, Finland, Poland and Switzerland, the United States, Canada and Germany – young scientists who have all done excellent work in their respective fields. Some are current fellows of the Ernst Schering Foundation, others have won prizes awarded by the Ernst Schering Foundation, and yet others are former fellowship recipients of the Ernst Schering Research Foundation. Some study details of cell division, others investigate the protein synthesis in ribosomes or think about new ways of synthesis of certain target molecules. Some work at universities, others at research institutions, yet others as researchers in an industrial environment.

No matter how varied their places of origin and professional backgrounds – the 60 participants of the Fellows Meeting, who gathered for three days in the Harnack-Haus of the Max Planck Society in Berlin, had one thing in common: All of them were outstanding scientists.

Oncology, signal transfer, endocrinology, neurosciences, chemistry, bioinformatics and cell biology were the focus topics of the scientific program. In four sessions and a central poster presentation, numerous participants presented their current research, thus giving others an opportunity to broaden their horizons beyond their own specialties.

The scholarly exchange was only one focus of the meeting, however. The young scientists were also to become aware of their responsibility to society. One occasion for them to do so was a workshop on the "Public Understanding of Science" (page 38). In addition, eleven fellows had the opportunity to participate in a media and communications training, which took place directly after the meeting (page 39). "This offer is part of a larger program to provide long-term support to young scientists and to aid their development in becoming leading figures in science," says Monika Lessl, member of the board of directors of the Ernst Schering Foundation. Additional events on other useful themes are in preparation – such as helpful advice for young academics who for the first time organize a research group or direct a major scientific project.

At the meeting, the Deutsche SchülerAkademie (German Pupils Academy) also presented itself. Several times a year, at different locations, this initiative – which is supported, among others, by the Ernst Schering Foundation – organizes so-called academies. During these two-week seminars, taking place during school vacations, pupils deal intensively with a variety of topics and are introduced to scientific work and modern techniques of presentation.

Fellows Meeting in Berlin in June 2005

In 2005 alone, seven such academies took place, with a total of 640 participants. At the Fellows Meeting in Berlin, two pupils talked about their experiences during one such academy. With this presentation, the Ernst Schering Foundation sought to encourage young scientists to get involved in the dialogue with pupils.

A diversion from the rest of the program was provided by Susanne Weirich. In her lecture on "Alternate Endings," the installation artist presented some of her works – works that she sees always also "at the intersection between art and science," not least because "I use scientific working methods during the intensive research phase at the beginning of my projects." Occasionally, she even seeks the cooperation of scientists – for example, when she got members of the Max Planck Institute for Gravitational Physics involved in her video installation "Event Horizon" – a term from physics.

Getting in touch. Exchanging information. Initiating joint projects. These were three of the ideas that undergirded the creation of the virtual Fellows Network – www.scheringfellows.de – in 2004. This still young and password protected virtual network was presented to the participants of the Fellows Meeting. It gives fellows the opportunity to search for contacts on certain topics. The network's search function, for example, makes it possible for fellows to find co-fellows who work in a certain field. In general, the virtual platform is intended to make sure one thing in between Fellows Meetings: that the network is alive.

www.scheringfellows.de
www.deutsche-schuelerakademie.de
www.susanneweirich.com

Fellows Program

Promoting the Dialogue between Science and the Public

The public has a right to know what happens in research labs. This was the opinion of the participants of the workshop on "Public Understanding of Science," which took place as part of the Fellows Meeting. It was equally clear, however, that researchers needed to learn to frame their work in a larger context to be able to communicate their research in an interesting and exciting way.

Some scientists are familiar with the following situation: They have talked to a journalist about their work, thinking they had been correctly understood. But then they open the newspaper or watch the TV program – and can hardly believe their eyes or ears: misrepresentations of facts, simplistic dramatizations, quotations taken out of context. A misunderstanding? Or a systematic problem?

"The media and scientists have different interests," says Petra Pansegrau, professor for media studies at the University of Bielefeld. Pansegrau was one of four speakers at the workshop on "Public Understanding of Science," which took place during the Fellows Meeting of the Ernst Schering Foundation. "The media needs to draw attention to something while scientists want to increase and communicate knowledge." As an example, Pansegrau mentioned the media coverage of a possible climate change. Many media early on ignored the scientific uncertainty on this topic and provided one-sided information, thus even influencing political decisions.

In his talk, Christof Ehrhart, head of Schering Corporate Communications, pointed out "the importance of communication and transparency from the perspective of a pharmaceutical company in order to gain acceptance and credibility." According to Stephan Rösler, legal counsel at the Ministry for Education and Research, "science needs to go public, because the citizens want to be involved."

In general, it was noted that there had been a rise in the public's interest in scientific themes. This was proven by the growing number of daily newspapers featuring science sections and science programs on TV, said Volker Meyer-Guckel from the Donors' Association for the Promotion of Sciences and the Humanities in Essen.

The fellows organized a workshop on *Public Understanding of Science*.

But in order to be correctly understood in their dialogue with the media and the public, scientists need to employ a different language than the one they are used to. This was made clear by Christian Unger. The chemist is head of the Life Science Learning Lab (Gläsernes Labor) in Berlin, which seeks to communicate to laypeople, especially children, scientific themes in a clear and vivid way. "It can take a long time to find the right words," Unger says about his own experience.

At the end of the workshop, all agreed: Science needs to go public – not only to campaign for acceptance and credibility, but also to awaken curiosity and to communicate knowledge. It was noted that one had an obligation to inform, not least because scientists are largely financed by public funds.

The participants were aware of the fact that scientists needed to practice how to deal with the media. One recommendation was to talk as often as possible with laypeople about one's work in order to practice a suitable language. It was seen as equally important to find the appropriate "packaging" to make the topics interesting to others. "We have to be able to tell a story" was one of the conclusions.

Another result of the workshop was to not automatically highlight the risks or problems of a research area. "We need above all to emphasize the potential benefit of our work."

Media Training for Young Scientists

To be able to explain and justify one's work. For a whole day, eleven fellows practiced how to deal with journalists. The goal of the media training was to help scientists communicate their work in a clear and intelligible manner and field critical questions in an interview situation.

The interviews started without giving the interviewees any possibility for preparation. Off the cuff, the participants had to talk into the microphone about their research. Video recordings provided insights into the interviewees' body language, facial expression, enthusiasm, emotional involvement and whether their statements had been clear and intelligible. An instructive experience for the participants. Almost everyone had difficulty explaining his or her work without using technical terms.

The seminar was led by Winfried Göpfert, professor of science journalism at the Free University Berlin and science journalist Jörg Göpfert (no relation). In the second part, the duo confronted the young researchers with ethically provocative questions intended to make the participants think also about the societal relevance of their work. In the seminar setting, many in fact felt quickly under pressure and responded defensively and with little self-confidence. The participants of the training considered the experience to be "positive and rewarding." Many for the first time looked at their work from a different perspective. One participant worked out some rules for herself: "to be able to present one's complex topic in an easy-to-understand way, not to lose composure during an interview and to prepare well for media appearances."

Test run of an interview situation: fellow Melanie Dyllick-Brenzinger and science journalist Jörg Göpfert

Orchestra Academy of the Berlin Philharmonic
Learn, Live – And Play Lots of Music

STANISLAVA STOYKOVA, born in 1980 in the Bulgarian city of Varna, received her musical training, among other places, at the State Music Academy in Sofia, the Berlin University of Arts, and at the Liszt School of Music in Weimar.

Stanislava Stoykova

For the Bulgarian violist Stanislava Stoykova, her time with the Orchestra Academy is an unforgettable period of her life. Since the beginning of her studies in the fall of 2005, the scholarship recipient of the Ernst Schering Foundation has already learned a lot – both musically and personally.

Ms. Stoykova, what, in your view, is so special about the Orchestra Academy?
It enables young musicians to play in an orchestra that is an extraordinary one in every respect and to work with the greatest conductors. This remains an unforgettable experience. One learns a lot about chamber music, about how to play in an orchestra and how to deal with each other both as musicians and individuals.

Are there also important experiences in terms of your personal development?
Of course. I for one have learned that you are a much more interesting and independent person, the more varied, courageous, honest and sensitive you are. These characteristics distinguish a musician and make him or her unique.

What are the goals you have set for your studies?
To learn and to experience as much as possible – and to enjoy every minute of it!

Do you have favorite composers?
This is a difficult question. I like to play Beethoven, Richard Strauß, Mahler and Bartok. But basically every composer and every piece for me is a new challenge, something very individual and personal.

What will you do after the Orchestra Academy?
I would like to live in a big, interesting city and play in a good orchestra. I would also consider training as a soloist. Germany remains a land of dreams for musicians, since there are so many good orchestras. But if I were to receive a good offer in Bulgaria, I would not mind at all returning there.

MARTA MALOMVÖLGYI, was born in 1980 in Oroszlany, Hungary. The recipient of several awards, she studied oboe at the Franz Liszt Academy of Music in Budapest and at the University of Music and Performing Arts in Stuttgart.

Marta Malomvölgyi

Since September 2005, the Ernst Schering Foundation supports the young Hungarian oboist Marta Malomvölgyi by funding her a two-year course of study with the Orchestra Academy of the Berlin Philharmonic. For the artist, this is a unique possibility to gain experience in a top-level orchestra.

Ms. Malomvölgyi, you have applied to study with the Orchestra Academy – why?
Because the Academy offers me the unique opportunity to play with the Berlin Philharmonic Orchestra. It also gives you an additional artistic education.

What do you hope to achieve?
Above all, I want to gain experience in playing with an orchestra and broaden my solo repertory.

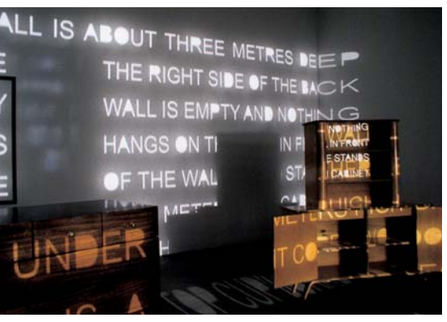
Which music do you like in particular?
I love chamber music for wood wind and strings. Woodwind quintets are a good training-ground for learning the right intonation and flexibility. But I am also interested in modern composers. Their pieces are very interesting for wind players. They force you to create totally new sounds! The instrument and its musical capabilities are enhanced and expanded.

What have you learned so far from your teachers at the Philharmonic Orchestra?
A lot – for instance about the technical aspects of the oboe. Since I have come here, I have learned a lot of details about the oboe reed. This is very interesting to me.

What are your goals as a musician?
I would like to pursue a career in a symphonic orchestra. I also hope to be able to perform many chamber concerts.

What will you do after your studies at the Orchestra Academy?
I would like to stay in Germany, maybe I will enroll in a solo class at a music academy, perhaps in Stuttgart.

THE ORCHESTRA ACADEMY of the Berlin Philharmonic was founded by Herbert von Karajan in 1972. The idea was to create an institution which prepares young, exceptionally talented instrumentalists for the standards of international top orchestras. The musicians apply for a two-year course of study, which is funded by a scholarship. The course of study includes private lessons with the concert masters, principals and soloists and the participation in rehearsals and concerts.
The Ernst Schering Foundation supports the Orchestra Academy by funding two scholarships.



Top:
home alone, 2005

Center left:
You will never see it all…, 2003

Bottom left:
Space behind the wall, 2004

Bottom right:
A cup…, 2005

Exhibition opening at the Künstlerhaus Bethanien, November 2005

Eastern Europe Fellowship for Jan Mancuska

“home alone”

While his materials are rarely spectacular, his creations are. The Czech artist Jan Mancuska produces works of great poetic density – fully in the tradition of the Arte povera. For a year, he lived and worked in the Künstlerhaus Bethanien in Berlin at the invitation of the Ernst Schering Foundation. There he created his installation “home alone,” which was on view in late 2005.

A woman called Eva leaves her partner because all he does is lazy about in front of the TV. Worse still, because he likes to lie sideways on the couch, he turns the TV monitor by 90 degrees. A true story. Jan Mancuska made it the starting point for his installation “home alone.” But the Czech artist infuses it with irony. The viewer who wants to learn the whole story about the lazy TV consumer gets into quite a sweat.

Jan Mancuska tells the story in four installments, whereby each sequence can be seen and heard on a different monitor. In front of each monitor is a couch, but the viewer hardly has time to make him- or herself comfortable. He/she perpetually has to run to the next TV set not to miss the next episode and installment of the story. In the end, he/she – unlike Eva’s partner – is out of breath.

The combination of language and movements in space is typical for the installations of the artist who was born in Bratislava in 1972. Intellectual abstract things, in this case the talking sequences, are confronted with direct sensory experiences – in the case of “home alone,” the viewer’s running through the room.

“Jan Mancuska no doubt is among the most promising Czech talents.” This was the estimation of the jury of the Ernst Schering Foundation who awarded the artist the Eastern Europe Fellowship for a one-year stay in Berlin. An opinion which is obviously shared by others. Among other things, Mancuska represented his country at the 51st Venice Biennial in 2005. His work will also be on display at the Berlin Biennial 2006.

JAN MANCUSKA, born in Bratislava in 1972, studied at the Prague Art Academy.

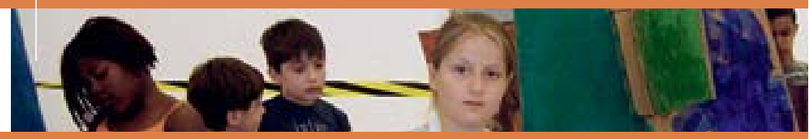
SELECTED EXHIBITIONS

2000 — Survival Art – Young Artists from Prague, Neuer Berliner Kunstverein
2002 — Manifesta 4, Frankfurt/Main
2004 — Read It, Andrew Kreps Gallery, New York
2005 — A Model of the World, 51st Venice Biennial
2005 — The First Minute of the Rest of a Movie, Kunstverein Bonn

C|O Junior

Teaching material

Bunter Jakob



Inspiring Youth to Increase Curiosity about Science and Art

To awaken curiosity and enthusiasm about “the adventure of science” and “the experience of culture” in children and young people is an important goal of the Ernst Schering Foundation. It wants to communicate insights into research and scientific processes and introduce children to cultural issues. To this end, the Foundation brings scientists into schools and pupils into universities – and contributes to making science classes more exciting. Moreover, it supports workshops for children, which make art and culture something to be experienced through active participation.

We Live on Mars.

C|O Junior
Let's Go to Reality!

Computer, gameboy, playstation. Today's children grow up with a plentitude of virtual media. But by spending a lot of time in front of the TV or the computer, they are exposed to fewer experiences and become mere passive consumers. C/O Junior seeks to counteract these developments. With the support of the Ernst Schering Foundation, the children and youth program of C/O Berlin, the Cultural Forum for Photography, offers a broad range of workshops which have one thing in common: They promote active perception and creativity.

C|O Junior teaches six- to fourteen-year-olds some things they cannot learn in front of the TV or computer screen: conscious seeing and other sensory and perceptual competencies, visual-aesthetic sensitivity, the creative translation of optical impressions – in short, an active, lively and alert experience of the world.

Under the supervision of a teaching and a creative professional, the participants are divided into small groups to gather impressions – during city walks or a museum visit, for example – which they later put to creative use in two-day weekend workshops. They thus acquire the skills to really perceive their cultural surroundings and become more aware of their environment.

In 2005, the children could again choose from a varied selection of workshops. "High Up. We Build a Skyscraper" introduced them to the world of modern architecture. Taking photographs with a digital camera was the topic of "Faces of Our City." In the workshop "The Little Inventor," the children visited a designer and designed a fantasy object. In "We Live on Mars," they built a spaceship and planned a city of the future. And under the title of "The Raging Reporter," they visited the Berliner Zeitung and subsequently produced their own magazine.

The results of the workshops were documented, presented in a big exhibition organized by the children themselves – and posted on the internet. The young workshop participants agreed: much more fun than watching TV!
www.co-berlin.com

High Up. We Build a Skyscraper.

C|O Junior Program 2006

— Mobility of the Future. What Will Be Our Means of Transport?
February 11–12
— Atlantis! Living Under Water.
March 4–5
— We Build Our Own Learning and Playing Palace.
March 25–26
— I Illustrate a Story.
April (Easter vacation)
— "Berlin Faces"
May
— The New Spring and Summer Fashion Collection!
May
— The Ultimate in Shrill!
June
— Patterns for Our City! We Design Patterns for the Walls of Our Houses.
July and summer party
— "The Little Designer." We Create Our Own Seat Furniture.
August
— The Symbol in Portrait. We Make a Photo Portrait.
September
— The New Fall and Winter Fashion Collection!
October (fall vacation)
— My First Photogram!
October (fall vacation)
— We Create an Exhibition!
November

Art invites you: Workshop of the Bunter Jakob studio at the Berlinische Galerie

Bunter Jakob Studio
Welcome to the World of Art!

Painting, drawing, making things with your hands? Experimenting with colors, forms and found things? No problem in the Bunter Jakob studio. Since 2004, the Kurszentrum Berlin has invited children and teenagers to get creative in the Berlinische Galerie – under the supervision of professional artists.

Some come while their parents visit the museum, others whenever they have time to spare. But one thing is for sure: Once they have set foot in the Bunter Jakob studio, they are not eager to leave. The creative study center of the Berlinische Galerie offers everything – except boredom.

Whether for a spontaneous visit or a weekend workshop – everybody is welcome to participate. To discover the museum together with other children. To learn how to paint pictures. To outline your body's shape with a wire. To build a camera obscura. To make art from found things. Or to glow in the dark – with home-made lamps and other shining objects.

On Family Sundays, three generations frequently construct, paint and draw together. Several times a week, school classes come to visit. Even birthday parties take place here. And upon request, the Bunter Jakob comes to your after-school care center, kindergarten or school.

Creativity that is contagious – and convincing. Thus the Ernst Schering Foundation supports the studio, which was created in cooperation with the Berlinische Galerie and the Verein Jugend im Museum. The Foundation is particularly intrigued by the direct link to the Berlinische Galerie. Many courses take place right in the museum, permitting children an immediate experience of art and the museum.

And this is to remain so for a long time. According to Professor Jörn Merkert, director of the Berlinische Galerie, with art it is as with vitamins: "As long as one has enough of them, one does not even notice, but once they are gone, one gets sick."
www.berlinischegalerie.de

"Scientific literacy is the capacity to use scientific knowledge, to identify questions and to draw evidence-based conclusions in order to understand and help make decisions about the natural world and the changes made to it through human activity." PISA Survey, 2000

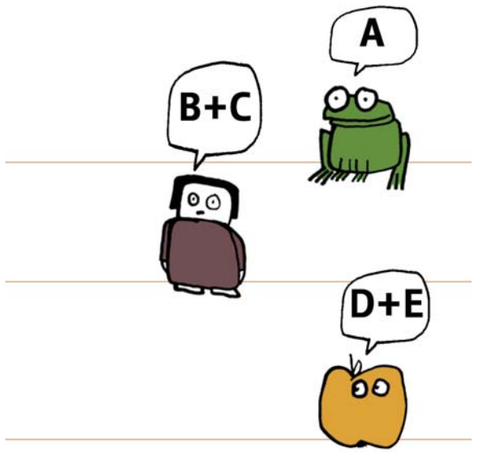
Science That Is Fun Wowed Instead of Bored

Science as an adventure: On a fictive trip around the world, the pupils learn how the body adjusts to different environmental conditions such as temperature and air pressure.

Many teachers know it all too well: Pupils cram chemistry and physics – but they do not love these subjects. The new interdisciplinary subject of "natural sciences" is to remedy this situation. In some Bundesländer, it has already been introduced. Regina Hübinger, scholarship recipient of the Ernst Schering Foundation, develops teaching material for it. To make learning exciting again.

Children and teenagers who enjoy chemistry and physics classes – this is a dream of many teachers and parents. How can one stimulate pupils' interest in science? This is a question also asked by education policy makers. Many German state governments have decided to reform their curricula. Instead of offering chemistry, biology and physics as separate subjects, they are introducing the subject of "natural sciences" in grades 5 and 6. In the context of a single teaching subject, pupils shall deal with scientific questions in a way that is closely related to life. In some Bundesländer this "integrated science curriculum" has already been implemented. But there is one problem: While the new subject already exists, there are hardly any suitable text books.

A reason for Regina Hübinger to devote herself to this topic. As part of her dissertation, the 32-year-old develops teaching materials for the new subject at the Institute for the Teaching of Chemistry of the University of Duisburg-Essen. A project that is supported by the Ernst Schering Foundation with a scholarship.



Three teaching modules with the main focus on experimental work are intended to facilitate teachers' approach to the subject of the "integrated science curriculum."

In her work, Regina Hübinger focuses on the body and its health. Under the title "My Body and Me on a Trip around the World," she developed a teaching series for grades 5 and 6, which will be published as a Teachers Handbook with support from the Ernst Schering Foundation. It takes the pupils straight into the heart of the natural sciences.

In an exciting, even entertaining way. The pupils go on an imaginary trip around the world. Already when it comes to the choice of food to take on the journey, all kinds of scientific questions present themselves. Why does one have to bring water – and what happens if the body has too little of it? How long does food keep – and what happens during conservation? Why do humans have to eat and drink at all? At a later stage of their journey, the travelers find themselves confronted with problems – and new questions.

What to do when milk turns sour? Why does pudding set only with hot water? What is the climate like in extreme travel regions? What happens in the body during extreme heat?

As part of the journey, experiments are performed, which the pupils design and carry out themselves. According to Regina Hübinger, "experiments in a normal chemistry class always have about them something of a cooking studio. One copies something without having any real connection to it." Appealing to the pupils' own initiative, she hopes to "be more practical-oriented and achieve a substantially higher learning efficiency." The new teaching material is also designed to introduce the children to scientific working methods.

Will it succeed? This is another question examined by the doctoral student. Since October 2005, she monitors the progress of seven school classes in North Rhine-Westphalia that use her materials. At the end, she will test what knowledge the pupils have brought back from their trip.

The Teachers Handbook combines course-specific content with educational material on teaching methodology and psychology.

Humboldt Gymnasium
Berlin-Tegel

Bringing Science into the Classroom

What Is Knowledge?

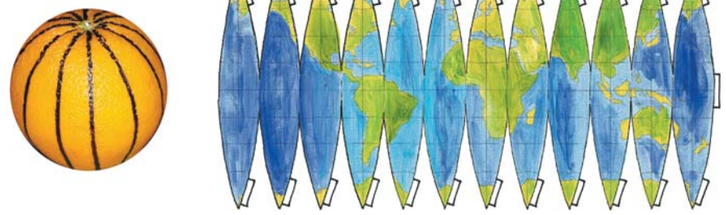
To familiarize young people with science – this is another goal of the Ernst Schering Foundation. In April 2005, it organized a lecture by Jürgen Mittelstraß at the Humboldt Gymnasium in Berlin to students of grades 12 and 13. The director of the Center for Philosophy and Theory of Science and professor at the University of Konstanz spoke as part of the "Humboldt Lectures" series organized by the school. More than 300 pupils who take physics, chemistry, biology, mathematics, informatics, and philosophy as a Leistungskurs (major), were riveted by what the science philosopher had to say about knowledge and discovery, the scientific mind and its self-created myths. What does knowledge mean? What distinguishes discovery from invention?
Can the world be fully explained by the scientific mind? The questions led to an intensive discussion between the scholar and a group of pupils majoring in chemistry, which the latter summarized in one word: Great!

The Fun of Chemistry

Enthusiasm for science has to be awakened – ideally as early as possible. The Philipps University in Marburg knows this, too. In the spring of 2005, the university's Chemistry Department for the third time organized a chemistry workshop for pupils – with the support of the Ernst Schering Foundation.
65 pupils from grades 12 and 13 came from all over Germany to act the role of chemistry student for two-and-a-half days under the supervision of Gerhard Hilt, professor of organic chemistry, and Martin Bröring, professor of inorganic chemistry at the Philipps University. Discovering, experimenting and learning new things were on the agenda. The young chemists experimented in the lab, listened to scientific lectures and collected information about study requirements. One of the highlights of the program was a lecture by Professor Karl-Michael Weitzel about astrochemistry. The evenings were organized by the department's student representatives. A nice result of the workshop: Many enthusiastic participants now want to study chemistry – who knows, maybe even in Marburg.

Einstein & Co.

Pupils who are interested in the sciences receive hardly any extracurricular support. The Ernst Schering Foundation wants to change this. It supports the Verein Bildung und Begabung, which since 1988 has offered academic programs – so-called summer academies – for exceptionally talented pupils. The initiative has made a name for itself under the name of "Deutsche Schüler-Akademie" (German Pupils' Academy). Since 2004, the Ernst Schering Foundation has supported the science academy. In the summer of 2005, 100 selected higher-grade pupils from all over Germany met at the Jugenddorf-Christophorus-Schule in Rostock to deal with the topic of Albert Einstein – from his theory of relativity to quantum mechanics to the philosophy of science. One of the highlights was a lecture, initiated by the Ernst Schering Foundation, by Professor Bernd Groner, cancer researcher at the Chemotherapeutic Research Institute Georg-Speyer-Haus in Frankfurt/Main about the molecular and cellular foundations of cancer diseases and new therapeutic approaches.

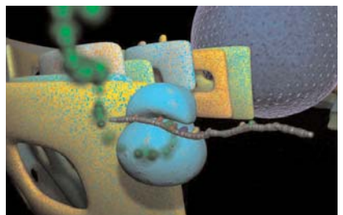


The globe as an orange, model of longitudes in *Heureka* magazine

Interactive CD-ROM

German culture and science shall become more widely known in the Land of the Rising Sun. Starting in April 2005, the "German Year" took place in Japan. From September 16 through November 17, the National Museum of Emerging Science and Innovation in Tokyo showed the "Science Tunnel." For several years, this exhibition organized by the Max Planck Society on the occasion of the EXPO 2000 has been traveling around the globe. It has been revised and updated. One module of the exhibition is an interactive CD-ROM, which has been produced on the topic of "regenerative medicine" with financial support from the Ernst Schering Foundation. It supplies basic information and uses the central nervous system and the heart to illustrate new demands for therapy and what these therapies will look like. The CD-ROM is distributed at schools and can be ordered at www.max-wissen.de.

Gene therapy using the example of the heart, excerpt from the interactive CD-ROM



Hans Herloff Inhoffen Prize for Petra Moritz

Heureka – A Chemistry Magazine for Children

In 2005, the Hans Herloff Inhoffen Prize was awarded for the first time. The award, given by the Ernst Schering Foundation, honors outstanding practical accomplishments in the field of the teaching of chemistry. The first prize recipient is Petra Moritz from Hornstein in Austria. For several years, the ambitious chemistry teacher has published a chemistry magazine for children – as a one-woman undertaking.

If taught without imagination, chemistry can be a terribly dull subject. This was also the experience of Petra Moritz, born in 1966, during her university studies – so she decided to change it. Eleven years ago, she presented an idea to the Austrian Chemistry Teachers Association (VCÖ): to publish a quarterly scientific magazine for children. "Heureka" was to provide complex information on specific themes – such as "Water," "Chemistry in Everyday Life" or "Color" – and to get children to experience chemistry with all their senses.
By now, Moritz – a chemistry teacher at the Theresianum private school and mother of two – has published 42 issues. All photos, illustrations and texts for the total of 1176 pages she drew and wrote herself. In her kitchen, she tests whether her little readers can carry out the described experiments risk-free – by using only the simplest means that can be found in any household. Her reward is the positive feedback from both children and parents in the form of letters to the editor or good grades.
The Hans Herloff Inhoffen Prize is awarded every other year by the Division on Chemical Education of the Society of German Chemists. It honors achievements in the field of chemistry and the teaching of chemistry, which render a particular service to teacher training or the practical teaching of chemistry in schools, universities and other educational institutions. The award is named for Hans Herloff Inhoffen (1906–1992). The head of the main laboratory of the Schering AG and professor for organic chemistry at the Technical University of Braunschweig took a particular interest in promoting young scientific talents.

MitOst Festival in Breslau/Wrocław

Neighborhood Projects in Central and Eastern Europe Foreigners Become Friends

There is only one solution to prejudice and bias: to get to know each other and to overcome boundaries. Both on the map and in your heads. These are the goals of the transnational projects of the MitOst association, three of which were supported by the Ernst Schering Foundation.

How do the people in Central, Eastern and South Eastern Europe live? How do they see themselves? And how do they see us Germans? These questions, which the MitOst organization has been asking for many years, have not lost their significance. On the contrary, in an increasingly complex world, they are more important than ever.
Take, for example, South Eastern Europe. The Balkan states actually have a lot in common. They share musical traditions, a common history and even linguistic idiosyncrasies. But when traveling through South Eastern Europe, one notices mainly one thing: The various nations define themselves against each other. Commonalities are overlooked, mutual distrust and rejection are the result.

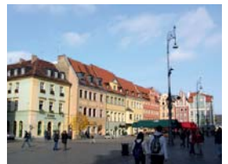
To get to know one's neighbors. To discover commonalities. These were the goals of the international student seminar on "What Is Home?" which took place in May 2005 with support from the Ernst Schering Foundation. Students from Ruse (Bulgaria), Constanta (Romania) and Novi Sad (Serbia) intensively dealt with the culture and history of their neighbor states and asked a lot of questions. What is home? Why is it so important? How do we define it – and why? The seminar participants collected cultural information in their respective home countries – images and descriptions of customs and festivals, song texts and much more – and finally met in Ruse to compare their material. Astonishing result: The commonalities predominate. Something seen as typically Romanian was also bound up with the notion of "home" in Serbia and Bulgaria. And vice versa.

Is it similar for Germans and Czechs? They have, after all, been neighbors for a long time, and for a large part of their history even lived in one empire. Yet their relationship today is not free of tension, weighed down by the Second World War, the period of the Iron Curtain and the repercussions of the EU enlargement in the border areas of both countries. "Neighbors: Foreigners or Friends?" was the title of a MitOst project workshop, which brought together 20 pupils from Regensburg and the Czech city of Domazlice. In the truest sense of the word. In April 2005, the young people traveled to the other country, where they stayed with families. On site they gathered information on backgrounds and conflicts starting in 1848 – and presented the results back in their home towns. What do the Czechs think about the Germans – and vice versa? What prejudices are there? Does the dark past still play a role? Not an insurmountable one, from the look of it. The 20 pupils became friends and want to meet again.

Internationalism and exchange were of course also the leitmotifs of the third MitOst festival, which convened approximately 400 members from 21 countries in the Polish city of Wrocław. They attended discussions, concerts, readings and film showings – and an international workshop on project management: How does public relations work? How do you build teams? How do you raise funds for international projects?

A welcome opportunity for MitOst members to get to know each other, exchange experiences and make new contacts. In a symbolic place, because the souls of two cities live on in Wrocław. For a long time, the Silesian city was called Breslau and a part of Germany, but the population largely had to leave between 1945 and 1947. After the Second World War, many inhabitants of Lvov (in today's Ukraine) were resettled to Wrocław, which has been its official name since then. The different cultural influences define the city until today – and played an important role in the cultural program of the MitOst festival.

City views of Breslau/Wrocław



MITOST FESTIVAL International understanding starts on a small scale. Therefore, the Ernst Schering Foundation, since 2003, supports transnational neighborhood projects in Central and Eastern Europe, which are sustained by the initiative and honorary commitment of young adults. It cooperates with MitOst, an association for the promotion of cultural and language exchange in Central, Eastern and South Eastern Europe. Its more than 1,200 members in over 30 countries are about to build an international network of contacts and carry out educational, exchange and cultural projects.

Headquarters of the Ernst Schering Foundation
in Berlin-Mitte

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