

# 'No' to Any Injustice

based on an interview given by Professor Mina Teicher, published in the *Profundere Scientiam* CAS bulletin, Issue no. 6.

For years Professor Mina Teicher has been active in aiding gender equality in science and technology. She has been investigating the mechanisms behind the discrimination that takes place against women scientists and has attempted to ensure equal chances for her colleagues' unhampered development of academic careers. Although the world of science is male-dominated, and fighting against gender discrimination is a long and painful process, men and women have the same intellectual potential, so discrimination should be eliminated at all costs.

Moreover, society's role is to implement effective social tools for providing equal opportunities of personal accomplishment for both sexes, so the question regularly raised by many women: 'Career or children?' will no longer have 'or' as a conjunction. Unfortunately, women very often seal their fate by fulfilling the social or family expectations that are directed towards them. Instead of pursuing academic careers, they usually decide to have children and soak in the hearth and home, while their male counterparts use this time to build glowing futures as academics and researchers. The academic community itself is pervaded with stereotypical ideas on men and women scientists, and very often its representatives act in favour of strengthening gender stereotypes. To illustrate this, Professor Teicher evokes her reaction to the unfair and harmful remarks of Professor Lawrence Summers, President of Harvard University, on women's alleged lack of mathematical skills, a lack, as he put it, which women have no influence on because it is gender-determined. She found it outrageous that a person who is neither an expert in the field of genetics nor has any firm evidence to support his opinion, could make such a daring statement. Professor Teicher believes that one should let women decide for themselves who they want to be, and where and what majors they want to study. If women want to become mathematicians, no one except for themselves should decide about this choice.

The world of science and technology is not gender-blind, but it is worth fighting for this 'blindness' to use a scientist's innovative ideas, results and knowledge for the benefit of the whole society, no matter if this is a male or

**Professor Mina Teicher** – distinguished mathematician, Director of the Emmy Noether Institute for Mathematics, Bar-Illan University, Israel, Vice President in the International Commission for Mathematical Instruction (ICMI), a member of the council of the Wolf Foundation, a member of the board of the International Women Forum (IWF), a delegate of the Advisory Board to the European Commission on Gender Issues, a member of the National Council for Research and Development. Professor Teicher's areas of research include: applied mathematics and computer science, geometry, topology of algebraic surfaces, braid group application to cryptography, algebraic curves in computer vision (neuro-computation and applications in bio-medicine), CAD\_CAM, and electro-optics. Professor Teicher is the author of over 155 publications, 40 manuscripts, 2 patents, and an editor of 5 books; she has received many awards for her scientific achievements as well as for her contribution to gender equality (Globes Magazine Award for being one of the 50 most influential women in Israel, 2006).

female scientist. Believing there is equal male and female aptitude to become an outstanding scientist, Professor Teicher is determined to fight for gender equality at universities, to prepare adequate curricula and to encourage women, even in ultra-orthodox Jewish communities, to receive academic titles. After all, in Professor Teicher's opinion: 'Women in science is not affirmative action for women, but affirmative action for science'.

Professor Mina Teicher visited the Warsaw University of Technology as part of the CAS Scholarship for Visiting Professors in September 2011.

## The CAS Advanced Studies Offer

Throughout the academic year the Center for Advanced Studies provides, within the CAS Advanced Studies Offer, a range of interdisciplinary basic and special lectures for WUT academics, MSc and PhD students. It is also addressed to representatives of other academic circles. The offer is to enrich and complement students' knowledge acquired during their majors and to serve as an inspiration for the listeners' scientific development.

### BASIC LECTURES/SPRING SEMESTER 2011/2012:

- Professor Irmina Herburt (WUT) – *Geometric Tools\**
- Professor Mieczysław Muraszewicz (WUT) – *Basics and Potential of IT\**
- Professor Zbigniew Lonc (WUT) – *Introduction to Algorithmic Graph Theory*
- Professor Marian Majchrowski (WUT) – *Complex Analysis with Elements of Integral Transforms*

Academics of the Institute for Interdisciplinary Studies 'Artes Liberales', University of Warsaw – *Humanities Face the Challenges of Our Times:*

- Professor Piotr Wilczek – *Canon in Contemporary Culture*
- Professor Jan Kieniewicz – *The Importance of Tradition in the Process of Modernisation*
- Professor Krzysztof Rutkowski – *Madness as a Source of Wisdom*
- Professor Szymon Wróbel – *Naturalism and Anti-naturalism in the Philosophy of the XX Century*
- Professor Ewa Łukaszuk – *Networks, Technologies, Signs of Identity – Building a Transcolonial World*
- Professor Jolanta Partyka – *Woman in the Culture of Past Epochs: Paradoxes, Myths and Stories*
- Professor Janusz Rieger – *Identity Through Language*

## SCIENTIA SUPREMA

The Center for Advanced Studies holds lectures within the Scientia Suprema series several times a year. The lectures, delivered by world-renowned scientists, are aimed at acquainting the audience with outstanding breakthrough achievements in science and technology.

In May 2012 Scientia Suprema was devoted to nanotechnology with the following lectures: *Nanotechnology and Semiconductor Processing* by Professor Jerzy Rużyłło, Department of Electrical Engineering and Department of Materials Science and

- Professor Jolanta Sujecka – *What Does the Word 'the Balkans' Mean?*
- Professor Maria Kalinowska – *Imagination as the Key to Interdisciplinary Cognition – the 'Case' of Mieczysław Limanowski*
- Professor Witold Wołodkiewicz – *Contemporary Legal Culture and its Origins in Roman Law*
- Professor Jan Miernikowski – *How Does (French) Literature Help in Thinking?*

### SPECIAL LECTURES/SPRING SEMESTER 2011/2012:

- Professor Jan Fronk (UW) – *Introduction to Molecular Biology*
- Professor Teresa Regińska (IM PAS) – *Application of Numerical Analysis\**
- Professor Piotr Girdwoyń, Professor Ewa Bulska, Andrzej Witkowski, PhD, DSc, Andrzej Wyszomolek, PhD, DSc, Jolanta Borysiuk, PhD, Barbara Wagner, PhD (Center for Forensic Science, UW) – *Physicochemical Tests of Matter in Criminology\**
- Professor Witold Prószyński (WUT) – *Measures of Robustness of Linear Models to Observation Disturbances – Uncorrelated and Correlated Observations\**
- Professor Zbigniew Pakieła (WUT) – *Characteristics of Engineering Materials*
- Professor Małgorzata Lewandowska, Professor Jarosław Mizera, Professor Zbigniew Pakieła, Professor Krzysztof Sikorski, Wojciech Świączkowski, PhD, Eng., Wojciech Szychalski, PhD, Eng. (WUT) – *Advanced Measurement Techniques for Characterising Microstructure and Material Properties*
- Professor Marek Demiański (UW) – *Understanding Complexity*

See more information:

<http://www.konwersatorium.pw.edu.pl/oferta/>

\* Lectures co-financed by the European Union within the European Social Fund

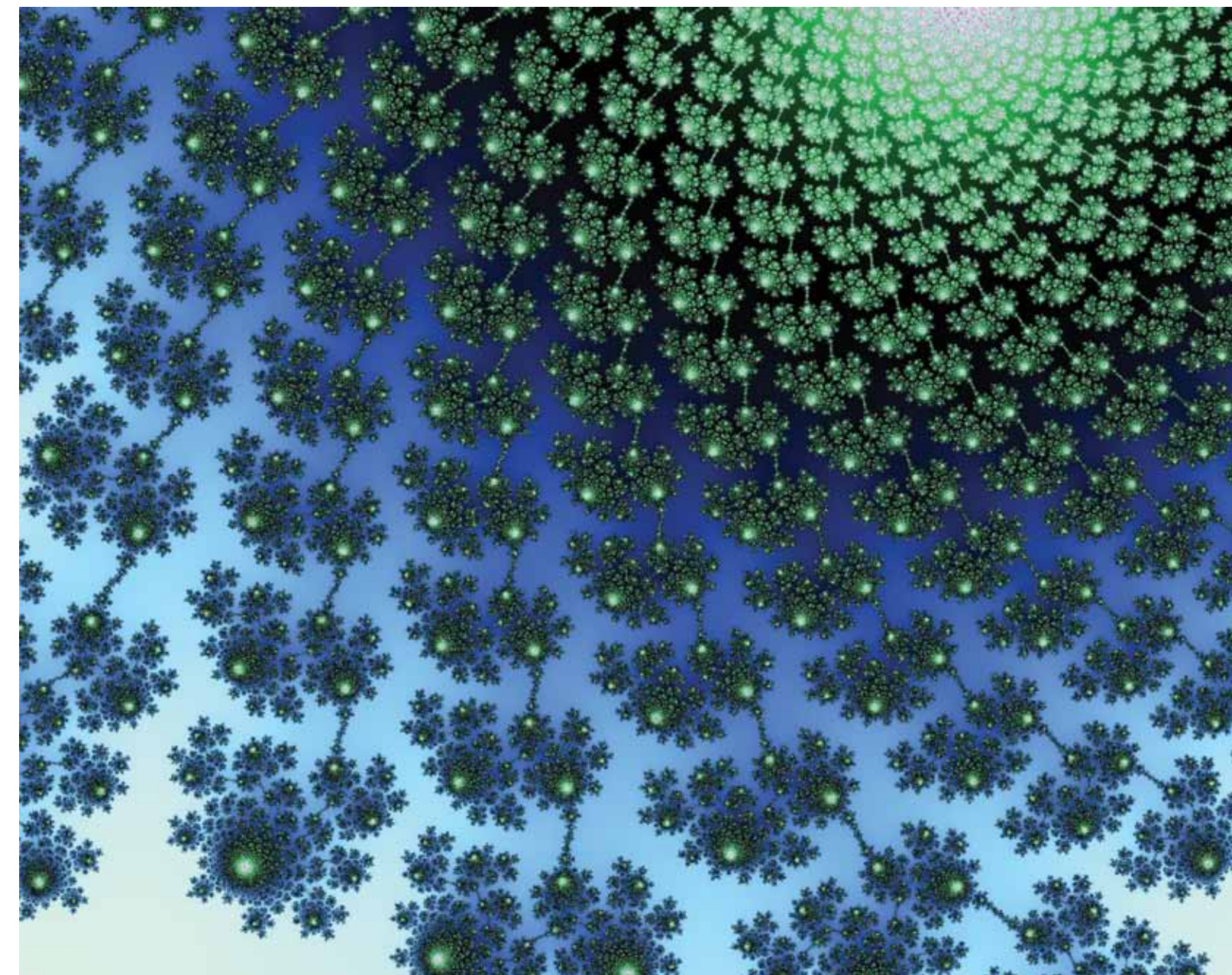
Engineering, Penn State University, USA and *Nanostructured Materials for Inhalation Therapies* given by Professor Leon Gradoń, Faculty of Chemical and Process Engineering, Warsaw University of Technology. Professor Rużyłło's research focuses on methods and devices for the production of micro- and nano-electronic semiconductors as well as on transformation and characterisation of electronic and photonic materials. Professor Leon Gradoń examines the mechanisms of aerosol and micro molecule transport processes in gases and liquids and their applications in medical and technical devices.

# No. 3 NEWSLETTER

OCTOBER 2012



**Center for Advanced Studies**  
OF WARSAW UNIVERSITY OF TECHNOLOGY



### INSIDE THIS ISSUE:

*The Art of Making Science is a Reward in Itself* – Professor Aaron Ciechanover  
*'No' to Any Injustice* – Professor Mina Teicher

*CAS Advanced Studies Offer – Spring Semester 2011/2012*  
*CAS Scholarships for Visiting Professors*  
*Calendar of Events (April 2012/September 2012)*

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### CAS Newsletter

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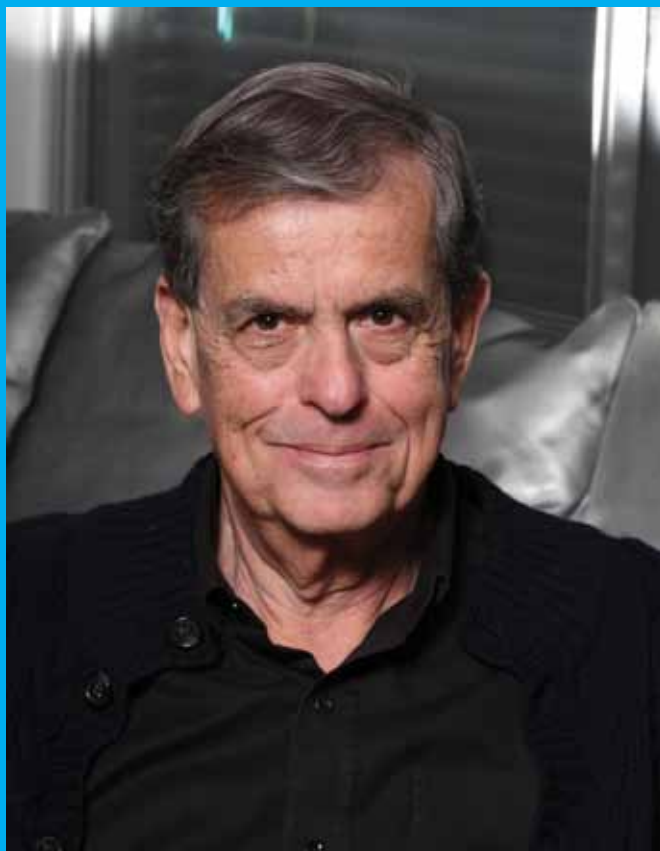
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# The Art of Making Science is a Reward in Itself

based on an interview given by Professor Aaron Ciechanover – a 2004 Nobel Prize Laureate in Chemistry.



↑ Professor Aaron Ciechanover | Photo by Dan Porges

Professor Aaron Ciechanover – world-renowned biologist and chemist, Director of the Rappaport Family Institute for Research in the Medical Sciences at the Israel Institute of Technology (Technion), Dean of the Chemical and Biopharmaceutical Science Research Institute at Nanjing University, China. In 2004, along with Professors Irvin Rose and Avram Hershko, he was awarded the Nobel Prize in Chemistry for discovering the ubiquitin-proteasome system (intracellular quality control mechanism of protein degradation). Professor Ciechanover is one of the most eminent representatives of contemporary science, the author of over 200 publications and an honorary member in more than 20 scientific committees. He has received 27 honorary academic degrees, including 15 *honoris causa* and 12 Honorary Professor titles.

## Calendar of Events

- APRIL 2012**
  - > *In the Center of Attention* – presenting the center's current activities and integrating academic communities around innovative ideas and projects
  - > WUT Colloquium Lecture: *Mysteries of the Electrode/Electrolyte Interface* by Professor Elżbieta Frąckowiak, Poznan University of Technology
  - > Publishing the 2nd issue of the CAS Newsletter
  - > *Open Lectures on Mathematics, Physics and Computer Science* addressed to pupils, students and teachers (from the academic year 2012/2013 onwards the name of the event will be changed to *Academia Scientiarum Principium*)
- MAY 2012**
  - > WUT Colloquium Lecture: *Chemistry Facing Its Own Information Processing* by Professor Lucjan Piela, University of Warsaw
  - > CAS Spring Scientific Workshop, Lipnik Park
  - > Publishing the 6th issue of *Profundere Scientiam* CAS bulletin
  - > CAS Advisory Council – the last meeting within the current term of office
- JUNE 2012**
  - > *In the Center of Attention* – presenting the center's mission and future endeavours, the meeting held with the participation of Małgorzata Kidawa-Błońska, MP
  - > Scientia Suprema: *Broad Spectrum of Nanotechnology* by Professor Jerzy Rużyło, Penn State University, and Professor Leon Gradoń, Warsaw University of Technology
  - > Medal for a Young Scientist – the ceremony of awarding Katarzyna Grebieszko, PhD, Faculty of Physics, Warsaw University of Technology
- SEPTEMBER 2012**
  - > Research scholarship for WUT PhD students – competition announcement
  - > Training course for WUT PhD students: *Effective Methods in Information Management*

According to Professor Aaron Ciechanover, the beauty of science is when one attempts to discover something, makes many trials and, suddenly, the answer is waiting 'right behind the corner'. It is a beautiful cycle – we work on something in a laboratory, we peel off its mysteries layer by layer, and then we see the solution, understand the mechanism and finally close up the answer in a bottle with medicine.

Scientists should serve no political aims, they should concentrate on improving life. To do so they must be free and unstoppable in their will to travel abroad and conduct research. At the same time, however, curious of Mother Nature's mysteries, scientists are obliged to look at their work in a broader context, that is, to take into account their cultural background, language, philosophy, sociology and religion. These elements define humanity, and this is what we should be driven by in what we do. Science, as a component of civilisation, cannot be detached from it, but it has to harmonise with its other ingredients. As Professor Ciechanover explains, the reason why we must absolutely look for references in, for example, philosophy and religion, is that we live in a thin layer of history – someone has come before us, someone will come after us. Life did not start when we were born, nor will it end when we die. Therefore, we cannot ignore the fact that, as a part of a large society that has a continuation in human

history, we are anchored in time and space and we need to follow timeless principles worked out by past generations.

Moreover, science itself raises a lot of controversy and morally doubtful decisions – just to mention organ transplantation, profiling DNA or abortion. As we still have no explicit definition of 'a defect' and opinions on it vary, this ambiguity may lead to abuse. For instance, someone will not want a child with blue eyes, and someone will not want a child that is mentally retarded. Besides, who is to decide on aborting life? The mother? The father? Society? Ethics plays a crucial role in this tangle of disputable issues, but as the old Jewish proverb goes: *Science brings problems, only ignorants are free of them*. There are still so many secrets in science to be discovered. The more we think we know, the less we know, in fact, to each answer new questions are raised and the amount of unknown data expands rather than diminishes. Although science 'makes' our lives what they are to a great extent, we cannot focus solely on explaining everything in terms of scientific advancement. We cannot define everything in equations, formulas and numbers, and some secrets, especially those related to the spirit or emotions, should be left unraveled. Otherwise, life will lose the aura of romanticism. Consequently, we should leave some aspects of our life in the misty veil

of speculations. Let the spiritual world remain a *terra incognita* for science.

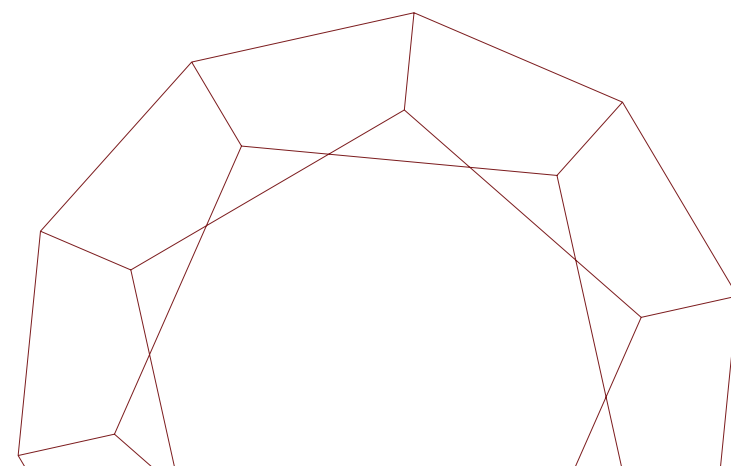
Professor Ciechanover says winning the Nobel Prize was undoubtedly one of the most important events in his life, something he could not even dare to have dreamt of when he was a child. Yet, as Professor Ciechanover rightly points out, many domains are not awarded with the Nobel Prize, but that does not mean that they are less important. On the contrary, the driving force of one's life are not awards, but the passion and love for the work itself. Life is about experiencing all the beauty around us (reflected in literature, languages, music, architecture and other areas). Human existence is a collection of happenings, and for Professor Ciechanover winning the Nobel Prize is merely one of them. In other words, it is a side effect of his passion for work and not a purpose in itself. Life is not programmed for one aim, on the contrary, understanding life is a never-ending process. As the Almighty has left many gaps for us to fill, we cannot say that once one aim is achieved, we may 'turn ourselves off'. By unraveling more and more scientific puzzles, we compete against human weaknesses, and from religion or philosophy we draw the moral foundations on how to behave after we have cracked another cipher to the mysteries of the world.

With the knowledge we have gained we can do either good or harm, and the choice of how we use it depends on our moral apparatus. For example, we can use dynamite to

kill living organisms, to build roads or to extract natural resources. We can manipulate genes to create living monsters or to make crops more resistant to low temperatures or vermin. Yet, in achieving whatever we want to achieve, it is our own belief in good that should direct us.

Professor Aaron Ciechanover visited the Warsaw University of Technology in November 2011 and gave a lecture entitled *Drug Development in the 21st Century and the Personalised Medicine Revolution: Are We Going to Cure All Diseases?*

The full version of the interview was published in the *Profundere Scientiam* CAS bulletin, Issue no. 6.



## CAS Scholarships for Visiting Professors

The aim of the project is to invite leading scientists representing world-renowned research institutions who will contribute to the WUT academic community's intellectual potential by conducting research and delivering lectures and seminars on innovative solutions and modern technologies.

FROM APRIL TO JULY 2012 THE CENTER FOR ADVANCED STUDIES HOSTED THE FOLLOWING EMINENT SCIENTISTS:

- Professor Gerald Urban, Department of Microsystems Engineering, Albert Ludwig University of Freiburg, Germany
- Professor Jean-Paul Brasselet, Institut de Mathématiques de Luminy, Le Centre national de la recherche scientifique, France
- Professor Thomas Graule, Swiss Federal Laboratories for Materials Testing and Research, Switzerland
- Professor Vladimir G. Chigrinov, Department of Electronic and Computer Engineering, Hong Kong University of Science and Technology, China

IN THE AUTUMN SEMESTER OF 2012/2013 THE WARSAW UNIVERSITY OF TECHNOLOGY WILL BE VISITED BY:

- Professor Gerald Urban, Department of Microsystems Engineering, Albert Ludwig University of Freiburg, Germany (the second part of the visit)
- Professor Jonathan Smith, Department of Mathematics, Iowa State University, USA
- Professor Kenneth Joel Shapiro, Executive Director of Animals and Society Institute, USA

To find more information on scholarships for visiting professors visit:  
<http://www.csz.pw.edu.pl/index.php/en/stypendia-dla-profesorow-wyzytujacych>  
<http://www.csz.pw.edu.pl/index.php/en/more-about-joomla/32/58-jak-otrzymac-stypendium-wyjazd-doktorantow>

The CAS scholarships for visiting professors are co-financed by the European Union within the European Social Fund.