

bois-marie

INSTITUT DES HAUTES ÉTUDES SCIENTIFIQUES

director's editorial

In fifty years, IHÉS, a private organisation dedicated to fundamental research, has managed to reinforce its position and to become an international point of reference. Over the past few years, it has found ways of better securing its future, with a pro-active approach, evidenced by the international fundraising campaigns it has engaged in since 2000.

In 2009, against the difficult context of an economic crisis that shook the world, IHÉS gave further thought to its future development. Which is why, for the first time in its history, and

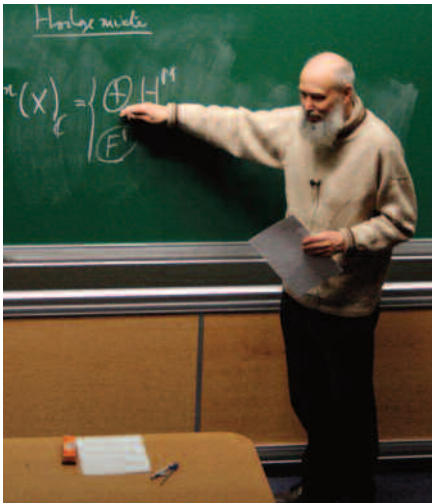
at the request of the Board of Directors, the Institute organised a strategy day, in which IHÉS scientific and administrative staff took part, together with Board members and a large number of representatives from other research institutions. The intensive and very frank debates which took place during the day proved to be very rewarding. They confirmed the validity and effectiveness of the model devised by Léon Motchane with the help of Robert Oppenheimer, when IHÉS was created. Certain specific points did, however, emerge as areas for improvement, including how the Institute is perceived by the local scientific community.

The prizes awarded in 2009 are renewed proofs of the quality of the research undertaken at IHÉS, and the appropriateness of a model based on exceptional people, interacting with the global scientific community. This makes the Institute determined to carry on the mission it has pursued since its creation, that is, the development of science at the highest level, with no barriers between the theoretical disciplines studied here.

Jean-Pierre Bourguignon

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Pierre Deligne

mathematical posterity of Grothendieck

From 12 to 16 January 2009, Spencer Bloch, Pierre Cartier and Claire Voisin organised *Aspects of Algebraic Geometry; the Mathematical Posterity of Grothendieck*. The event focused on a historical survey of the influence on mathematics, as well as a description of current trends directly inspired by the work of this visionary man.

For algebraic geometers of my generation (I first saw IHÉS in 1968) the influence of Alexandre Grothendieck has been overwhelming. Both the brilliance of his program and the sadness of his premature departure have resonated at IHÉS throughout the past 50 years.

A number of people helped Pierre Cartier and Claire Voisin organize a conference in January 2009 at IHÉS intended to showcase some of Grothendieck's ideas and how they have evolved throughout the years, as well as to say something about the man himself and his life. It was an opportunity for a unique institution to pay homage to a unique person whose contribution is still being felt.

Spencer Bloch

Professor, University of Chicago

interdisciplinary international workshop

An international workshop on *Pattern Formation in Morphogenesis* took place at IHÉS from 11 to 14 January 2010. The workshop was the latest in a series of highly successful events, initiated some 12 years ago by Mikhail Gromov, bringing together scientists operating at the interface between mathematics and biology at the Institute.

Vincenzo Capasso, Mikhail Gromov, Annick Harel-Bellan and Nadya Morozova organised the workshop. 19 formal presentations were made, essentially by biologists. In addition, 15 mathematicians were invited to the workshop with the remit of prompting discussions and stimulating and engaging in group work. They had received abstracts of the formal presentations beforehand.

Around 80 participants attended the workshop. The US, France, the Netherlands, Japan, the UK, Germany, Russia, Italy, Canada, Israel were the countries represented. There was widespread agreement that this had been a very useful and productive event, with many new collaborations initiated during the workshop, and the fact that many speakers and participants engaged in developmental biology research, which studies the processes governing the growth of organisms, were present. Biologists from different disciplines in this research area



Poster presentation

were able to discuss and elucidate several general questions of pattern formation formulated by mathematicians during the workshop.

The conference was supported by the Richard Lounsbery Foundation and received complementary support from the French-Japanese Sasakawa Foundation, the Beverly and Raymond Distinguished Lectureship Program (Sackler lecture given by Annick Harel-Bellan), and the Simons biology fund at IHÉS.

string theory

A day of seminars, organised by Pierre Vanhove, a visiting CEA researcher at the Institute, took place on 4 March 2009. The event was an opportunity for IHÉS researchers to present their latest results on String Theory. Many scientists from the Paris region attended it.

CEA-IHÉS meeting

This event held on 18 March 2010 brought CEA (IPhT) and IHÉS researchers together around common themes such as Quantum Field Theory, fundamental mathematical structures and biology.

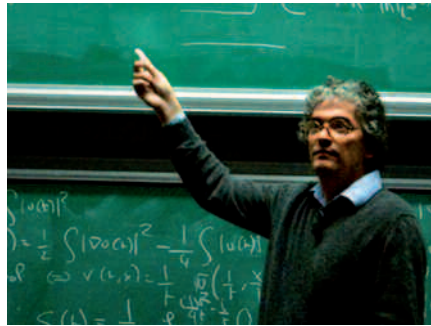
workshop

Dirk Kreimer organised a *Quantum fields, periods and polylogarithms* workshop from 2 to 5 June 2009, which aimed to bring together people from different communities with an interest in Quantum Field Theory, in an attempt to bridge the language gap. This workshop was the continuation of a first event which took place at the Institute in June 2006.

and institutional events

UCP-IHÉS chair

The UCP-IHÉS (Université de Cergy-Pontoise – Institut des Hautes Études Scientifiques) Analysis Chair was created in June 2009 for five years. It is held by Frank Merle, mathematics professor at the Université de Cergy-Pontoise, one of the world's leading specialists in non-linear partial differential equations.



Frank Merle

This joint Chair represents an important new form of partnership between two research institutes in the Paris region.

partnership with Université Paris-sud 11 and Conseil général de l'Essonne



Philippe Lagayette, David Ros

The signing ceremony of a partnership agreement between the Conseil général de l'Essonne (local government body) and IHÉS to fund a building project at the Ormaille housing estate, took place on 20 November 2009. In addition, a separate agreement on accommodation for researchers was signed between Université Paris-sud 11 and IHÉS.

The “Ormaille residence” is located in Bures-sur-Yvette, near IHÉS and Université Paris-sud 11. The Conseil général de l'Essonne has funded the creation of 11 apartments in the attics of existing houses in the residence, six of which are to be allocated to scientists from the nearby mathematics department of the Université Paris-sud 11, and the remainder to IHÉS visitors.

During the official signing ceremony, the Conseil général de l'Essonne was represented by David Ros, Vice-President in charge of Higher Education and Research, and IHÉS by Philippe Lagayette, Chairman of the Board of Directors.

The Institute is very happy to partner up with a prestigious neighbouring institution dedicated to mathematics in this collaborative housing project for senior visitors, who come to work with scientists from both institutions.

MATHS A VENIR 2009

This large-scale event with over 700 participants was a successful one, and highlighted the need for mathematical research to evolve. Discussions initiated among researchers and business and political leaders should continue in 2010.



The Unravelers exhibition in Mahidol University, Bangkok

2010 Wolf prize

Dennis Sullivan and Shing-Tung Yau have been awarded the 2010 Wolf Prize in Mathematics. Dennis Sullivan, Einstein Chair holder at City University of New York, and professor at State University of New York at Stony Brook, was a permanent professor at IHÉS for over 20 years. A specialist in topology and dynamical systems, he is also remembered at the Institute for his rare talent in stimulating discussions and exchanges among scientists and inspiring them to reach new heights in their thinking.

Publications Mathématiques de l'IHÉS

The Managing Editors of the Publications Mathématiques de l'IHÉS have been: Jean Dieudonné, Jacques Tits and latterly Étienne Ghys, whom IHÉS thanks for his ten years' service to the journal.

The Institute is now very pleased that Claire Voisin (CNRS, Institut de mathématiques de Jussieu, France) and Sergiu Klainerman (Princeton University) have agreed to form the new team of Managing Editors.

Strategy day

On 4 November 2009, IHÉS organised its first ever strategy day with 38 people, 20 of whom came from external institutions.

The aim for the day was to identify and address areas for improvement, based on an appraisal of the first fifty years of the Institute's existence. The validity of the Institute's organisational model and questions of size and influence were among the topics discussed.

The Unravelers in Bangkok

The travelling exhibition of some of the photos in “The Unravelers” book stopped by for a few days in October 2009 at the Mahidol University in Bangkok, during the Franco-Thai Seminar in Pure and Applied Mathematics conference.

2009 Abel Prize

IHÉS scientific and administrative staff alike rejoiced, together with many other people, at the news that Mikhail Gromov had been awarded the prestigious 2009 Abel Prize “for his revolutionary contributions to geometry”. Press coverage of the event was extensive, and King Harald of Norway awarded the prize. The Institute organised its own celebration to mark this amply deserved award. His Excellency Mr Tarald Brautaset, the Norwegian Ambassador to France, honoured with his presence the event held on 22 September 2009 in Bures-sur-Yvette, with many distinguished guests. Mr Ronan Stephan, Director General for Research and Innovation, representing the French Minister for Higher Education and Research, also made a presentation. Pierre Pansu, professor at Université Paris-sud 11 and a former student of Mikhail Gromov, gave a lecture on the many breakthroughs in geometry achieved by Gromov.



Mikhail Gromov

His presentation was both accessible for non-mathematicians and moving, reflecting his deep attachment to his mentor.

How does he do it?

Gromov has a deep and detailed understanding of many areas, which are seemingly far from geometry. Group theory and other fields such as partial differential equations have been strongly influenced by Gromov's introduction of a geometric perspective.

Early influences:

Gromov cites the “obviously nonsensical” work of Nash on the isometric embedding problem and of Smale on turning the 2-sphere inside out, as strong early influences. These led to his far reaching work on the “h-principle” and “convex integration”. Another strong influence was the work of Kazhdan-Margulis, which associated nontrivial nilpotent subgroups to the “thin” parts of locally homogeneous spaces.

This led to his work on “almost flat manifolds” and subsequently, to many other works in geometry and discrete groups.

The h-principle:

The h-principle asserts very roughly, that for “most” underdetermined partial differential equations arising, the “obvious” obstructions to the existence of a solution are the only ones and solutions are rather dense in appropriate function spaces. Intuition derived from the classical equations of mathematical physics makes the above statement seem totally counterintuitive. Gromov invented a general tool, called “convex integration”, which can be used to verify the h-principle in many specific cases.

These ideas have slowly been assimilated, though the full effects are likely yet to be felt.

Meeting Gromov in 1974:

The experience of meeting in person the man who in the West was known primarily for a seemingly strange result on positive and negative curvature, remains vivid in my mind after 35 years. Initial curiosity rapidly gave way to shock. After some weeks of listening to Misha, I remarked to Dennis Sullivan: “I have the impression that more than half of what is known in Riemannian geometry is known only to Gromov.” A bit later Detlef Gromoll said to me: “Misha is one of the great minds of the century, I don't know how he does it, he understands everything in the simplest possible way”.

Jeff Cheeger

Professor at C.I.M.S., New York, USA
Excerpt from his speech in Oslo, 20 May 2009

2009 Marcel Grossmann award

The Institut des Hautes Études Scientifiques (IHÉS) received the Marcel Grossmann Award “for its outstanding contributions to mathematics and theoretical physics, and notably for having renewed basic geometrical concepts, and having developed new mathematical and physical aspects of spacetime.”



Jean-Pierre Bourguignon

The award was presented to IHÉS Director Jean-Pierre Bourguignon during the 12th Marcel Grossmann meeting, which took place from 12 to 18 July 2009 in Paris, France.

The Marcel Grossmann Awards are made during the Marcel Grossmann meetings every three years, organised by ICRANet in collaboration with UNESCO and the International Center for Theoretical Physics (ICTP).

The meetings, founded in 1975 by Remo Ruffini and Nobel laureate Abdus Salam, the founder of ICTP, are organized in order to provide opportunities for discussing recent advances in gravitation, general relativity and relativistic field theories. The awards recognise both institutional and individual achievements in these fields.



Edward Witten

Professor at IAS, Princeton, he is the first physicist to have received the Fields medal (1990). He works on Superstring Theory, which incorporates extremely complicated mathematical problems.

1. What is String Theory?

EW: Modern physics is based on two big theories. Einstein's theory of gravity – known as General Relativity – describes stars, galaxies, and the Universe as a whole. Quantum Mechanics describes atoms and subatomic particles. It is not satisfactory to have one theory for small objects and one for large objects since they deal both with the same Universe and the large objects are made ultimately out of small ones. So physicists would like to combine General Relativity and Quantum Mechanics in a single more comprehensive theory.

NN: The predictions of General Relativity were tested with high precision and used in very sophisticated gadgets, such as GPS navigation systems. Although some of the predictions of Quantum Field Theory were tested with an unprecedented accuracy (the measured magnetic moment of the electron agrees with the theoretical value up to one part in a trillion), the theory of the microworld is not compatible with that of the macroworld. The problem lies with the energy dependence of the strength of the gravitational interaction. If one extrapolates the laws of Newton and Einstein to the energies of the order of Planck's mass (10^{19} of the proton's mass) then one finds that the rules of Quantum Field Theory start producing infinite answers one cannot make sense of, unlike the case of the standard infinities of QFT.

EW: String Theory is the way that physicists have found to overcome the difficulty. In String Theory, an elementary particle is reinterpreted as a little loop of vibrating string. This simple idea has surprisingly far-reaching consequences. It enables us to avoid the usual problems in combining

gravity with quantum theory, opens new perspectives for unifying all the forces of nature in one theory, and makes us rethink the nature of space and time.

NN: The effective size of these tiny loops is of Planck's order (10^{-33} cm). Unlike quantum field theories, of which there is an infinite variety of theoretically consistent schemes, the fundamental String Theory seems to be unique. It is, however, plagued by a similar problem, namely the vacuum selection principle. Why is the fine structure constant (the dimensionless parameter measuring the strength of electromagnetism at the electron mass scale) of the order $1/137$? Why is it that we observe only three generations of light elementary particles including nearly massless neutrinos?

These parameters and their numerous analogues all enter in the choice of the ground state of the fundamental theory, for which presently there is no better principle than Nature is such that observers such as us (carbon-based organic chemistry filled humans) are there to observe it. In other words, were the Nature parameters altered, some key ingredients of our existence would be missing: galaxies, stars, planets, oxygen, carbon, and so on. This is not a viable principle, and one is looking for deeper reasons and pointers. Some of them may be hiding in the skies.

2. What is the future of String Theory? Are there currently any competing theories?

NN: The future of String Theory is promising, although the lack of clear cut experimental confirmation makes many people suspicious and nervous. There are many concurrent "theories", but most of them are either a simplified version of String Theory inspired constructions, or simply inconsistent. There is no viable theory on the market which would avoid the vacuum selection problem.

EW: One of the reasons making me believe that String Theory is probably on the right track is that significant competing ideas (black hole entropy, noncommutative geometry, twistor theory, etc.) have tended to be absorbed as part of String Theory.



Nikita Nekrasov

Theoretical physicist, IHÉS permanent professor since 2000, he works at the interface between String Theory and gauge theory and on modern mathematical physics.

3. What is the place of String Theory in Astrophysics?

EW: Contemporary astronomers have made many discoveries that are important for particle physics and our understanding of the laws of Nature. The most startling was the discovery, about ten years ago, that the expansion of the Universe is accelerating. This observation seriously challenges many of our ideas about physics (whether in the framework of String Theory or not). Other very important discoveries have included neutrino masses and oscillations, first found in studying solar neutrinos and very important for theories attempting to unify the forces of Nature, and hints at galaxy formation that have been found by studying the radiation left over from the Big Bang. So there is much to celebrate in the Year of Astronomy. (2009 was the World Year of Astronomy.)

NN: String Theory has many potential relations with Astrophysics and Cosmology. For one thing, some of the fundamental strings left out in the Big Bang could stretch across the sky and be visible in the form of the so-called cosmic strings. Astronomers look for signatures of cosmic strings in the form of duplicated galaxy images (as follows from some of the Einstein's predictions concerning the light bending in the gravitational field), or characteristic spikes in the gravitational radiation emanating from the cusps on the strings (as proposed by Thibault Damour and his collaborators). Even without cosmic strings, String Theory inspired corrections to the Einstein theory of gravitation that might lead to observable deviations in the motion of celestial bodies.

50th anniversary campaign

campaign target raised

The Board of Directors launched in 2006 an ambitious fundraising campaign, marking the IHÉS 50th anniversary, which was celebrated in 2008, to consolidate the Institute's endowment funds and enable future developments. The campaign was planned to take place over the 2006-2010 period, and to raise 20 million euros, following the 10 million euros raised between 2001 and 2004, during the first fundraising campaign at IHÉS. The campaign target was already met at the end of 2009, thanks especially to major donors loyal to IHÉS and those who have joined them.

Noting this success, the Board decided to extend the initial campaign until the end of 2011 and to raise the objective by several million euros. This is a bold move in the current economic climate. But IHÉS is an unusual institution, with an international reputation. The many scientific awards received by its permanent professors and visitors confirm the Institute's exceptional nature. A strategic planning exercise, in which many external scientists took part, enabled some fine-tuning of the Institute's future development plans. The groundwork for a successful campaign has thus been done, with clearly defined projects, motivated teams, many friends and supporters in the world, and, most of all, an exceptional institution.

André Lévy-Lang

Co-Chairman of the 50th anniversary Campaign



André Lévy-Lang

gift from the European foundation for tomorrow's energies infrastructure support



The European foundation for tomorrow's energies, created by EDF under the aegis of the Institut de France, announced early in 2009 a significant contribution to the IHÉS 50th anniversary campaign, with a one million euro donation. The Foundation thus became a member of the Léon Motchane Circle, which

was set up as part of the Institute's donor recognition programme. EDF has been an IHÉS partner since the latter was founded, with annual grants awarded. This new gift, for which the Institute would like to thank the Foundation and EDF most warmly, sends a very strong message of this longstanding partner's commitment to the development of scientific activities at IHÉS.

The French Ministry for Higher Education and Research contributed to the maintenance of IHÉS infrastructure in 2009, as part of the government's stimulus package. Funds from the Ministry made it possible to quickly undertake urgent road works in the Ormaille residence and on the Bois-Marie site.

The Institute extends warm thanks to the Minister for Higher Education and Research for this contribution. Mr Ronan Stephan, Director general for Research and Innovation, announced this measure during the ceremony organised at IHÉS in September 2009 to celebrate Mikhail Gromov's Abel Prize.

IHÉS owns a 12-hectare property which requires constant upkeep and makes heavy demands on resources. Private and public contributions that help the Institute maintain its infrastructure are therefore very important.

gift from GDF-Suez

Also a partner of many years, with annual grants from Suez and its predecessor companies, the GDF-Suez group is supporting the Institute with a financial contribution of 400 K€ over a period of four years. 70% of funds will be allocated to the GDF-Suez Fund, an endowment fund, while the remaining 30% (30 K€

each year) will be allocated to the Institute's operational budget.

IHÉS would like to thank Mr Gérard Mestrallet and Mr Yves de Gaulle most sincerely for GDF-Suez's support of the Institute's work.

GDF SUEZ

Chern Fund

IHÉS is continuing its fundraising efforts in China to increase the number of Chinese visitors invited to the Institute. With this objective in mind, the Institute is organising a conference for the general public on 12 October in the France Pavilion at Expo 2010 Shanghai China. This event, the second part of the "meeting the Unravelers" conference organised in 2008 at the musée du quai Branly, will be the opportunity for the Institute to reinforce its presence in China and to meet both Chinese research institutions and businesses.



support from Total S.A.

Total S.A. has made a gift of 200 000 euros with instalments over the 2008-2012 period. The gift will be allocated in equal parts to the Chern Fund and to the Japan Fund.

Brin Family Foundation

The US-based Brin Family Foundation made a generous \$200 000 contribution to Friends of IHÉS in June 2009, to fund the Institute's scientific activities. IHÉS thanks the Brin family for their support.

Japan Fund

After the official celebration in Tokyo in April 2009 of the end of fundraising efforts in Japan, IHÉS is delighted with the results. 1.8 M€ of the 2 M€ initially planned has been raised. Investment income from the Japan Fund has already supported several researchers. The key objective of reinforcing links with the Japanese scientific community has thus been met.

AXA-IHÉS chair for mathematics

The AXA-IHÉS Chair for mathematics was created in 2008 by the AXA Research Fund.

Maxim Kontsevich, IHÉS mathematics permanent professor, is the first holder of this Chair, the official launch of which was celebrated at the Bibliothèque Nationale de France in Paris on 25 November 2009. Philippe Lagayette, Chairman of the Board of Directors of IHÉS, Anne-Juliette Hermant, Head of the AXA Research Fund and François Buchini, CEO of AXA Cessions and IHÉS Board member, were the first to congratulate Maxim in their opening addresses. Jean Pierre Bourguignon, IHÉS Director also made a presentation, before handing the floor to Jørgen Ellegaard Andersen, Professor of mathematics at Århus University,



Philippe Lagayette, Maxim Kontsevich, Jørgen Andersen, François Buchini

who delivered a fascinating talk on Maxim Kontsevich's scientific career and the impact of his work. The presentations ended with Maxim's much appreciated closing speech and the evening concluded with a cocktail.

Pierre Bonelli chair

The Pierre Bonelli Chair was created in 2005 in honour of Pierre Bonelli, who was an admirer and devoted supporter of the Institute (he was Vice-Chairman of the IHÉS Board of Directors for the last 10 years of his life).



Pierre Bonelli

The Pierre Bonelli Chair has already enabled four researchers to visit the Institute and fundraising efforts continue to meet the target set.

Jean-Pierre Bourguignon gave a conference to students in engineering school preparatory classes at the Lycée de l'Empéri in Salon-de-Provence on 17 November 2009, during Science Week. The lycée (high school) holds a special place in the town of Salon and in the life of Pierre Bonelli, as part of his studies took place there.

An inauguration ceremony will take place on 8 June 2010, in Salon again, in Pierre Bonelli's former school, which will become known as "École Pierre Bonelli". Mrs Harriet Bonelli commented that "In this way, the memory of Pierre could inspire youngsters in Salon, whilst encouraging their interest in scientific research through IHÉS".

point of view by ...



Chiara Nappi
physicist - Princeton University

Research career

I started in mathematical physics, reading the book on mathematical methods of statistical physics by IHÉS Professor Emeritus David Ruelle and the papers of Professor Oscar Lanford. In the early 80s I moved into particle physics and nuclear physics. When the revival of String Theory took place in the mid-80s, I joined the field. Since then, I have worked on string phenomenology, low-energy effective actions for String Theory, black hole solutions, non-commutativity in String Theory, and (more recently) some aspects of integrability in String Theory and gauge theory.

Reasons for the low number of women in fundamental research and differences between the US and Europe

According to a new report from the National Academy of Science in the US, only 14% of PhD graduates in physics are women, and women make up 12% of applicants for tenure-track positions in physics. These numbers show a significant improvement with respect to the late 70s, when I arrived in the US. At the time, women in math and physics were rare as “white flies”, and sociologists of science voiced concern about

“chilly climate for women in science.” I must say I have never experienced it, neither in Europe nor in the US. The above mentioned US study also shows that women in the US these days have a better chance of being interviewed and hired for faculty positions than their male counterparts. Still, the question remains of why so few. Research and academia are demanding and relatively new careers for women, who traditionally have pursued occupations more compatible with the duties of wives and mothers. Up to half a century ago, the few women who worked in research/academia were unmarried. It is still hard to conciliate a demanding research job with family duties, child bearing and husband's career. However, thanks to many outreach programs to attract women, and a better support structure at home, in the work place and in the society at large, these days more young women are proving that it is possible to “have it all.” Not only have the numbers of women in science increased, but these young women are succeeding in being both great scientists and leaders in their field.

There is still a significant difference between Europe and the USA, and between one European country and another. At CERN, where I was on sabbatical in 2009, 30% of the researchers are women, with the majority of them (32%) coming from Italy, followed by France at a distant 8%. You will also find numerous Italian women in faculty positions in math and theoretical physics in

US universities. My explanation of this is the same as the one I offered 20 years ago (see reference below). The traditional grade school approach in Italy where everybody has to study math and science every year in order to get the high school diploma enables every interested woman to enrol in university math and science programs, which offer better job prospects than the humanities. In the process, women discover a talent/passion for the field and go on for a PhD in math/physics.

Advice for young women who want to work in fundamental research

There are no short cuts to talent, dedication and determination. The field is very competitive and those who want to survive in it and contribute to it need to be very good at what they do. Young people must work hard at building a strong background in the field of their choice and in related areas of research. One of the important ingredients for success is to make sure you choose an area of research that really interests you. You need to be curious about it, and passionate, and very good at it. Research, both in theoretical and experimental fields, requires hard work and commitment. It is also important to be self-confident and assertive. One thing women must keep in mind is that it is no longer necessary to make hard choices: these days it is easier than in the past to conciliate family life with a career in fundamental research, as many women are already doing very successfully.

Chiara R. Nappi, *On Mathematics and Science Education in the U.S. and Europe*, *Physics Today*, **43** (May 1990), 77-79.

2010 Events

24 - 26 March, IHÉS

La reconquête de la dynamique par la géométrie après Lagrange. Colloquium organised by P. Cartier, Y. Kosmann-Schwarzbach and J.P. Bourguignon.

14 April, 12 May, 9 June, IHÉS

Paris-Tokyo Arithmetic Geometry Seminar. A video-conference seminar co-organised by the Department of Mathematical Sciences of the University of Tokyo.

22 April, 20 May, 10 June, IHÉS

Seminars on Experimental and Theoretical Aspects of Gravity. Organised by T. Damour (IHÉS), C. Deffayet (APC) and P. Vanhove (CEA-Saclay & IHÉS)

19 - 31 July, IHÉS

Asian-French Summer School on Singularities in Partial Differential Equations. Jointly organised by Université Paris-sud 11, Université de Cergy-Pontoise and École Polytechnique.

12 October, Expo 2010 Shanghai China

“meeting the Unravelers”, conference for the general public in the France Pavilion amphitheatre.

18 (or 19) November, IHÉS

Inaugural lectures by Josselin Garnier and George Papanicolaou, first holders of the Schlumberger Chair for Mathematical Sciences at IHÉS.

