UNIVERSITÄT
BERN

HANS-SIGRIST-STIFTUNG
DER UNIVERSITÄT BERN

Die Hans-Sigrist-Stiftung der Universität Bern: 1994–2004.

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3012 Bern

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ITI Forschungsinstitut für Dental- und Skelettbiologie, Murtenstrasse 35,
Postfach 54, 3010 Bern

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Sulgeneckstrasse 70, 3005 Bern

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Gertrud Stiffler, interimistisch
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Barbara Lischetti †, 1995 bis 2003

Esther Tophinke, seit Beginn bis 1995

Homepage-Adresse

http://www.sigrist.unibe.ch

Einleitung

Am 4. Dezember 2004 – am Dies academicus der Universität Bern – werden wir den 11. Preis der Hans-Sigrist-Stiftung auf dem Gebiet «Public Governance» ausrichten. Am gleichen Anlass werden wir ein Förderungsstipendium einem jungen Forscher auf dem Gebiet «Historische Politologie: politische Geschichte im Spannungsfeld von Anthropologie, ‹politischer Theologie›, Sozial- und Politikwissenschaften (18.–20. Jahrhundert)» aushändigen.

Entstehung der Stiftung

Im Herbst des Jahres 1991 teilte die Erziehungsdirektion des Kantons Bern der Universitätsleitung mit, dass gemäss dem Testament von Hans Sigrist eine Stiftung zur Förderung der wissenschaftlichen Forschung errichtet werden könne. Entsprechend dieser Vorinformation wurde der Universität im Juni 1992 die zugehörige Dokumentation zugestellt mit dem Auftrag, Stiftungsstatuten auszuformulieren und einen Stiftungsrat wählen zu lassen. Am 1. Dezember 1992 wählte der Senatsausschuss den Stiftungsrat, der am 11. Dezember 1992 zur konstituierenden Sitzung zusammentrat und den amtierenden Rektor Andreas Ludi als Präsidenten wählte. Die Anlage des Stiftungsvermögens und die Ausarbeitung von Statuten zur Erfüllung des Stiftungszweckes gehörten zu den ersten Aufgaben des Stiftungsrates.

Die ursprüngliche Bestimmung, den Erlös des Stiftungsvermögens für eine in Westeuropa vollbrachte wissenschaftliche Leistung auszurichten, entsprach nicht mehr den geopolitischen Verhältnissen der 90er Jahre und hätte den übergeordneten Stiftungszweck der Förderung der wissenschaftlichen Forschung nicht erfüllen können. Damit die Statuten der Stiftung auf ein solides rechtliches Fundament abgestützt werden konnten, wurde das Advokaturbüro von Prof. F. Kellerhals beauftragt, die zeitgemässe Anpassung des Stiftungszweckes gemäss dem im ZGB festgelegten Verfahren durchzuführen. Entsprechend wurde das Stiftungsstatut am 12. August verurkundet. Eine durch die Erfahrung der ersten Jahre bedingte Fassung von Statut und zugehörigem Reglement wurde von den zuständigen Behörden am 21. Januar 1997 genehmigt,

wodurch der Stiftungsrat über eine zeitlich kontinuierliche Leitlinie für seine Arbeit verfügen konnte.

Massgebend für die Erfüllung des Stiftungszweckes sind die im Statut enthaltenen Bestimmungen:

Zweck der Stiftung ist die Förderung der wissenschaftlichen Forschung und die Honorierung hervorragender wissenschaftlicher Leistungen, gleichgültig in welchem Fachgebiet.

Der Stiftungszweck wird erreicht durch die alljährliche Ausrichtung des «Hans-Sigrist-Preises» für eine hervorragende wissenschaftliche Leistung, durch die Vergabe von «Hans-Sigrist-Förderungsstipendien» und durch weitere wissenschaftsfördernde Massnahmen. Die jährlichen Aufwändungen betragen insgesamt höchstens Fr. 600'000.-.

Für die Preisvergabe setzte sich der Stiftungsrat zum Ziel, nicht primär bereits mit vielen Preisen dotierte Persönlichkeiten auszuzeichnen, sondern den Preis jüngeren Forschenden als Würdigung und Ansporn zuzusprechen. Mit den Stipendien wird dem stets wichtigen Gebot der Förderung des akademischen Nachwuchses Folge geleistet. Schliesslich fördert die Stiftung mit den Zuschüssen an Gäste der Universität Bern die wichtigen internationalen Kontakte.

In den ersten Jahren bildete die Vermögensanlage ein wichtiges Traktandum für den Stiftungsrat. Der Finanzausschuss holte eine Reihe von Offerten für die durch das Statut vorgegebene Anlagestrategie ein. Nicht zuletzt auch wegen der sehr positiven Erfahrungen der Joseph-Steiner-Stiftung wurde die Firma Security Invest mit der Vermögensverwaltung betraut.

Kurzporträt der Stiftung

Die Hans-Sigrist-Stiftung an der Universität Bern wendet alljährlich einen Betrag von ca. Fr. 600'000.– zur Förderung der wissenschaftlichen Forschung auf.

Einziges Organ der Stiftung ist der vom Senatsausschuss gewählte Siftungsrat, in dem die verschiedenen Wissenschaftsgebiete der Universität vertreten sind.

Die Summe von Fr. 600'000.– wird im Wesentlichen in die folgenden drei Projekte investiert:

Hans-Sigrist-Preis

Der mit Fr. 100'000.– dotierte Preis wird für hervorragende Leistungen in einem vom Stiftungsrat bestimmten Wissenschaftsgebiet verliehen. Das international abgestützte Nominationsprozedere sorgt für die gebotene hohe wissenschaftliche Qualität der Preisträgerinnen und Preisträger.

Hans-Sigrist-Stipendien

Die für eine Dauer von ein bis zwei Jahren zugesprochenen Stipendien werden in einem zum Voraus bestimmten Wissenschaftsgebiet ausgeschrieben und in einem kompetitiven Verfahren an qualifizierte, an einer akademischen Laufbahn interessierte Absolventinnen und Absolventen unserer Universität zugesprochen. Dieses Instrument dient gezielt der Förderung des wissenschaftlichen Nachwuchses an der Universität Bern. Die Höhe der Stipendien richtet sich nach den Lohnansätzen des Mittelbaus an der Universität Bern.

Hans-Sigrist-Zuschüsse

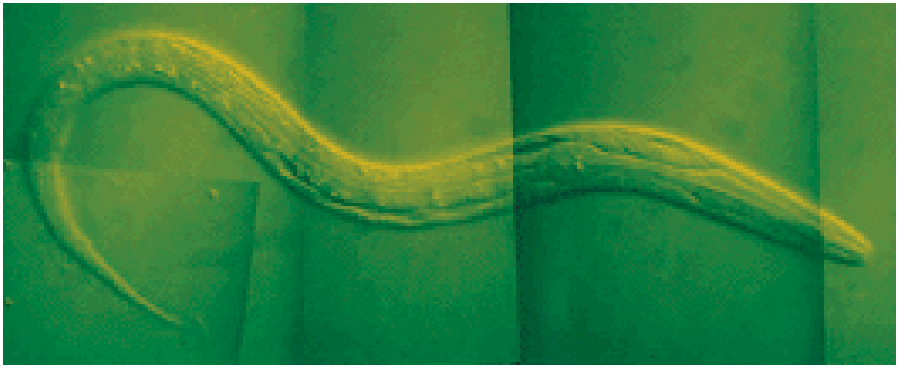
Forschungsaufenthalte ausländischer Dozentinnen und Dozenten an Instituten der Universität Bern können auf Gesuch des hiesigen Gastgebers/der hiesigen Gastgeberin mit einem Beitrag von Fr. 1'000.– pro Monat unterstützt werden. Diese Beiträge zur Förderung der internationalen Forschungskontakte werden für eine Dauer von einem bis sechs Monaten zugesprochen.

Inhaltsverzeichnis

1994 Hans Sigrist Prize

H. Robert Horvitz

Through genetic analysis of the nematode Caenorhabditis elegans, Dr. H. Robert Horvitz discovered and characterized many genes that play highly specific roles during animal development and in animal behavior. He defined genes that control specific aspects of cell lineage and cell fate, including the generation of cell diversity during development; the timing of particular developmental events; inter- and intracellular signaling; and programmed cell death. Dr. Horvitz's molecular analyses of these genes revealed most of them to be strikingly similar to genes found in other organisms, including humans, and in many cases similar to genes that cause human disease. One specific major discovery made by Dr. Horvitz during his studies of nematode cell lineage is the finding that cell death is an active biological process involving a specific set of genes. He discovered that these genes



function within cells that die to bring about their deaths and defined a genetic pathway that constitutes the genetic «program» for programmed cell death. These findings established a pathway for programmed cell death that appears to be conserved from nematode to human and that is important both in animal biology and in a variety of human diseases, including certain cancers and neurodegenerative disorders.

The receipt of the Hans Sigrist Prize was a milestone in my career, as it was the first international prize or honor I received and was followed by awards from Canada, Germany, Sweden, France, England and Italy, including the Nobel Prize for Physiology or Medicine, in 2002. The Hans Sigrist Prize was an honor deeply appreciated by me and no doubt was an endorsement to other prize committees. The funds from the Hans Sigrist Prize have been very useful, in large part because their use is unrestricted, unlike the funds from every other funding source I have had. For this reason, I have been able to use these funds for special purposes, including the purchase of major computer equipment and travel to scientific meetings. I am grateful to the Hans Sigrist Prize Committee for both the honor and the monetary support that have helped in the development of my career and in my scientific research.

Contact address:
Prof. H. Robert Horvitz, Howard Hughes Medical Institute, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139, USA, E-mail: horvitz@mit.edu

1995 Hans Sigrist Prize

Joseph P. Newhouse

Newhouse received his award for leading a research team that designed and carried out a randomized trial in health care financing, the RAND Health Insurance Experiment. In the late 1970s and early 1980s the Experiment randomized over 2000 non-elderly families to pay varying amounts for medical care services. At one extreme families received all services free of charge. Other families paid 25, 50, or 95 percent of their medical bills, up to a maximum of $1000 (US). (An equivalent maximum in 2004 would be about $6,000.) If $1000 exceeded a certain percentage of a family's income, however, the maximum was scaled down to either 5, 10, or 15 percent of income (families were randomly assigned to these percentages). Families participated for either three or five years.

The award allowed me to write a set of lectures, the Walras-Pareto Lectures, given at the University of Lausanne in 1998, on the subject of paying for medical services. Subsequently it also allowed me to expand those lectures into a book, Pricing the Priceless: A Health Care Conundrum, which was published by the MIT Press in 2002. In 2003 the book won the Paul A. Samuelson Certificate of Excellence from the TIAA-CREF Institute. The book allowed me to pull together the academic literature on how to pay for medical services and juxtapose that literature with my experience from having served for eleven years on a Commission that recommends to the US Congress how and how much to pay for medical services in the American Medicare program.

Families who had to pay 95 percent of their medical bills up to the maximum used about 30 percent fewer medical services than families who received medical services free. On average they made two fewer physician visits each year and were 20-25 percent less likely to be admit-

ted to a hospital. For the average person this reduction in use made little or no difference to their health. Those who were poor and sick, however, had substantially worse control of blood pressure, resulting in a predicted 10 percent increase in mortality.

Some families were randomly assigned to a health maintenance organization. Although they did not have to pay, these families also used less medical care than their counterparts who could see any physician and did not have to pay. Nonetheless, on average their health did not suffer, although there was suggestive evidence that those who were poor and sick in this group were also worse off.

In addition to its finding on patient payment, the Experiment's results pointed up problems with the quality of medical care that have been confirmed with later studies, both in the US and elsewhere. The Experiment also developed methods for measuring health status that are now in use worldwide.

Contact address:
Prof. Joseph P. Newhouse, Howard Medical School 202-B, Department of Health Policy and Management, 180 Longwood Avenue, Boston MA 02 115, USA
E-mail: Joseph_Newhouse@havard.edu

1996 Hans-Sigrist-Preis

František Šmahel

Im Einklang mit der gestellten Zielsetzung habe ich aus den Mitteln des Hans-Sigrist-Preises das Colloquium Mediaevale Pragense zum Thema «Geist, Gesellschaft, Kirche im 13.–16. Jahrhundert» veranstaltet, das vom 5. bis 10. Oktober 1998 in Prag stattgefunden hat. Von wissenschaftlicher Seite hatten hierfür Prof. Dr. Peter Blickle (Uni Bern), Prof. Dr. Ivan Hlaváček (Karls-Universität zu Prag), Prof. Dr. A. Patschovsky (Uni Konstanz) und Prof. Dr. Rainer Chr. Schwinges (Uni Bern) für die Auswahl der Referenten gesorgt. Auf dem Kolloquium selbst wurden 22 Referate und Diskussionsbeiträge vorgetragen. Von den 14 ausländischen Doktoranden und Habilitanden kamen 6 aus Bern, 5 aus Konstanz und jeweils einer aus Leipzig, Lublin (Polen) und Wien. Fünf der acht tschechischen Referenten stammten aus Prag (3 Teilnehmer von der Philosophischen Fakultät der Karls-Universität, Referenten aus dem Historischen Institut der Akademie der Wissenschaften), ein Referent kam von der Philosophischen Fakultät der Palacký-Universität in Olmütz, einer von der Philosophischen Fakultät der Masaryk-Universität in Brünn und eine Teilnehmerin von der Pädagogischen Fakultät der Purkyn-Universität in Aussig. Die nach Themenbereichen gegliederten Sitzungen wurden jeweils von bereits erfahrenen Historikern aus der Reihe der ausländischen Teilnehmer moderiert. Konferenzsprachen waren Deutsch und Englisch. Dem wissenschaftlichen Teil der Tagung ging ein Empfang voraus, an dem auch Vertreter der Akademie der Wissenschaften, der Philosophischen Fakultät der Karls-Universität sowie prominente tschechische Mediävisten teilnahmen. Für die ausländischen sowie nicht aus Prag stammenden Teilnehmer wurden zudem zwei Exkursionen organisiert. Der Tagungsband mit den Referaten und Diskussionsbeiträgen erschien im Jahre 1999 als erster Band

der Reihe Colloquia mediaevalia Pragensia, versehen mit einem ausdrücklichen Dank an die Hans-Sigrist-Stiftung.

Dank des Hans-Sigrist-Preises war ich in der Lage, einige mit der Gründung des Prager Zentrums für Mittelalterforschung (Centre for Medieval Studies) verbundene Ausgaben zu begleichen. Das Zentrum, dessen Aufgabe in erster Linie in der Ausbildung und Unterstützung junger Wissenschaftler liegen wird, bildet eine gemeinsame Einrichtung der Akademie der Wissenschaften der Tschechischen Republik und der Karls-Universität. Konkret habe ich Aufwendungen für vorbereitende Arbeiten am Projekt in einer Zeit ausgelegt, als das Zentrum noch nicht über eigene Mittel verfügte. Darüber hinaus habe ich für die Handbibliothek einige grundlegende Studienhandbücher und Editionen erworben. Schliesslich war ich in der Lage, dank des Hans-Sigrist-Preises mehrere kürzere Studienaufenthalte in München und Konstanz zu finanzieren, die ich ganz der Beschäftigung mit der neuesten, in Prager Bibliotheken nicht zugänglichen Literatur gewidmet habe.

Kontaktadresse:
Prof. Dr. F. Smahel, Kuttelwascherova 925, CZ-19800 Praha 9
E-mail: smahel@hiu.cas.cz

1997 Hans Sigrist Prize

Jack W. Szostak

In 1997, I was honored to receive the Hans Sigrist Award, along with my colleague Gerald Joyce, in recognition of our development of technology for the directed evolution of RNA molecules. By applying the principles of natural Darwinian evolution to the laboratory manipulation of large populations of synthetic RNA molecules, we were able to evolve RNA molecules that stick tightly to a specific target molecule, while ignoring other molecules around it. These RNAs, known as aptamers, have many potential applications, including the treatment of certain diseases.

Later, we used the same methods to evolve, in the laboratory, RNA molecules that could catalyze a wide variety of chemical reactions. This was very exciting to us because it provided support for the theory that RNA could have played a crucial role in the early evolution of life, before the evolution of proteins. In order to explore this idea further, we decided to evolve new catalytic RNAs, known as ribozymes, that would catalyze reactions relevant to early life. The Hans Sigrist Prize helped my laboratory to continue these RNA evolution experiments. In the years immediately after the Prize award, we were able to evolve new ribozymes that catalyzed acyl-transfer reactions, which are central to protein synthesis. These experiments showed that, in very early, primitive cells, RNA molecules could have facilitated all of the chemical steps required for protein synthesis, including the attachment of amino acids to their transfer-RNAs, and their subsequent assembly into long protein chains. The first step turns out to have considerable technological significance, as many laboratories around the world are trying to develop ways of incorporating non-standard amino acids into proteins. This work continues today in the laboratory of one of my former students has continued to develop improved ribozymes

that can charge tRNAs with amino acids, simultaneously lending support to the role of RNA in the origin and early evolution of life, and developing new tools for applied biotechnology.

The Hans Sigrist Prize provided extremely welcome recognition of the significance of my research in the area of directed evolution, and therefore helped to inspire me to continue and even expand our work in this field. The Prize money itself was very helpful to me in improving the quality of my laboratory. The Prize allowed me to invite promising young scientists from other countries to interview for postdoctoral positions, and helped provide more opportunities for the students and postdocs in the lab to travel to present their findings at scientific meetings. In addition this unrestricted funding contributed to the support of undergraduate research training in the lab, and better access to scientific literature through improved computational infrastructure. I am very grateful for the recognition and support provided by the Hans Sigrist Prize.

Contact address:
Prof. Jack W. Szostak, Massachusetts General Hospital, Department of Molecular Biology, WEL 931, Boston MA 02 114, USA, E-mail: szostak@mdbio.mgh.harvard.edu

1997 Hans Sigrist Prize

Gerald F. Joyce

In 1997, together with Prof. Jack W. Szostak, I was awarded the Hans Sigrist Prize for our work concerning the evolution of RNA in the laboratory. These studies are relevant to understanding the origin of life on Earth. It is believed that an RNA-based genetic system, usually referred to as the «RNA world», preceded the DNA and protein-based genetic system that has existed on Earth for the past 3.5 billion years. Our research aims to recapitulate the biochemistry of the RNA world in the laboratory. Prof. Szostak and I have devised test-tube evolution methods that allow us to explore the catalytic potential of RNA, especially to search for RNA enzymes that have the ability to catalyze their own replication.

Since receiving the Hans Sigrist Prize on a crisp December afternoon seven years ago, my work on RNA evolution has continued. The funds from the Prize helped my laboratory to initiate a new line of investigation concerning the minimum compositional requirements for RNA-based evolution. RNA normally consists of four different nucleotide subunits: A, U, G, and C. But is this necessarily the case? In work published in 1999, we demonstrated how a four-letter RNA enzyme could be converted, through test-tube evolution, to a corresponding three-letter enzyme that completely lacks C. In 2001 we showed how a three-letter RNA enzyme could be evolved starting from a population of random-sequence molecules that contained only three letters, and showed how this three-letter enzyme subsequently could be evolved to a corresponding four-letter enzyme. Finally, in 2002, we began with the three-letter enzyme and evolved it to obtain an RNA enzyme that contains only two letters, lacking both C and G. Two different subunits are the minimum needed to carry genetic information and thus to provide the basis for Darwinian evolution.

The family of two-, three-, and four-letter RNA enzymes all catalyze the joining of RNA molecules through a reaction equivalent to that used to copy RNA molecules in biology. Employing the four-letter version of the enzyme, we directed it to join two RNA molecules to form an exact copy of itself. The copies in turn were able to do the same, resulting in the RNA-catalyzed replication of RNA. This system behaves autocatalytically, but it does not undergo Darwinian evolution because the copies are identical to the parents. Evolution, both in nature and in the test tube, requires heritable yet mutable genetic information.

The Hans Sigrist Prize, in addition to being a special honor, provided unrestricted research funds that enabled me to initiate studies that were more risky than would normally be supported by a government research grant. Once those studies began to bear fruit, it was possible to obtain additional funding from more traditional sources. Thus the Prize served as the seed that ultimately led to further advances in our research program. It also seeded what has become an ongoing scientific collaboration between Prof. Szostak and myself. Too often science is depicted as fierce competition between scientists as they race to make some important discovery. More often, however, it is the community of scientists working together that bring about new understanding, and discoveries are made nearly simultaneously by two or more individuals because the field is ripe for such a discovery. The Hans Sigrist Foundation recognized this in awarding the 1997 Hans Sigrist Prize to both Prof. Szostak and myself. I am pleased to report that the two of us have had many scientific discussions since that December day in Bern, and recently, together with Prof. Steven A. Benner, we were awarded a collaborative grant from the U.S. National Science Foundation to establish a Center for Chemical Bonding for the study of Darwinian chemical systems.

Contact address:
Prof. Gerald F. Joyce, The Scripps Research Institute, Department of Chemistry and Molecular Biology, 10550 North Torrey Pines Road, La Jolla, California 92037, USA, E-mail: gjoyce@scripps.edu

16

1998 Hans Sigrist Prize

Michel Orrit

Individual fluorescent molecules are now currently imaged with optical microscopes and sensitive detectors. 'Optical spectroscopy of single molecules in physics, chemistry and biology' was the topic of the Hans Sigrist Prize, which I had the honour to receive in 1998. Since that time, my group and myself developed single-molecule investigations further, particularly towards the production of single photons. In 1905, A. Einstein, then in Bern, attributed the photo-electric effect to light grains, later called photons. Individual photons could be detected already in the 1950's with photomultipliers, but the production of individual photons is more difficult. How to produce one and only one photon, on demand ? We have suggested that a single molecule can do that, because it only emits one photon at a time. One just has to prepare the molecule in its emitting state, with certainty. Generous support by the Hans Sigrist Foundation helped us build up the single-photon source described in [1], which demonstrated the feasibility of the idea. The production of single photons has many important potential applications, for example in quantum cryptography, i.e., the communication of a coding key with absolute secrecy against eavesdropping [2].

More recently, we developed a special objective for low-temperature microscopy. Normal objectives are designed for microscopic work in ambient conditions, for example for biology. A single-photon source, however, works best at cryogenic temperatures, which conventional objectives can't withstand. Part of the prize's funding was spent on the design of the objective shown in the attached Figure, enabling better imaging and fluorescence collection at low temperatures and in ultrahigh vacuum.

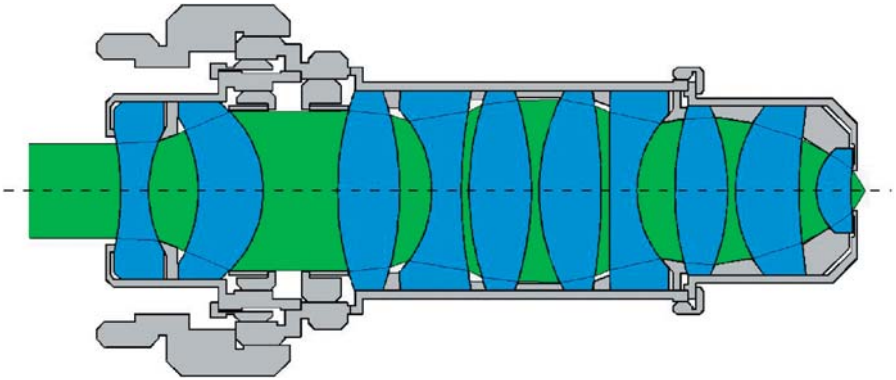
By supplying considerable funding 'with no strings attached', the Foundation

has been instrumental in the latest developments of single-molecule spectroscopy. It is a great pleasure for me to gratefully acknowledge its contribution.

[1] Brunel C. et al., Phys. Rev. Lett. 83 (1999) 2722.
[2] Gisin N. et al., Rev. Mod. Phys. 74 (2002) 145.

The financial support of the Prize helped me fund my various activities and react rapidly and with total flexibility to the unexpected situations popping up in everyday scientific research. Examples are the design of a dedicated scientific instrument that no national institute alone would have funded, or the financial support of a promising young scientist for a post-doctoral stay in the USA.

From a more personal perspective, I am convinced that the Prize played an important part in the negotiations that ended up with my installation as a full professor at Leiden University, in the Netherlands, in 2001.



Optical ray-tracing of the 10-lens objective designed by the company Bernhard Halle Nflg (Berlin, Germany) for low-temperature operation. The objective offers excellent spatial resolution and fluorescence collection in extreme environments.

Contact address:
Prof. Dr. Michel Orrit, MoNOS, Huygens Laboratorium, Universiteit Leiden, Postbus 9504, 2300 RA Leiden (The Netherlands), Tel. (31) (0)71 527 1720 / 5910, Fax (31) (0)71 527 5819, E-mail: orrit@molphys.leidenuniv.nl, www.monos.leidenuniv.nl

1999 Hans Sigrist Prize

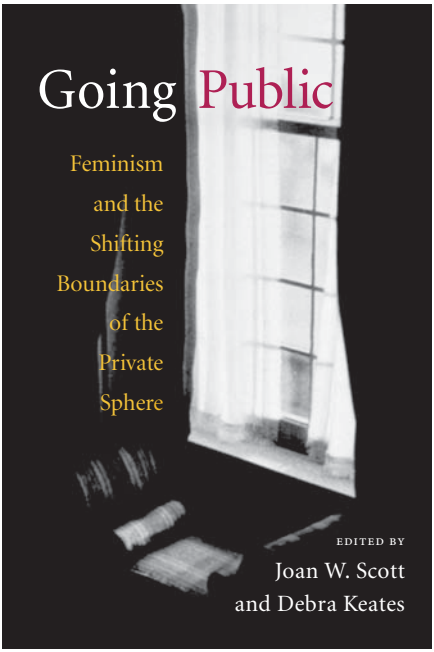
Joan Wallach Scott

The Hans Sigrist Prize enabled me to pursue research I've been doing on Gender and Feminism in several different ways. First, I organized an international conference at the Rockefeller Foundation Bellagio Conference Center on «Feminism and the Shifting Boundaries of Public and Private.» The participants in the conference wrote on the ways in the which ideas of private and public, and so ideas about appropriate roles and places for women and men, have changed since the nineteenth century. They asked what counts as «private» in different cultural contexts and what factors influence changes in that idea. They wrote from the perspectives of political theory, anthropology, philosophy, history and literature and their materials came from Thailand, China, Iran, India, Sudan, France, Germany and Eastern Europe. The papers from the conference are coming out in a volume of essays entitled Going Public: Feminism and the Shifting Boundaries of the Private Sphere. [I have attached a copy of the cover design for the book.]

Second, the prize enabled me to conduct my own research on the parity movement in France, the movement that won passage of a law in June, 2000, that requires equal numbers of women and men on ballots in all elections. This book continues my work on the history of feminism and on the paradoxes feminists face when they demand equal rights within a republican framework that requires sameness as a prerequisite for equality. A book I wrote on that subject: Parité: the French Movement for Sexual Equality in Politics will be published next year. I am now working on a series of essays on «The Crisis of French Universalism.» One of the essays deals with the controversy over the wearing of Islamic head scarves in French public schools.

The prize recognized the importance of research on women and gender not only

for me, but as an area of legitimate scholarly concern. It provided visibility and credibility for what is a relatively new academic field. For me, personally, the prize let me organize a conference I had long wanted to have and it gave me greater freedom to travel and conduct my research. I also used some of the money to support a research assistant and to help underwrite publication of several important books in my field.



Contact address:
Prof. Dr. Joan W. Scott, School of Social Science, Institute for Advanced Study, Einstein Drive, Princeton, NJ 085 40, USA, E-mail: jws@ias.edu

2000 Hans Sigrist Prize

Elsa Tamez

My intention upon receiving the Hans Sigrist Prize was to make a contribution to the biblical movement in Latin America. In this movement the Bible is read from a liberating perspective through the eyes of those who are excluded. Nevertheless, very little has been done on Biblical texts that are not liberating. I chose the First Letter to Timothy which openly excludes women from leadership in the church and reminds the slaves of their status as slaves. My objective was to understand the why of these affirmations by the author, especially against women, in order to dissent canonically. To dissent against these Biblical texts can be profoundly liberating.

To find keys for this reading it was necessary to go «behind the text», «through the text», that is to say to try and do an historical reconstruction of a possible situation of the primitive communities that would provoke the author's discourse. The study of the text became very complex because of the mixing of the conflicts related with social status, gender and divergent theological postures. All of this within a society hostile to Christians.

An interesting perspective that could explain a part of the letter was the power struggles between the wealthy women (benefactors) and the deacons, provoked by patronage relationships, very common in antiquity. Nevertheless, the problem of gender is very present because the attack against the wealthy women is not only because of being rich but also because of being women. The author does not hide his strong patriarchal position. The domestic codes (Haustafeln) highly held by governments and masculine thinkers of the Greco-Roman society, appear scattered in the text. They are to be applied rigorously not only in the private household but also within the church (ekklesia) (3:4-5; 3:14-15). In 1 Tim. 5:3-16 the author wants to regulate the economic question of the

church's solidarity with the poor widows, and also to regulate the list in which the widows, who possibly had a certain official leadership role in the church, are inscribed. He excludes the young widows from the list (poor and rich) because he sees them as a danger that undermines the patriarchal household. The «other teachings», against which the author pronounces, «prohibit matrimony» (4:3). This could have been attractive to those women who did not want to submit themselves to the patriarchal household. For the author this attitude of not wanting to submit to the patriarchal household could be dangerous for the church in a hostile society.

As can be seen, the complexity of the text is evident. It is not possible to analyze one point without making reference to others. The negative effects of the text for today's readers demand that this letter not be read in a fundamentalist manner.

Having received the Hans Sigrist Prize allowed me to dedicate full time to investigate a theme that otherwise would have been very difficult to do because of commitments with the institution where I work. With these funds, I decided to ask for a leave of absence without salary to work on the chosen Biblical text (1 Timothy), to visit libraries and book stores in other parts of the world (here in Costa Rica the libraries are extremely poor in the areas of Bible and theology) and to do popular and academic workshops as I advanced in my investigation. I value the significance of my work not only at the personal level but also at the level of its contribution to the Biblical movement. I have tackled an important theme which has scarcely been dealt with in Latin American Biblical research. Furthermore, there is almost nothing written in Spanish on 1 Timothy. In this way, I believe that the contribution has been in two directions: in the theme itself and in the Spanish language and readership.

A book has now been published that summarizes the investigation in Spanish that is easily accessible: Las luchas de poder en los origenes del cristianismo: un estudio de la Primera Carta a Timoteo, (San Jose: DEI, 2004). [tr. Power Struggles in the Beginnings of Christianity: a Study of the First Letter to Timothy] The enthusiastic reception of this work has lead me to begin to investigate what will be a second volume: La historia de los efectos de I Timoteo. [tr. The History of the Effects of 1 Timothy] I thank the Hans Sigrist Foundation and the Faculty of Theology of the University of Bern for this honor.

Contact address:
Prof. Dr. Elsa Tamez, Universidad Biblica Latinoamericana, Cedors Monte de Oca, APDO. 901–1000, San Jose, Costa Rica, E-mail: eltamez@amnet.co.cr

2001 Hans Sigrist Prize

Jan Johansson

The Hans Sigrist Prize awarded to me in 2001 made it possible to expand already ongoing research on mechanisms underlying formation of amyloid fibrils and to study protein misfolding diseases more generally. Amyloid fibrils are polymers, which are insoluble and harmful to cells, and can be formed when certain proteins lose their native, monomeric and soluble structures. Well-known examples of proteins that can form amyloid fibrils are the amyloid-peptide (A), which is associated with Alzheimer´s disease, and the prion protein that forms amyloid in spongiform encephalopathies like Creutzfeldt-Jakob disease in humans and BSE (mad cow disease) in cattle. Important questions that remain to be solved regarding fibril formation include the detailed structure of an amyloid fibril and what determinants give rise to fibril formation from certain proteins, while most proteins do not appear to form fibrils under physiological conditions.

The Hans Sigrist Prize made it possible for me to work at the Department of Structural Medicine, Cambridge University in 2002. During that visit I initiated structural studies of amyloid fibrils formed from a designed peptide containing a sequence motif present in A and other fibril-forming peptides. Fibrils formed from that peptide are very regular and crystalline, and thus amenable to diffraction studies. Electron and X-ray diffraction studies carried out in collaboration with Lousie Serpell and her colleagues have very recently resulted in the determination of the first atomic level structure of an amyloid fibril. The interactions between amino acid sidechains observed in this structure explain the outstanding stability of the amyloid fibril. In addition to working on amyloid fibrils in Cambridge, I also started work on another family of proteins associated with human disease, the serin protease inhibitors (serpins). Serpins can form polymers

in which the reactive loop of one molecule inserts into another molecule. These polymers are retained intracellularly and thereby cause cellular damage and deficiency of circulating serpins. Neuroserpin is specifically expressed in the central nervous system and familial forms of dementia have recently been described, in which mutant neuroserpin form polymers. We have studied in detail the stability and polymer formation of two neuroserpin mutants, from which we have proposed a model that explains loss of inhibitory activity as well as the increased tendency to form polymers.

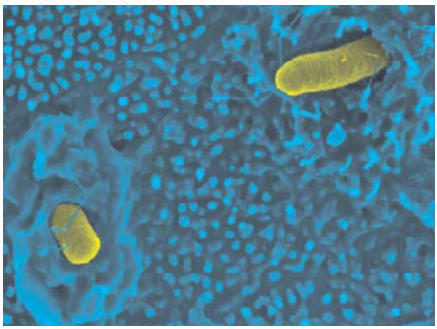
As described above the Hans Sigrist Prize allowed me to work at another University for a longer time and made it possible to develop novel lines of research. Without the freedom offered by the prize, this may not have happened. The results that emanated from these new projects are potentially important for finding ways to inhibit fibril formation, and thereby possible prevent or cure amyloid diseases. From my personal point of view, the Hans Sigrist Prize as such and the possibility to expand my research profile contributed very positively when applying for a new position as professor of medical biochemistry.

Contact address:
Prof. Dr. Jan Johansson, Swedish University of Agricultural Sciences, Dept. of Molecular Biosciences, BMC, Box 575, S-75123 Uppsala, E-mail: Jan.Johansson@vmk.slu.se

2002 Hans Sigrist Prize

Jorge E. Galán

Microbial pathogens have evolved unique ways to interact with their hosts. In many instances the terms of this interaction reflect the co-evolutionary balance that the host and pathogen must reach in order to secure their survival. It is therefore not surprising that bacterial pathogens have evolved a large array of virulence factors well suited to interfere with or stimulate a variety of host-cell responses in order to invade, survive and replicate within their hosts. The identification and characterization of these virulence factors is proving to be a fruitful area of research in more ways than expected. The understanding of how pathogens interact with their hosts is not only providing the basis for the development of novel therapeutic approaches but also a number of very sophisticated tools for probing basic aspects of cellular physiology and immunology. Our laboratory studies the pathogenesis of two intestinal pathogens, Salmonella enterica and Campylobacter jejuni. Combined, these two pathogens account for the vast majority of cases of infectious diarrhea worldwide leading to an estimated 2,000,000 deaths. We are interested in characterizing the bacterial determinants involved in the pathogenesis of these bacteria, as well as the host responses that they stimulate. We



Scanning electron micrograph showing the interaction of Salmonella typhimurium with cells of the intestinal epithelium

take a multidisciplinary approach in our studies involving bacterial genetics, biochemistry, cell biology, immunology as well as structural biology. As a result, we are beginning to define not only the molecular details of the host pathogen interactions but also the atomic interface between these pathogens and the host.

One of the bacterial determinants of virulence that we have been studying during the last few years is a remarkable organelle, the type III secretion system, which has specifically evolved to «inject» bacterial proteins into the host cell. These bacterial proteins have the capacity to modulate or interfere with a variety of normal cellular functions for the pathogen's benefit. Work in our laboratory supported by the funds provided by the Hans Sigrist Prize are characterizing the function of this remarkable bacterial device. In addition, we have been able to harness this bacterial device as means to deliver other proteins into host cells, whose production by Salmonella we have engineered by genetic engineering approaches. We have constructed strains of Salmonella unable to cause disease but able to produce proteins from other pathogenic microorganisms such as the Human Immune Deficiency virus (HIV) that are currently being tested for their potential use as an AIDS vaccine.

It has a great honor for me to receive the Hans Sigrist Prize. The availability of the significant funds associated with the Award have provided our laboratory with additional flexibility to pursue high-risk but potentially high-impact projects that would otherwise we would have been unable to carry out.

Selected Recent Publications:

Lara-Tejero, M. and J. E. Galán. 2000. A bacterial toxin that controls cell cycle progression as a deoxyribonuclease I-like protein. Science 290: 354-355.

Stebbins, C. E. and J. E. Galán. 2001. Structural mimicry in bacterial virulence. Nature. 412:701-5.

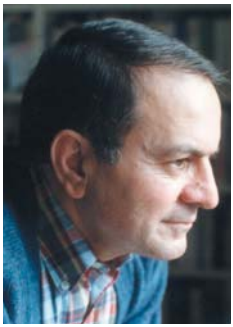
Stebbins, C. E. and J. E. Galán. 2001. Maintenance of an unfolded polypeptide by a cognate chaperone in type III secretion of a bacterial virulence factor. Nature. 414:77-81.

Kubori, T. and J. E. Galán. 2003. Temporal regulation of Salmonella virulence effector function by proteasome-dependent protein degradation. Cell 115:333-342.

Hernandez, L. D., K. Hueffer, M. R. Wenk, and J. E. Galán. 2004. Salmonella modulates vesicular traffic by altering phosphoinositide metabolism. Science 304:1805-7.

Contact address:
Prof. E. Jorge Galán, Yale University School of Medicine, Section of Microbial Pathogenesis, 295 Congress Avenue, New Haven, CT 06536-0812, USA,
E-mail: jorge.galan@yale.edu

2003 Hans Sigrist Prize



Emilio Gentile

One of the main subjects of my research, phenomenon related to the funds of the Hans Sigrist Prize, is civil religion and political religion, as manifestations of a new relationship between politics and the sacred. In the modern age, politics, after conquering its institutional autonomy towards traditional religion, has often acquired the aura of sacredness up to the point of asserting, in an exclusive and complete way, the prerogative to define the meaning and the fundamental goal of humane existence on earth. Here is the source of the sacralization of politics, as I defined it. Sacralization of politics occurs all the time a political entity, for instance, the nation, the State, the race, the class, the party, assume the characteristics of a sacred entity, that is, of a supreme power, indisputable and untouchable, which becomes the object of faith and devotion, up to the sacrifice of life. In my theory, I stress the distinction between «political religion» and «civil religion» as manifestation of the sacralization of politics.

Political religion is a form of the sacralization of politics of an exclusive and integralist character. It rejects coexistence with other political ideologies and movements, denies the autonomy of the individual with respect to the collective, prescribes the obligatory observance of its commandments and participation in its political cult, and sanctifies violence as a legitimate arm of struggle against enemies and as an instrument of regeneration. It adopts a hostile attitude toward traditional religions, seeks to eliminate them, or seek to establish with them a relationship of symbiotic coexistence, in the sense that the political religion aim at incorporating traditional religion within its own system of beliefs and myths, assigning it a subordinate and auxiliary role.

Civil religion is a form of sacralization of a collective political entity that is not iden-

tified with the ideology of a particular political movement, affirms the separation of Church and State, and, though postulating the existence of a deistically conceived supernatural being, coexists with traditional religious institutions without identifying itself with any one particular religious confession, presents itself as a civic creed above parties and confessions, recognizes broad autonomy for the individual with regard to the sanctified collectivity and generally appeals to spontaneous consensus for observing the commandments of public ethics and the collective liturgy.

The majority of civil and political religions are transient in nature, or at least have appeared so up to now. However, I believe that the springs from which beliefs and myths flow to confer a sacred nature on politics are unlikely to dry up, though it is impossible to foresee in what ways new civil and political religions could be formed or what the outcomes could be.

Awarding a scholar of political religions the Hans Sigrist Prize 2003 was in the twentieth century a considerable contribute to increasing the interest in this theme which continues being the topic of numerous publications and important international conferences throughout 2004. While taking part to these meetings, I have always met with a great interest in my analysis of civil religion and political religion in the history of the Twentieth century and of the modern world. This has given me the possibility to go deep into my study of sacralization of politics by comparing it to other interpretations and considering constructive criticism of scholars of other disciplines. Besides, in the course of 2004, thanks to the funds of the Hans Sigrist Prize, I have been able to go on with my research in this field, having the possibility to work in France, the United States and Israel. At present, my studies proceed in two main directions, that is, analysis of sacralization of politics during the Great War and American civil religion in the light of the terrorist attack of the 11th September 2001.

Contact address:
Prof. Emilio Gentile, Clivo di Cinna, 204, I-00136 Roma, E-mail: emigent@tin.it

1994 Hans Sigrist Stipend

Michael Gerfin

I had the great honour to receive the first Hans Sigrist Foundation habilitation scholarship. It provided me with the opportunity to continue my academic career for which I am very grateful. The scholarship bridges a gap in the academic career between the doctoral dissertation and the habilitation which is difficult to overcome for many people wishing to continue their academic career. By this the Hans Sigrist Foundation habilitation scholarship fulfils a very important function.

During the scholarship I developed a new methodology to analyse gender wage differentials across the whole wage distributions (jointly with Dorothe Bonjour). We introduced new statistical and new methodological tools in our work. The research was finally published as «The Unequal Distribution of Unequal Pay – An Empirical Analysis of the Gender Wage Gap in Switzerland», Empirical Economics, 26, 2001, 407-427.

Further publications during the scholarship include «Einkommensungleichheit zwischen Frauen und Männern in der Schweiz – eine ökonometrische Analyse der Schweizer Arbeitskräfteerhebung: Kommentar», Schweizerische Zeitschrift für Volkswirtschaft und Statistik 131, 1995, 701–710 (with Dorothe Bonjour); «Parametric and Semiparametric Estimation of the Binary Response Model of Female Labor Market Participation», Journal of Applied Econometrics, 11, 1996, 321–339; «Socioeconomic Inequalities in Morbidity, Some International Comparisons», Journal of Health Economics, 16, 1997, 93–112, (with E.v.Doorslaer, A. Wagstaff et al.); «Die Erwerbsbeteiligung von Frauen in der Schweiz: ein dynamisches Probit -Modell für die Jahre 1991 bis 1995», Schweizerische Zeitschrift für Volkswirtschaft und Statistik, 134, 1998, 93–114.

Contact address:
Prof. Dr. Michael Gerfin, Volkswirtschaftliches Institut, Gesellschaftsstrasse 49, 3012 Bern, E-mail: michael.gerfin@vwi.unibe.ch

1996 Hans Sigrist Stipend

Petra Hüppi

As a scholar of the University of Berne I have been intrigued by developing brain, which has constituted a major area of interest all through my Medical School training in my medical thesis and into my training as a pediatrician and neonatologist. With the emergence of a new imaging technique, Magnetic Resonance, introduced to Berne University Hospital in 1988 I have been able to start visualizing in vivo the events that characterize early human brain development. With the support of the Swiss Academy of Medical Science I was able to get first hand training in the research applications of Magnetic Resonance Imaging and Spectroscopy at Brigham and Women's Hospital in Boston from 1994 to 1997. Equipped with new advanced MRI techniques and ideas to study early human brain development it was the Hans Sigrist Scholarship that gave me the opportunity to return to the University of Berne in 1997 and to establish myself as a researcher in the field of Magnetic Resonance in which I have become a leading expert in the evaluation of the newborn brain. I have since directed several research projects funded by Swiss National Foundation aimed at the better understanding of early human brain development. In 1998 I was recruited to the University of Geneva where I obtained my Privatdocent in 1998 and was appointed full Professor of Pediatrics in 2003 leading the Child Development Unit and a active research group developing and applying adapted quantitative, volumetric MRI techniques and new diffusion imaging techniques in newborn infants to delineate anatomical and temporal characteristics of brain development in a time period of extreme relevance to brain injury in the premature and term infant.

Prof. Petra Hüppi is currently the director of the Child Development Unit at the University of Geneva and continues her research activities there as well as in collaboration with the Dept. of Neurology at Harvard Medical School in Boston where she is a visiting scientist.

Contact address:
Prof. Dr. Petra Hüppi, Hôpital des enfants, Unité de Développement, 6, rue Willy-Donzé, 1211 Genève 14, E-mail: petra.huppi@hcuge.ch

1997 Hans-Sigrist-Stipendiat

Andreas Lienhard

Mit einem Hans-Sigrist-Förderungsstipendium für die Jahre 1998–2000 konnte das Habilitationsprojekt zur Thematik «Staats- und verwaltungsrechtliche Grundlagen für das New Public Management in der Schweiz» verwirklicht werden. Die Hans-Sigrist-Stiftung erkannte mit dieser Unterstützung frühzeitig, dass die in den 1990er Jahren in Europa einsetzenden Reformen im Sinne der wirkungs- und effizienzorientierten Verwaltungsführung auch in der Schweiz von erheblichem Nutzen sein können. Diese Forschungsförderung sollte nachhaltige Wirkung entfalten.

Schon bald nach der Habilitation ermöglichte die Universität Bern die Gründung des interdisziplinären Kompetenzzentrums für Public Management (KPM). Das an der Rechtswissenschaftlichen Fakultät sowie der Wirtschafts- und sozialwissenschaftlichen Fakultät angesiedelte Institut forscht seither intensiv im Bereich Public Governance und bietet einen Executive Master of Public Administration (MPA) an. Zudem erbringt es vielfältige Dienstleistungen im Rahmen der laufenden Reformprozesse im öffentlichen Sektor. Die Leitung dieses Instituts ist interdisziplinär ausgerichtet und aus wissenschaftlichem Nachwuchs zusammengesetzt (Ass. Prof. Dr. iur. Andreas Lienhard, Ass. Prof. Dr. phil. Andreas Ladner, Dr. rer. oec. Adrian Ritz und Dr. rer. oec. Reto Steiner).

Am Dies academicus der Universität Bern vom 4. Dezember 2004 wird der Hans-Sigrist-Preis an Prof. Dr. Christopher Pollitt, Centre for Public Management, Erasmus University, Rotterdam, verliehen. Dass damit anlässlich des 10-Jahr-Jubiläums der Hans-Sigrist-Stiftung eine international renommierte Forschungspersönlichkeit im Forschungsbereich «Public Governance» geehrt wird, freut ganz besonders. Zuversichtlich darf darauf gehofft werden, dass die Hans-Sigrist-Stiftung weiterhin bedeutende Forschungsbereiche frühzeitig erkennt und engagierte Wissenschaftler und Wissenschaftlerinnen fördert.

Kontaktadresse:
Prof. Dr. Andreas Lienhard, Kompetenzzentrum Public Management, Falkenplatz 9, 3012 Bern, E-mail: andreas.lienhard@kpm.unibe.ch

1998 Hans Sigrist Stipend

Eliane Marti

The Hans Sigrist Foundation played a pivotal role in both my university and research careers, in that it allowed me to continue researching the immunopathogenesis and genetics of allergic diseases of the horse at a time when I might otherwise have had to leave science. Although the research projects I was undertaking were funded by the Swiss National Science Foundation and the Federal Office for Education and Science, my own position was not financially supported from 1999 onwards. This was due to the closing of the Division of Immunogenetics at the Institute of Animal Breeding, after the retirement of my mentor, Prof. Dr. S. Lazary. It was therefore very important to me when I was awarded a Hans Sigrist scholarship at the end of 1998, which allowed me to complete my habilitation, «Beteiligung von Immunglobulin E an der Pathogenese allergischer Krankheiten beim Pferd», and to receive the venia docendi in Veterinary Immunology in 2002. In our research projects, we investigated the involvement of immunoglobulin E (IgE) antibodies and IgE-mediated allergic reactions in two diseases of the horse, insect bite hypersensitivity (an allergic skin reaction to bites of midges and black flies), and recurrent airway obstruction (a hypersensitivity reaction to stable dust with some similarities to human asthma). We demonstrated that various factors influence a horse's ability to produce high or low levels of IgE antibodies against certain mould antigens, and that one of these genetic factors is the equine major histocompatibility complex. I am very grateful that the Hans Sigrist Foundation supported me until the end of 2001 and wish to thank them for their backing. It allowed me to stay at the University of Berne and be appointed to a newly created position in Clinical Veterinary Immunology. Currently, my main research focus is still on the pathogenesis of allergic diseases in the horse, but I am also collaborating on research projects into allergic diseases in dogs. I am thus very grateful to the Hans Sigrist Foundation to have enabled me to carry on with work that fascinated me.

Contact address:
PD Dr. Eliane Marti, Klinik für Nutztiere und Pferde, Länggassstrasse 124, 3012 Bern, E-mail: eliane.marti@itz.unibe.ch

1999 Hans Sigrist Stipend

Werner Eugster

In 1999 my project entitled «Influence of Land-Use Changes on the Climate of a Swiss Region» received the support from the Hans Sigrist Foundation. For me this was an exciting opportunity to get a research project started, that was addressing a relevant question in climatology and global change research, that has not been addressed in detail by the main-stream research community in our research field.

My project addressed the influence of local changes in the landscape of the three-lakes region in Switzerland, the so-called «Juragewässerkorrektionen», on local and regional climates. Thanks to the support received by the Hans Sigrist Foundation, my project was later also endorsed by the international LUCC (Land Use and Land Cover Change) project, which in turn allowed me to succeed in getting a Ph.D. student, Nicolas Schneider, funded by the Swiss National Science Foundation to carry out the detailed computer modeling work on the Parallel Computing Linux Cluster of the University of Bern.

My project has received a surprisingly wide attention in the Swiss media due to its national context, and Nicolas Schneider's enthusiastic engagement in computer modeling and help in making the results understandable to the general public. Since the lay person's daily live is related to the lowest 2 meters of the atmosphere in a surrounding of, say, typically less than 50 km around his living place, my project also provided a link between science and the general public that is otherwise much more difficult to establish.

The support from the Hans Sigrist Foundation has given me excellent opportunities to establish myself as a scientist, and still take my responsibility for my family with two boys, who were 3 and 4 years old when I received my scholarship. The generous offer that allowed me to work 80% and then extend the duration of my scholarship by the remaining 20% was a real privilege that I found essential for my career.

Contact address:
Dr. Werner Eugster, Institute of Plant Sciences, ETH Zentrum LFW C55.2, 8092 Zürich,
E-mail: werner.eugster@ipw.agrl.ethz.ch

2000 Hans Sigrist Stipend

Lorenz E. Baumer

The small rural sanctuaries of Greece have not yet encountered much scholarly interest. In an attempt to fill this gap at least partially, the project encompassed a survey of the archaeological evidence from four different regions, based on excavation reports and topographical studies. The results of the study allow not only a more precise understanding of the nature of the individual sanctuaries, but also throw a light on their importance for a part of the ancient society – one which hardly appears in other sources. The rural sanctuaries of Greece could be shown as an important factor as well as for the religious and the social history of ancient Greece.

While the fieldwork had been supported by the Swiss National Science Foundation and the Alexander von Humboldt-Stiftung (Germany), the scholarship of the Hans Sigrist Foundation allowed to analyze the results profoundly and to bring them to paper. Thanks to that, it was possible not only to complete the study within the scheduled time and to accomplish the habilitation, but also to prepare its final publication within a rather short period. For this reason, the importance of the Hans Sigrist scholarship can hardly be overestimated, the more as Classical Archaeology is looked today sometimes as a rather negligible field, and financial support for research is the more the less available. Beside of supporting my personal career – which hopefully soon can be continued – the Hans Sigrist Foundation contributed this way to the humanistic tradition of the University of Bern.

The results of the study are published in: Lorenz E. Baumer, Kult im Kleinen. Ländliche Heiligtümer spätarchaischer bis hellenistischer Zeit. Attika - Arkadien - Argolis - Kynouria. Internationale Archäologie 81. Verlag Marie-Leidorf, Rahden/ Westfalen 2004. ISBN: 3-89646-353-5. http://www.vml.de

Contact address:
PD Dr. Lorenz E. Baumer, Institut für Archäologie des Mittelmeerraumes, Länggassstrasse 10, 3012 Bern, E-mail: LEBaumer@compuserve.com

2001 Hans Sigrist Stipend

Ohad S. Parnes

The issue of autoimmune disease is one of the more perplexing problems in modern biomedicine. The common view considers autoimmunity as a pathological condition involving the immune system confusing its host's own tissues with pathogenic invaders: the immune system practically destroys one or more types of tissues of its own body, bringing about what is usually considered as autoimmune disease (e.g. multiple sclerosis, or type 1 diabetes). My research project, for which I was granted a Sigrist Fellowship, is dedicated to a historical and conceptual analysis of autoimmune disease. In particular, I wish to challenge the common view and consider autoimmunity in its wider physiological context.

When I commenced my fellowship I had just completed the research phase for the project. I was thus grateful for the opportunity to spend a longer period at a calm place like Bern in order to write down my work. Indeed, the time in Bern has enabled me to work out most of my book, parts of which were published in a series of papers. I intend to submit the work to the Philosophisch-naturwissenschaftliche Fakultät in Bern within the next months.

Another aspect of the Hans Sigrist fellowship was the teaching that was associated with it. Among others, I gave two introductory courses at the Philosophisch-historische Fakultät: on the history of modern genetics and on the historical and conceptual foundations of evolutionary theory. However, my courses attracted also many students from the natural sciences. This posed a special challenge to construct a course that would appeal both to students with very little prior knowledge in biology and to students of the sciences. This was a most interesting experience, which will definitely help me in my future career.

2002 Hans Sigrist Stipend

Erik Vassella

African trypanosomes, which cause human sleeping sickness, are responsible for severe medical and economical problems in large areas of sub-Saharan Africa. There are currently 500'000 cases of human sleeping sickness per year as estimated by the WHO. The disease is fatal if untreated, there is no vaccine and the few drugs that are available are either extremely toxic or only effective for a restricted form of the disease. Hence, this disease, which is neglected by pharmaceutical industry, is one of the major health concerns in many developing countries. The parasite depends on the tsetse fly for its dissemination. During cyclical transmission, it undergoes differentiation into distinct life-cycle stages, which are adapted to their respective environment. Bloodstream forms proliferate in the blood of the mammalian host. This environment provides optimal growth conditions for bloodstream forms since it is warm and rich in nutrients. However, trypanosomes have to fight against elimination by the host immune system. In contrast, the gut of the tsetse fly is rather cold and poor in nutrients. In addition, parasites of this compartment have to cope with digestive enzymes.

How can trypanosomes sense their environment and how can they adapt to these dramatic changes during cyclical transmission? The aim of my project supported by the Hans Sigrist Foundation was to identify extracellular signals controlling differentiation of trypanosomes. In addition, I was interested in elucidating the molecular mechanisms mediating the differentiation program and resulting in changes in gene expression. Compounds that interfere with a specific differentiation process may be lethal for the parasite and thus may be used as a drug against human sleeping sickness. This work led to several publications and will be an integral part of my habilitation.

Contact address:
Dr. Erik Vasella, Institut für Pathologie, Murtenstrasse 31, 3010 Bern,
E-mail: erik.vasella@pathology.unibe.ch

2003 Hans Sigrist Stipend

Claudia Spadavecchia

I came from Italy to Switzerland in 1997 to work at my master degree thesis at the Faculty of Veterinary Medicine of the University of Bern. In 1998 I was employed as veterinary assistant at the equine clinic of the University of Bern. I started my specialization in anaesthesiology that I concluded in 2002 with the Diploma of the European College of Veterinary Anaesthesia. In the meantime I had started a PhD program at the University of Aalborg, Denmark, focused on physiological aspects of equine pain. All experiments have been carried out in Switzerland, under the supervision of Prof. Schatzmann, leader of the Anaesthesiology Section here in Bern. The tutoring for the theoretical aspect of the research came from Denmark, where Prof. Arendt-Nielsen of the Sensory-Motor Interaction Center of the Biomedical Engineering Faculty accepted to collaborate for this equine project. Many projects have been planned but without the Habilitation Stipendium that I received last year they would have remained a dream. Thanks to Hans Sigrist Stipend I had not only the opportunity to go on with my PhD project, that will be finished by the end of 2004, but also to plan new studies about pharmacological modulation of pain in horses and about perioperative pain in different domestic species, including animals commonly used in experiments that strongly deserve proper and targeted pain therapy. Doctoral students have been involved in the various projects and this will allow both on a short and on a mid term to expand the research field and to get precise answers on specie-specific pain perception and modulation. Having received the Stipend, I can fully concentrate on the research, without any clinical, night or didactic duties. This is a huge advantage, allowing me to stay continuously concentrated on the subject without distractions, with optimal time investment. I know that to conclude the habilitation in two years from now is a very ambitious program, but I am convinced that it is feasible only because I can count on a full-time dedicated mental energy.

Contact address:
Dr. Claudia Spadavecchia, Department of Clinical Veterinary Sciences, Anesthesiology Section, Länggassstrasse 124, 3012 Bern, E-mail: claudia.spadavecchia@knp.unibe.ch