VIASM
Newsletter

Volume 3 Issue 1
Jan 2015

FOR EXCELLENT RESEARCH IN VIETNAM

SOME PHOTOS

Prof. Nguyen Thien Nhan (on the left) and Prof. Hoang Tuy at the 40-year Anniversary Ceremony of Vietnam at the IMO (Hanoi, September 2014).

Vietnam Institute for Advanced Study in Mathematics (VIASM)

Founded in 2011

Address:
7th fl., Ta Quang Buu Library, in HUST campus
1 Dai Co Viet str., Hanoi, Vietnam.
Tel: (+84)-4-36231542
Fax: (+84)-4-36231543
Website: *http://www.viasm.edu.vn*

Board of Directors

VIASM's BoDs was re-appointed by the Minister of Education and Training for the next term 2014-2017:

Scientific Director: Prof. Ngo Bao Chau
Managing Director: Prof. Nguyen Huu Du
Deputy Director: Dr. Nguyen Thi Le Huong

VIASM staff in a performance at the festival "The elegance at office" organized by MOET Union (November 2014).

Banner's photo: Prof. Nguyen Thien Nhan - Party Politburo Member, President of Vietnam Fatherland Front Central Committee at the 40-year Anniversary Ceremony of Vietnam at the IMO.

The 40-year Anniversary Ceremony of Vietnam at the International Mathematical Olympiad (1974-2014)

The 40-year Anniversary Ceremony of Vietnam at the International Mathematical Olympiad (IMO) was held on September 14, 2014 in Hanoi. The Ceremony is co-organized by the Ministry of Education and Training (MOET) and Vietnam Mathematical Society (VMS), sponsored by the National Program for Developing Mathematics until 2020 and other organizations such as BIDV, FPT, Hanoi Academy of Theatre and Cinema etc.

In 1974, Vietnam first sent a delegation to attend the 16th IMO for high school students in German Democratic Republic. During the 40 years, Vietnam has attended the IMO for 38 times and achieved 213 medals, including 52 gold, 94 silver and 67 bronze medals; nine students twice won gold medals and six students achieved maximum marks.

The Ceremony paid tribute to the IMO teachers and students who contributed to the process of training and examination, enhanced the role of high schools for gifted students, the excellent high school student contests as well as encouraging students to study and contribute their talent to the development of Vietnam.

Prof. Ngo Bao Chau (IMO Gold Medalists 1988 and 1989) and Hanoi's highschool gifted math students at the 40-year Anniversary Ceremony of Vietnam at the

Generations of IMO contestants attending the Ceremony.

Activities of the National Program for the Development of Mathematics (NPDM)

As annual activities, training schools for high school math teachers and high school gifted math students have been held in 2014. This year, two training schools for math teachers have been held for the two regions of Vietnam (northern one from Ha Giang to Quang Tri, and southern one from Hue to Ca Mau) with the participation of 79 teachers from high schools for gifted students over the country.

Like last year, two training schools for high school gifted students were also held again in Hanoi and Ho Chi Minh City with the participation of 99 and 100 high school students respectively.

For the first semester of the school year 2014-2015, the Program gave scholarships to 297 high school students from 70 high schools and 178 math students from 12 universities all over Vietnam.

Besides, the conference "Math teaching and math teaching materials for colleges of economics, finance and banking" was held in Da Nang (December 6, 2014) to follow up the two conferences "Math books and materials for universities" in 2013.

Dr. Can Van Luc (BIDV) at the conference "Math teaching and math teaching materials for colleges of economics, finance and banking" (Da Nang, December 2014)

Moreover, the Program continued calling for applications for Mathematical Research Awards 2014. There were 210 papers applied for the Award and 70 published papers have been selected to be awarded.

NPDM's website:
http://viasm.edu.vn/npdm/

FAST FACTS

72 and 30

72 research fellows and visiting researchers came to work at VIASM from July to December 2014. Among them, there were 30 foreigners or Vietnamese people from abroad.

The first NTU-VIASM Workshop on Discrete Mathematics

This is the first joint workshop on Discrete Mathematics organized by the Nanyang Technological University (NTU) and the Vietnam Institute for Advanced Study in Mathematics (VIASM). The workshop is going to bring together and provide a platform for the researchers of NTU and Vietnam in all aspects of Discrete Mathematics and related areas. The purpose is to promote the mutual relation between NTU and VIASM and to eventually create collaborations between Singaporean and Vietnamese researchers.

The program is composed of three keynotes of experts in Cryptography and Graph theory. Other contributed talks from Singaporean and Vietnamese researchers will focus on new trends and developments in the domain of Discrete Mathematics, such as: code, enumerative combinatorics, graph theory, algebraic combinatorics, algorithms, discrete optimization, modeling and simulation.

There were 65 participants attending the four-day workshop. The workshop consisted of 3 keynote lectures and 26 other 25-minute invited talks.

For more details, please visit:
http://viasm.edu.vn/activities/jwvsdm/

VIASM Annual Meeting 2014

Annual Meeting is a regular event of VIASM and is organized following the example of Bourbaki seminar. VIASM invites leading mathematicians to report on exciting developments in their field of expertise, and generally not on their own work. The reports are to be written by the time of the meeting and will be published in a special issue of Acta Mathematica Vietnamica.

VIASM Annual Meeting 2014 was the third event in the series, which took place in two days 26-27 July, 2014. Invited speakers were Prof. Louis H. Y. Chen (National University of Singapore), Pham Xuan Huyen (Université Paris Diderot-Paris 7, France), Endre Szemeredi (Rutgers University, USA), Vu Ha Van (Yale University, USA), and Michael Vogelius (Rutgers University, USA).

Prof. Endre Szemeredi (Rutgers Univ., Abel Prize 2012) at Annual Meeting 2014.

The workshop attracted more than 60 participants.

For more information, please visit:
http://viasm.edu.vn/hdkh/am2014 /

WHAT RESEARCHERS SAY?

"Participating in the research group on Nevanlinna theory and related topics organized by Tran Van Tan was a wonderful opportunity for me. Working in this group allowed me to renew my existing research collaboration with Ta Thi Hoai An, and we were quickly able to improve on some of our previous research results. Spending time at VIASM gave me the opportunity to get to know them personally, and we have made some plans for continued research. I also enjoyed the opportunity to interact with some Vietnamese students attending activities at VIASM and discussing with them opportunities for graduate study at my university and in the United States in general. I would recommend an extended stay at

VIASM for any mathematician interested in research collaboration with Vietnamese mathematicians…" – Assoc. Prof. William Cherry.

Assoc. Prof. William Cherry
(University of North Texas, USA)

WHAT RESEARCHERS SAY?

"What I want to say is that VIASM is the best environment of freedom, flexibility for studying mathematics in Vietnam. If you are a researcher here, you can invite mathematicians whom you are interested in to visit VIASM for discussing and sharing your mathematical ideas, even you are young. VIASM is willing to support such a visit. If you like Vietnam, you have a sympathetic view with Vietnamese, of course, you should be a mathematician, and you should come to VIASM to see how good it is."- Dr. *Nguyen Thac Dung.*

Dr. Nguyen Thac Dung
(University of Sciences, VNU Hanoi)

Research groups

From July 2014 until December 2014, there have been 8 research groups working at the VIASM:

- Group on *Equilibrium Problems* consists of 4 members and 1 visiting professor: Prof. Pham Ky Anh, Prof. Le Dung Muu, Assoc. Prof. Pham Ngoc Anh, Dr. Le Quang Thuy, and Prof. A. Yagi.
- Group on *Optimization Theory* consisted of 3 members: Assoc. Prof. Nguyen Nang Tam, Dr. Nguyen Thi Toan, and MSc. Nguyen Van Tuyen.
- Group on *Algebraic topology* consists of 2 members: Assoc. Prof. Le Minh Ha, Dr. Vo Thanh Tung.

- Group on *Nevanlinna Theory and related topics* consists of 4 members and 1 visiting professor: Assoc. Prof. Tran Van Tan, Assoc. Prof. Ta Thi Hoai An, Assoc. Prof. Si Duc Quang, Assoc. Prof. William Cherry, Prof. Michael Min Ru.
- Group on *Limit Theorem in Probability Theory*" consisted of 4 members: Prof. Nguyen Van Quang, Dr. Nguyen Van Huan, MSc. Duong Xuan Giap, and MSc. Nguyen Tran Thuan.

Assoc. Prof. Nguyen Nang Tam
(Hanoi Pedagogical Univ. N° 2)

- Group on *Bio-informatics* consisted of 4 members: Dr. Le Duc Hau, Assoc. Prof. Yung-Keun Kwon, Dr. Pham Quang Dung, and Dr. Huynh Thi Thanh Binh.
- Group on *Complex Analysis* consists of 4 members: Prof. Nguyen Quang Dieu, Dr. Kieu Phuong Chi, Dr. Nguyen Xuan Hong, and Dr. Phung Van Manh.
- Group on *Hyperbolic Complex Manifolds* consists of 5 members: Prof. Do Duc Thai, Dr. Pham Nguyen Thu Trang, Dr. Ninh Van Thu, Dr. Pham Duc Thoan, and Dr. Pham Hoang Ha.

Visitors

- Assoc. Prof. Tran Thanh, University of New South Wales, Australia.
- Prof. Michael Min Ru, University of Houston, USA.
- Prof. Endre Szemeredi, Rutgers University, USA.
- Prof. Bernd Ulrich, Purdue University, USA.
- Dr. Ha Huy Thai, EPEE, University of Evry Val d'Essonne, France.
- Prof. Luc Illusie, Université Paris-Sud, France.
- Prof. Jean Bernard Lasserre, LAAS-CNRS, France.
- Assoc. Prof. Pham Tien Son, University of Da Lat, Vietnam.
- Dr. Li Wei-Xi, Wuhan University, China.
- Prof. A. Yagi, Osaka University, Japan.

Prof. Luc Illusie
(Université Paris-Sud, France)

Workshop "Applications of Mathematics in Financial Risk Management"

Workshop "Applications of mathematics in financial risk management" was held at VIASM on July 28 and 29, 2014. This event is in a series of workshops jointly organized by JVN Institute and VIASM. The first workshop "What's Next for Financial Market in Vietnam – Derivative Securities?" was successfully held in 2013.

In the context of the increasing financial market risks, applying mathematics in domestic institutions is implemented more widely. This is a forum for researchers and those working in the financial market to discuss the implementation of mathematical (quantitative) tools into Vietnam financial market.

The program is overlapped between academic discussion and practical presentations. There are also students' researches on the poster.

Prof. Ngo Bao Chau was the scientific chair of the workshop. Besides academic institution, the event attracted more than 100 participants from State Securities Commission of Vietnam, commercial banks, enterprises etc.

Workshops/ Conferences

8 workshops, conferences have been organized by the VIASM since July 2014:

- VIASM Annual Meeting 2014, July 26 – 27, 2014.
- Workshop on Applications of Mathematics in Financial Risk Management, July 28-29, 2014.
- Hackathon Vietnam 2014, August 1-2, 2014.
- Mini-workshop on Local rings and Graded Algebras, August 4-6, 2014.
- Workshop "Equilibrium and Fixed Point Problems: Theory and Algorithms", August 25-28, 2014.
- Mini-workshop on Probability for Statistics in Econometrics, November 26, 2014.

- ➲ Workshop on Algebra-Geometry-Topology 2014, December 18-21, 2014
- ➲ The first NTU-VIASM Workshop on Discrete Mathematics, December 27-30, 2014.

Special Programs

2 public lectures, 1 special school and 5 mini-courses have been organized:

- ➲ Public lecture "Mathematics is needed for almost everyone" by Prof. Endre Szemeredi (Rutgers University, USA; Abel Prize 2012), July 28, 2014
- ➲ Public lecture "On Some Old and New Advances in Number Theory" by Prof. Stephen Gelbart (Weizmann Institute of Science, Israel), September 4-9, 2014
- ➲ Summer Program "PDEs and Applied Mathematics", July 14 – Aug 7, 2014
- ➲ Mini-course "High dimensional geometry and Data analysis" by Prof. Vu Ha Van (Yale University, USA), July 14 – 18, 2014
- ➲ Mini-course "Equilibrium and Fixed Point Problems" by Jong Kyu Kim, Tran Dinh Quoc, Atsushi Yagi, Assoc. Prof. Cung The Anh, July 14 – 18, 2014
- ➲ Mini-course "The p-adic de Rham comparison theorem, after A. Beilinson" by Prof. Illusie (Université Paris-Sud, France), September 4-11, 2014
- ➲ Mini-course "Coefficient problem for whole-plane SLE" by Prof. Michel Zinsmeister (Université d'Orléans, France), December 15-16, 2014
- ➲ Mini-course: Introduction to the Theory of Buildings By Professor R. Weiss (Tufts University, USA), 22-31/12/2014

Hackathon Vietnam 2014

Hackathon Vietnam 2014 – an innovative programming contest was held in Hanoi and Ho Chi Minh City from August 1, 2014 to August 2, 2014. The event in Hanoi was hosted by the Institute, and Prof. Ngo Bao Chau also attended the event in Ho Chi Minh City.

There were 36 teams of more than 150 young IT students and IT engineers gathered at VIASM to generate ideas, code the products and present their projects throughout the two days. The winners were sponsored a round trip to Silicon Valley, USA and some ideas or products would be further mentored or invested by some venture capital invited by the organizers.

The winners this year was Doto Team with the idea and quite complete product Voicepedia. The team consisted of two

former math gifted high school students and one member was then working at Institute of Mathematics – VAST.

Contestants at Hackathon 2014, venue Hanoi.

For more details about the event, please visit: http://hackathonvietnam.com/

VIASM invites research fellowship application for the year 2016

VIASM invites research groups and individuals to apply for short-term research stays for the year 2016 (min. 2 months, max. 12 months). Candidates can be groups or individuals who are teaching, doing research as well as applying mathematics in various areas of technology, economics and society. The candidates will be evaluated by the Scientific Council of the Institute.

Among potential individuals, VIASM also offers 5 post-doctoral positions. Post-doctoral fellows will receive the same support as researchers, but for at most a one-year stay. Only applicants who achieved Ph.D. degrees after 1.1.2011 can be accepted.

Moreover, five mathematicians who are invited to work at the VIASM in 2016 would be selected to NIMS (Korea) or IMS (NUS Singapore) from one to three months for cooperation and exchange purposes.

This year, the Institute has developed an online Researcher Management System (RMS) to manage its researcher's curriculum vitae and research projects. The software have launched at http://rms.viasm.edu.vn. Research fellow applicants can submit their proposal online via RMS.

Deadline for project proposal submission: **January 24, 2015.**

VIASM Lab for Research and Applying Mathematics in Economics, Finance and Banking

VIASM is preparing for a lab for research and applying mathematics in economics, finance and banking (Fmathlab).

The mission of Fmathlab is to become a leading research lab in the country which has international scope of operations.

The Lab focuses on mathematical foundation for financial analysis, banking, macro-economics and econometrics. It also plays as a center in organizing applied mathematical research in economics, finance-banking, insurance and investment etc.

Fmathlab aims to attract the prominent international and Vietnamese researchers in applied mathematics in finance and economics.

Joint Stock Commercial Bank for Investment and Development of Vietnam (BIDV) signed a Memorandum of Understanding with VIASM to become its strategic partner in applying mathematics in finance and banking.

With the significant support from BIDV, Fmathlab is expected to officially operate from January 2015.