

MOLECULAR FRONTIERS SYMPOSIUM 2013

October 28-29, 2013
Korea University

Organized by

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THE DONG-A ILBO



DONGA SCIENCE 



Meet your Superheroes !!

Organized by the Molecular Frontiers Foundation, the Royal Swedish Academy of Sciences, Nanyang Technological University and Korea University, this special event is bringing together the most famous collection of scientists ever to visit Korea at one time. You can meet and talk with the world's leading experts in science, including professors, university presidents, government ministers, business leaders, and several Nobel Prize winners.

Meet the World's Most Extraordinary Mentors

MY

SUPER

HERO





Welcome to the Molecular Frontiers Symposium 2013 at Korea University!

Organized by the Molecular Frontiers Foundation, the Royal Swedish Academy of Sciences, Nanyang Technological University, and Korea University, this special event is bringing together the most famous collection of scientists ever to visit Korea at one time.

On October 28–29, 2013, you can meet and talk with the world's leading experts in science, including top professors, university presidents, government ministers, business leaders and several Nobel Prize winners.

Whereas school often emphasizes the answer, Molecular Frontiers focuses on asking the right questions. The answer to a good question often leads to another, even more exciting question and opens the door to new possibilities within our imagination. During the course of the Symposium, you will hear about unsolved problems that can change our society and scientific tipping points that have changed the trajectory of the world. We hope that you will enjoy the riveting talks and partake in seeing just how far our imaginations can take us.

This year, we are going one step further to give you the opportunity to personally meet these science superstars! For the first time in the history of Molecular Frontiers, this level of close engagement is made possible by our new interactive dialogue series that is open to all youth symposium attendees.

Don't miss this chance to meet the scientists who are tackling some of the world's biggest global challenges.

Come join us at the Molecular Frontiers Symposium 2013 at Korea University and witness the wonders of science.

We hope to see you soon!

Byoung Chul Kim

President of Korea University

MOLECULAR FRONTIERS



Molecular Frontiers Symposium 2013

Theme

What are the Molecular Frontiers of Tomorrow:
The Science for You to Solve?

Date

October 28–29, 2013

Venue

Inchon Memorial Hall, Korea University

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the Royal Swedish Academy of Sciences

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Speakers

12 speakers including Nobel Prize laureates,
and world-leading scientists

Presentation Highlights

- Individual lectures and Q&A sessions
- Discussion among panelists in the form of a "Talk Concert" between the presenters and four high school students
- Discover the link between cooking and science with Sweden's top-rated chef
- Video presentation by Nobel Prize laureates





Monday, October 28, 2013

Time	Program
08:30 – 09:00	Registration
09:00 – 09:10	Opening Remarks Dr. Yuhyun Park (Nanyang Technological University, Singapore)
09:10 – 09:25	Welcome Remarks Byoung-Chul Kim (President, Korea University, Republic of Korea) Professor Bertil Andersson (President, Nanyang Technological University, Singapore)
09:30 – 09:45	Guest-of-Honor Speech Dr. Choi Mun-kee (Minister of Science, ICT and Future Planning)
09:45 – 10:05	Molecular Frontiers Symposium 2013 Keynote & Commencement Speech Convergence of Science – A View through the Nobel Prize Professor Bengt Nordén (Chairman, Molecular Frontiers Foundation / Chair Professorship of Physical Chemistry, Chalmers University of Technology, Sweden / Former Chairman, Nobel Committee for Chemistry)
Session NOBEL (Modulator: Prof. Nam-Joon Cho)	
10:10 – 10:30	Lecture 1 Bioinformatics for the 21st Century Dr. Richard Roberts (New England Biolabs, USA / 1993 Nobel Prize in Physiology or Medicine)
10:30 – 10:50	Lecture 2 Toward Developing New Bioprotective Compounds: Biological Challenges and Chemical Opportunities Professor Andrew Fire (Stanford University, USA / 2006 Nobel Prize in Physiology or Medicine)
10:50 – 11:30	Q&A: Richard Roberts and Andrew Fire
11:30 – 13:30	Lunch
Session CREATIVITY (Modulator: Prof. Jae Chun Hyun)	
13:30 – 13:50	Lecture 3 To Discover the Unknown Professor Bertil Andersson (President, Nanyang Technological University, Singapore) (Former Chairman, Nobel Committee for Chemistry / Former CEO, European Science Foundation)
13:50 – 14:10	Lecture 4 Biomaterials for Drug Delivery Dr. Robert Langer (Massachusetts Institute of Technology, USA / 2008 Millennium Technology Prize Winner)
14:10 – 14:50	Q&A: Bertil Andersson and Robert Langer
Session FOOD (Modulators: Prof. Bengt Nordén, Dr. Yuhyun Park)	
14:50 – 15:30	Lecture 5 Tastes in My Heart – How Passion Made My Dream Come True Chef Jennie Walldén (2013 Winner of Master Chef, Sweden)
15:30 – 16:00	Refreshment Break
16:00 – 17:00	Panel Talk Concert How Do We Foster Creativity to Solve Big Problems? Chair: Professor Bengt Nordén, Mrs. Lorie Karnath Panelists: Richard Roberts, Andrew Fire, Robert Langer, Bertil Andersson, Arie Warshel Four High School Students
17:00 – 17:10	Notice on the Following Schedule
17:10 – 18:00	Dinner
18:00 – 19:00	KU Cheerleading Orientation (Optional)
19:00	End of Day One

* Programs are subject to change.



Tuesday, October 29, 2013

Time	Program
09:00 – 09:30	Registration
09:30 – 09:40	Opening Remarks Dr. Yuhyun Park (Nanyang Technological University, Singapore)
Session INNOVATION (Modulators: Prof. Jung-Il Jin)	
09:40 – 10:00	Lecture 6 From Basic Science to Advances in Antiinfective Medicine Professor Ada Yonath (Weizmann Institute of Science, Israel / 2009 Nobel Prize in Chemistry)
10:00 – 10:20	Lecture 7 Inorganic Graphene Analogues and Related Materials Professor C.N.R. Rao (Jawaharlal Nehru Centre for Advanced Scientific Research, India)
10:20 – 10:40	Lecture 8 Development of Cancer Immunotherapy Utilizing Cross-disciplinary Tools in Biomedical Engineering Professor Kyung-Mi Lee (Korea University, Republic of Korea)
10:40 – 11:30	Q&A: Ada Yonath, C.N.R. Rao, Kyung-Mi Lee
11:30 – 13:30	Lunch
Session FUTURE (Modulator: Prof. Seung-Joon Jeon)	
13:30 – 13:50	Lecture 9 Revisiting Old Knowledge in an RNA World Dr. Alexandra Henrion-Caude (National Institute of Health and Medical Research, France)
13:50 – 14:10	Lecture 10 Multiscale Modeling of Complex Biological Systems and Processes Dr. Arie Warshel (University of Southern California, USA / 2013 Nobel Prize in Chemistry)
14:10 – 14:50	Q&A: Alexandra Henrion-Caude and Arie Warshel
14:50 – 15:20	Refreshment Break
15:20 – 16:20	Panel Talk Concert Sciences, Culture and My Story Chair: Professor Bengt Nordén, Dr. Yuhyun Park Panelists: Ada Yonath, Alexandra Henrion-Caude, Jennie Walldén, Kyung-Mi Lee Four High School Students
16:20 – 16:30	Closing Remarks Bengt Nordén (Chairman, Molecular Frontiers Foundation) Byoung-Chul Kim (President, Korea University) Bertil Andersson (President, Nanyang Technological University)
16:30	End of Molecular Frontiers Symposium 2013

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Bengt Nördén (Chalmers University of Technology, Sweden)

- • •
- '07 Head, Research Council
Nanyang Technological University, Singapore
- '06 Founder & Head, Molecular Frontiers Foundation
- '91 Member, the Royal Swedish Academy of Sciences

- • •
- '09 Nobel Prize in Chemistry
- '08 L'Oréal Award for European Woman in
Life Science
- '07 Wolf Prize in Chemistry



(Weizmann Institute of Science, Israel) **Ada Yonath**



C.N.R. Rao (JNCASR, India)

- • •
- '09 Scientific Advisory Council to the Prime
Minister
- '05 Dan David Prize in Future Science

- • •
- '13 Wolf Prize in Chemistry
- '11 US National Medal of Technology & Innovation
- '08 Millennium Prize



(Massachusetts Institute of Technology, USA) **Robert Langer**

- • •
- '11 President, Nanyang Technological University
- '04-09
Vice President of the European Research
Advisory Board
- '97 Chair, Nobel Committee for Chemistry



(Nanyang Technological University, Singapore) **Bertil Andersson**



Arieh Warshel (University of Southern California, USA)

- • •
- '13 Nobel Prize in Chemistry
- '12 Elected Fellow of the AAAS
- '09 Elected Member, National Academy of
Sciences
- '03 The Tolman Medal

- • •
- '93 Nobel Prize in Physiology or Medicine



(New England Biolabs, USA) **Richard Roberts**



Kyung-Mi Lee (Korea University, Republic of Korea)

- • •
- '11 EMM Journal Achievement Award
- '08 Ilcheon Young Scientist Award
- '95 Charles Higgins Award for Physiologists

- • •
- '13 Eisenhower Multi-Nation Program fellow
- '99-Present
Inserm Tenure Award
- '97 Nestlé Foundation Prize for Physiology



(Inserm, France) **Alexandra Henrion-Caude**



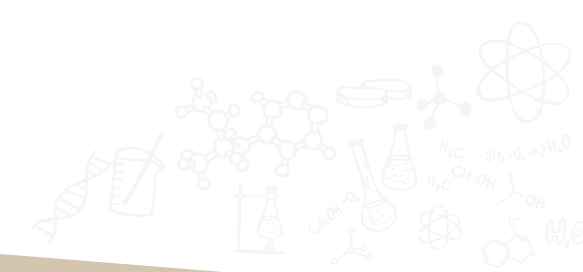
Andrew Fire (Stanford University, USA)

- • •
- '06 Nobel Prize in Physiology or Medicine
- '05 Gairdner Foundation International Award
- '03 National Academy of Sciences Award in Molecular
Biology

- • •
- '13 Winner, Master Chef, Sweden



Jennie Walldén (Sweden)





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