



Mahidol University Wisdom of the Land

Inspired by the Nobel Laureates: Typical Event-based Inspirational Motivation in Science Education

Mr. Sethavudh Kaewviset
Foreign Relations Officer
Office of International Cooperation
Faculty of Science, Mahidol University



Introduction

Faculty of Science

Mahidol University



Top 10 Medical School in Asia by QS World Ranking 2015

Asian Ranking	World Ranking*	University	Country
1	20	The University of Tokyo	Japan
2	21	National University of Singapore (NUS)	Singapore
3	28	University of Hong Kong	Hong Kong
4	41	National Taiwan University (NTU)	Taiwan
5	46	Kyoto University	Japan
6	48	Seoul National University	South Korea
7	61	Mahidol University	Thailand
8	64	Osaka University	Japan
9	65	Peking University	China
10	69	The Chinese University of Hong Kong	Hong Kong

*QS World University Ranking by Subject 2015 - Medicine (Ref: Topuniversity)

First (1st) rank of Thailand's universities (Medicine)

First (1st) rank of Thailand universities (Biological science)

Seventh (7th) rank of Asia's universities (Medicine)



Faculty of Science (SC) fully contributed to make this ranking become outstanding

 **Basic & Applied Science**

 **Life Science**

 **Multidisciplinary Science**



Mahidol University Wisdom of the Land



Core Value : Faculty of Science, MU

“Research Leadership and Teaching Excellence”



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Teaching + Learning





Departments

Office of the Dean

Department of Anatomy

Department of Biochemistry

Department of Biology

Department of Biotechnology

Department of Chemistry

Department of Mathematics

Department of Microbiology

Department of Pathobiology

Department of Pharmacology

Department of Physics

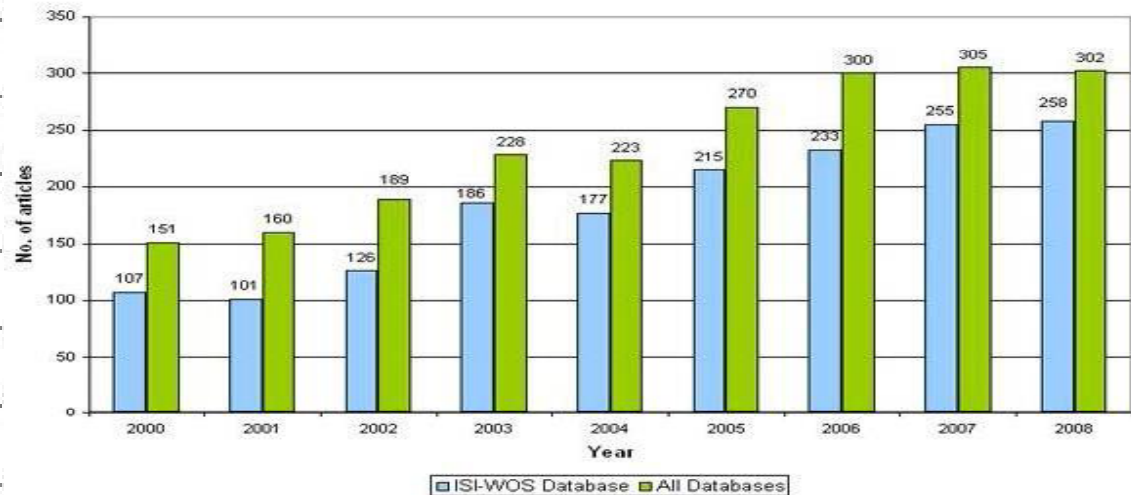
Department of Physiology

Department of Plant Science

Research & Publication



Faculty of Science International Publications Year 2000-2008





Thailand is a developing country!!!



Science and Technology are major factors to serve the country's needs...

Beyond normal classroom & Lab



**What have been
pushing for over 50
years for science
study?**



Special Lectures of Nobel Laureates

at Faculty of Science, Mahidol University



1968: Professor Konrad E. Bloch
(The Nobel Prize in Physiology or Medicine 1964)



1968 : Professor Feodor Lynen
The Nobel Prize in Physiology or Medicine 1964



2002: Professor William N. Lipscomb
(The Nobel Prize in Chemistry 1976)



2002: Professor Roald Hoffmann
(The Nobel Prize in Chemistry 1981)



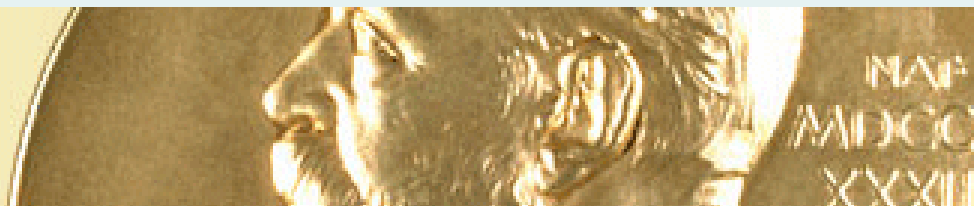
2003 Professor Bert Sakmann
(The Nobel Prize in Physiology or Medicine 1991)





Special Lectures of Nobel Laureates

at Faculty of Science, Mahidol University



2004: Professor Robert Huber, F.R.S.
(The Nobel Prize in Chemistry 1988)



2004: Professor Kurt Wüthrich
(The Nobel Prize in Chemistry 2002)



2004: Professor Yuan T. Lee
(The Nobel Prize in Chemistry 1986)



2005: Professor Jean-Marie Lehn
(The Nobel Prize in Chemistry 1987)



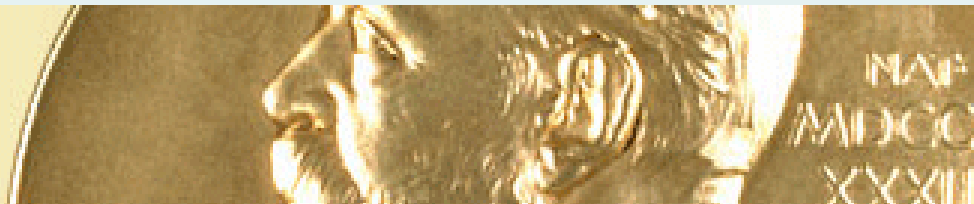
2005 Professor Peter Agre
(The Nobel Prize in Chemistry 2003)





Special Lectures of Nobel Laureates

at Faculty of Science, Mahidol University



2005: Professor Jerome I. Friedman
(The Nobel Prize in Physics 1990)



2005: Professor Aaron Ciechanover
(The Nobel Prize in Chemistry 2004)



2005: Professor Yuan T. Lee
(The Nobel Prize in Chemistry 1986)



2006: Professor Aaron Ciechanover
(The Nobel Prize in Chemistry 2004)



2008 Professor Aaron Ciechanover
(The Nobel Prize in Chemistry 2004)





Special Lectures of **Nobel Laureates**

at Faculty of Science, Mahidol University



2008: Professor David J. Gross
(The Nobel Prize in Physics 2004)



2008: Professor Roger D. Kornberg
(The Nobel Prize in Chemistry 2006)



2010: Professor Françoise Barré-Sinoussi
(The Nobel Prize in Physiology or Medicine 2008)



2011: Professor Robert Huber, F.R.S.
(The Nobel Prize in Chemistry 1988)





Special Lectures of Nobel Laureates

at Faculty of Science, Mahidol University



- Normal classrom lecture
- Speical lecture
- Classroom question & answer



- How does an inspiration?
- To promote multiparticipants
- School student attendants are targetted
- How to encourage active participation?



**What we have done as
new approaches
inspirational
motivation in science
education?**



**Inspired by science
hero?**



**Creating new learning
approaches ?**



**Targeting on multi-level
of attendants?**



Process of event-based learning approach



Information
Dissemination

Posters, brochures, leaflets, emails, webpage, online registration, invitation letters (some recruited via partnerships)

Set A :Lunch talk + close-interview, group discussions (2012)

Set B: Special lecture + research exhibition-based learning (2014)



Satisfaction evaluation by Likert-scale questionnaire with 5 rating scales

- 5 = Excellent
- 4 = Very Good
- 3 = Good
- 2 = Adequate
- 1 = Poor



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Event announcement



The Amazing Ribosome and Its Tiny Enemies
by
Prof. Ada Yonath
Nobel Laureate in Chemistry 2009
Special Lecture to Celebrate the International Year of Crystallography

01.00 – 01.30 pm Registration
01.30 – 01.45 pm Video presentation of Mahidol University
01.45 – 02.00 pm - Welcome address by Professor Skorn Mongkolkeu, Dean of Faculty of Science, Mahidol University
- Presentation of tokens of appreciation to the Nobel Laureate
- Group photo session of executive delegations
- Introduction of Professor Ada Yonath
02.00 – 03.00 pm - Nobel Laureate Lecture, entitled "the amazing ribosome and its tiny enemies" by Professor Ada Yonath - the 2009 Nobel Laureate in Chemistry
- Q & A session *Ada Yonath*

Thursday August 7th, 2014
2.00-3.00 p.m.

Venue L01 room, Lecture building,
Faculty of Science, Mahidol University,
Rama VI Road, Bangkok

Welcome

Special Lecture
"How Science Changes Our Lives"
By Prof. Douglas Osheroff, 1996 Nobel Laureate for Physics
Organized by Faculty of Science, Mahidol University
and The International Peace Foundation

On December 12th, 2012
L.01 (14.00-15.30 pm.)

"The amazing ribosome and its tiny enemies"
By Prof. Ada Yonath, 2009 Nobel Laureate in Chemistry
August 7th, 2014
To Celebrate the International Year of Crystallography
at 2.00-3.00 pm. at L01 room, Lecture building, Faculty of Science, Mahidol University, Bangkok



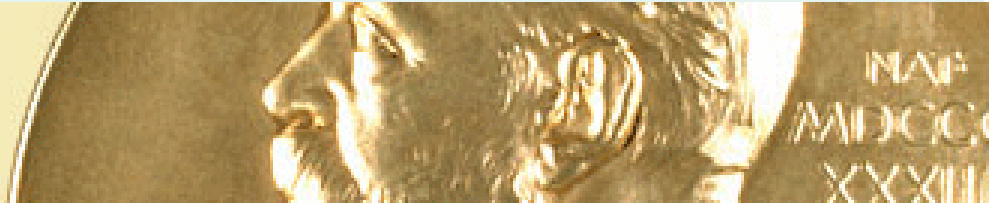
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New approach method (2012)



Special Lectures of **Nobel Laureates**

at Faculty of Science, Mahidol University



December 12, 2012

Prof. Douglas D. Osheroff

The Nobel Prize in Physics 1996)

Topic : How Science Changes Our Lives

Lunch talk + Close-interview + Group discussions





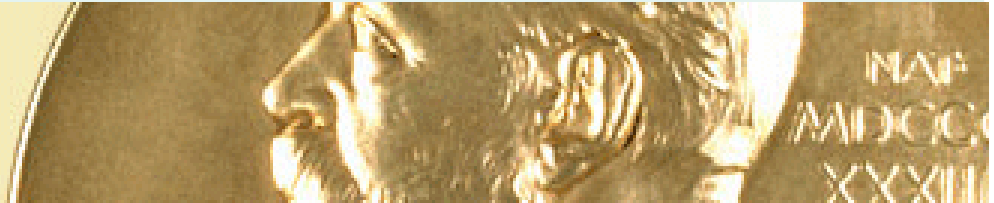
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New approach method (2012)



Special Lectures of
Nobel Laureates

at Faculty of Science, Mahidol University



Lunch talk + Close-interview + Group discussions



Co-Sponsors / Partnership Utilization

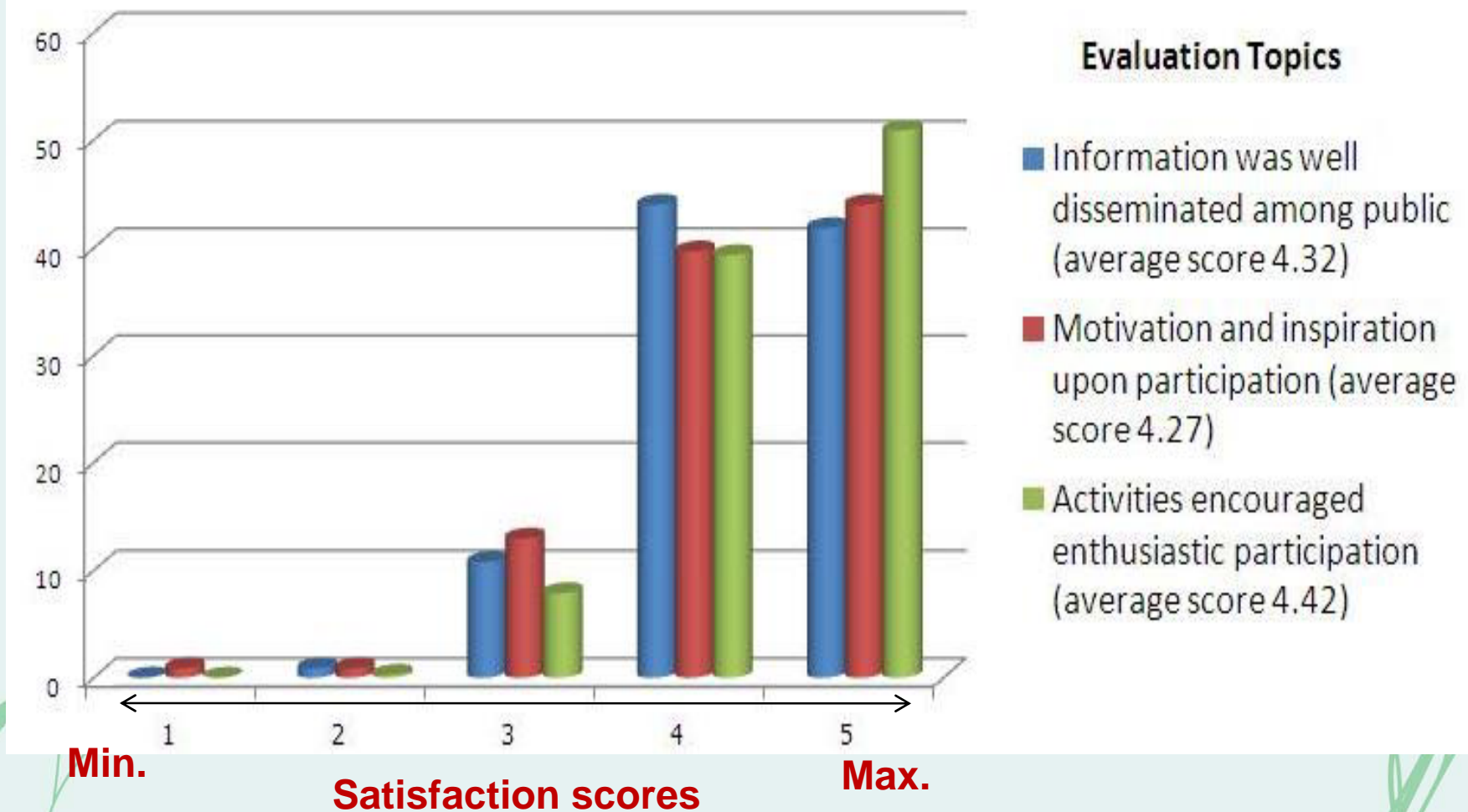
- Faculty of Science, Mahidol University (MUSC)
- Office of Higher Education Commission (OHEC)
- International Peace Foundation (IPF)





Evaluation Results: Set A (2012)

Evaluated participants (%)





Attendance

Set A :Lunch talk + close-interview, group-based discussions

339 Participants

<input checked="" type="checkbox"/> Science staff members	=	20
<input checked="" type="checkbox"/> Science faculty students	=	178
<input checked="" type="checkbox"/> Mahidol University students	=	14
<input checked="" type="checkbox"/> Other university students	=	26
<input checked="" type="checkbox"/> Science school students	=	65
<input checked="" type="checkbox"/> General public	=	36



Close-interview and group discussion are still limited for some selected school students.



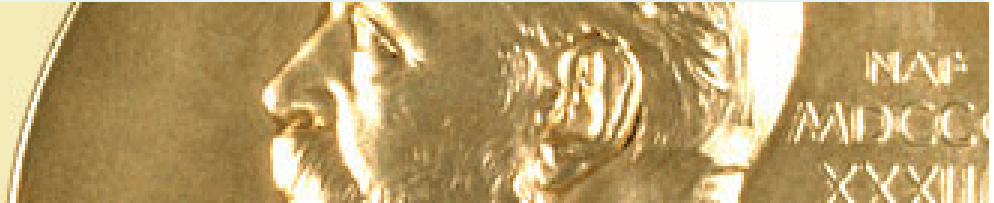
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New approach method in 2014



Special Lectures of Nobel Laureates

at Faculty of Science, Mahidol University



August, 2014

Prof. Ana Yonath

(The Nobel Prize in Chemistry 2009)

Topic : The Amazing Ribosome and its Tiny Enemies

100 years of
Crystallography
Celebration

Special lecture + Research-based exhibition learning



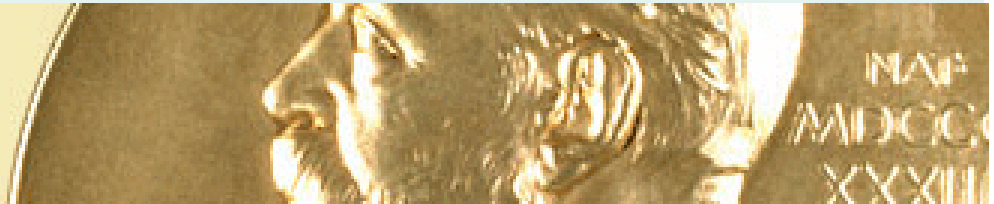


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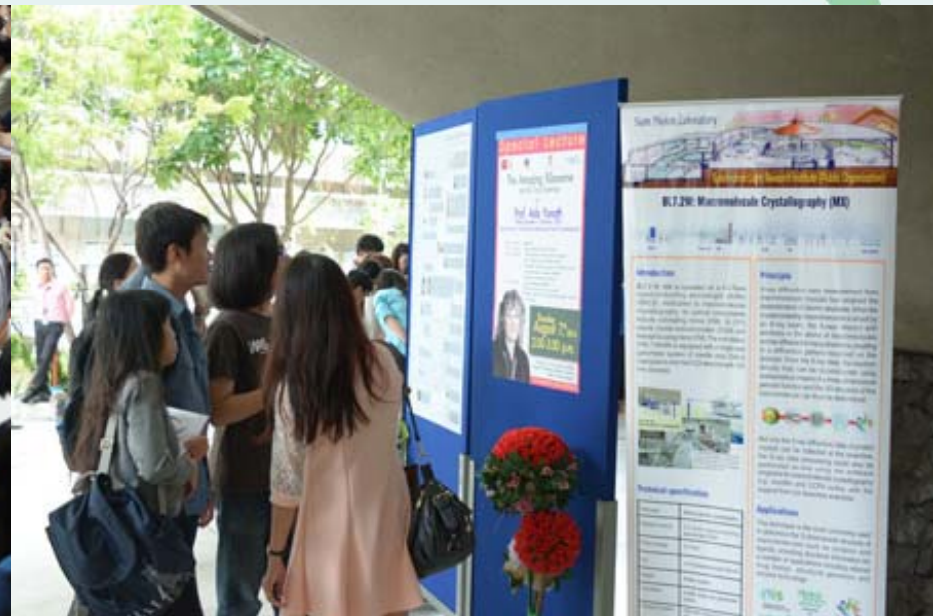
New approach method (2014)



Special Lectures of
Nobel Laureates
at Faculty of Science, Mahidol University



Special lecture + Research-based exhibition learning



Co-Sponsor / Partnership Utilization

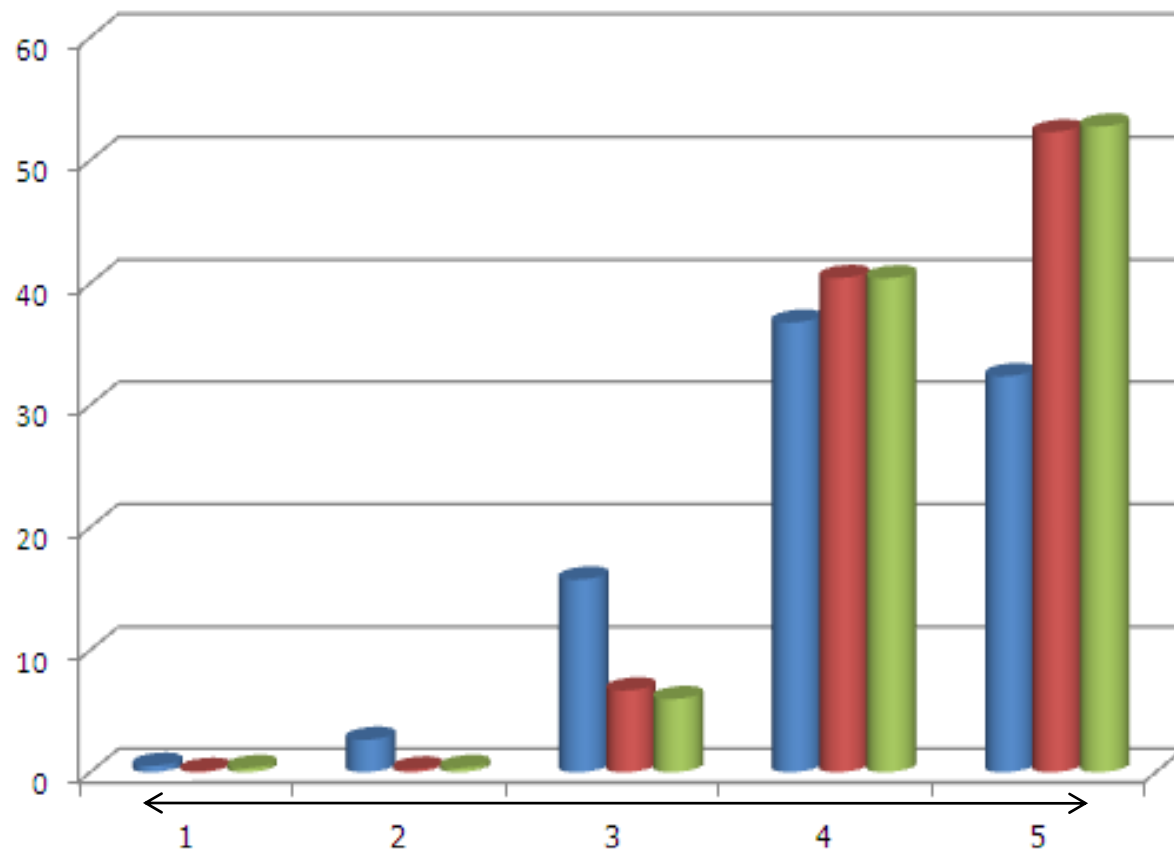
- Faculty of Science, Mahidol University (MUSC)
- National Science and Technology Development Agency (NSTDA)
- Protein Society of Thailand (PST)





Evaluation Results: Set B (2014)

Evaluated participants (%)



Evaluation Topics

- Information was well disseminated among public (average score 4.11)
- Motivation and inspiration upon participation (average score 4.45)
- Activities encouraged enthusiastic participation (average score 4.45)

Min.

Satisfaction scores

Max.



Attendance

Set B :Special lecture + Research-based exhibition learning

410 Participants

<input checked="" type="checkbox"/> Science staff members	= 20
<input checked="" type="checkbox"/> Science faculty students	= 130
<input checked="" type="checkbox"/> Mahidol University students	= 163
<input checked="" type="checkbox"/> Mahidol University staff	= 7
<input checked="" type="checkbox"/> Other university students	= 41
<input checked="" type="checkbox"/> Other university lecturers	= 3
<input checked="" type="checkbox"/> Science school students	= 31
<input checked="" type="checkbox"/> General public	= 15



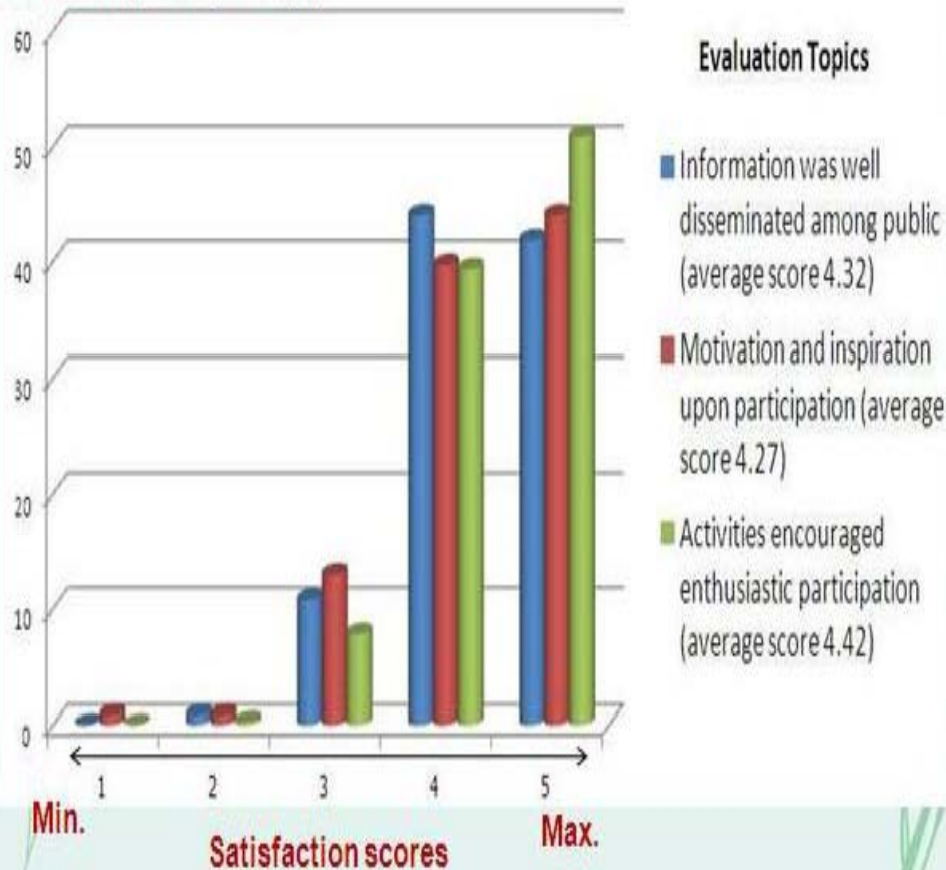
**What we learned from
the new approach
inspiration motivation
methods in science
education?**



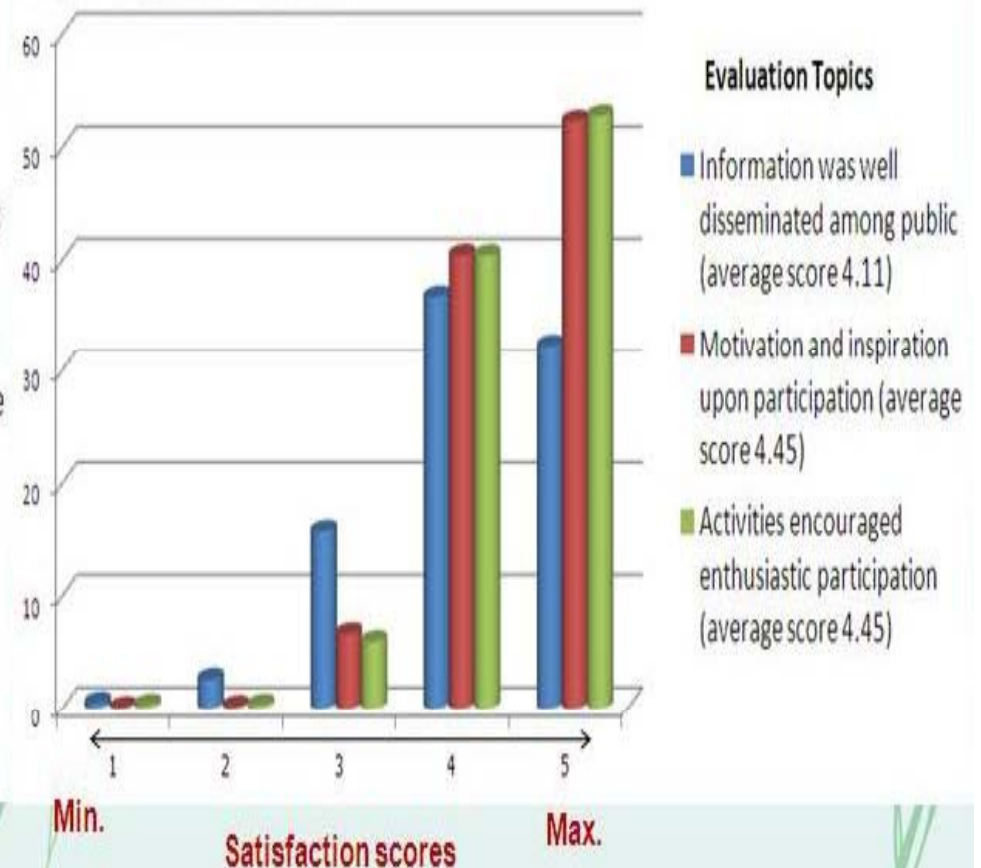
Satisfaction from the two events

Evaluation Results: Set A (2012) Evaluation Results: Set B (2014)

Evaluated participants (%)



Evaluated participants (%)





Multi-level of Attendants

Set A :Lunch talk +
close-interview, group-
based discussions
(2012)

339 Participants

From Science secondary schools (both students & teachers) + undergraduate student from MUSC participated in lunch talk and group-based interview and discussion

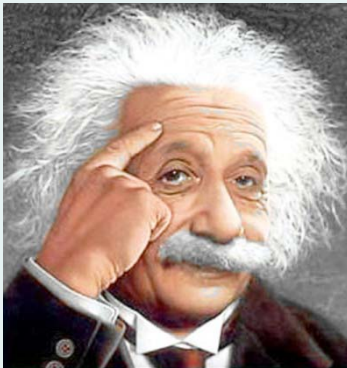
Set B: Special lecture +
research exhibition-based
learning (2014)

410 Participants

From MUSC lecturers, researchers and students, Mahidol University lecturer, students and staff, other university lectures and students, secondary science school students and general people



**“Genius is one percent inspiration and ninety-nine percent is perspiration”
(Thomas A. Edison)**



**“Imagination is more important than knowledge. Knowledge is limited, Imagination encircles the world”
(Albert Einstein)**





Limitation & Recommendation

**Immediate
inspirational
motivation**



**It was suggested
to monitor the
key important
factors such as
no. of science
students enrolled
in BSc, MSc and
PhD at MUSC**



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Acknowledgements

- Faculty of Science, Mahidol University (MUSC)
- Office of Higher Education Commission (OHEC), Thailand's Ministry of Education (MOE)
- Protein Society of Thailand (PST)
- International Peace Foundation (IPF)
- National Science and Technology Development Agency (NSTDA)

Working Group

Office of International Cooperation, Faculty of Science, MU

Ms. Nongnuch Prasomkhum, Head

Mr. Sethavudh Kaewviset

Ms. Wannapa Somvong

Ms. Suthiluk Nomethanong

Deputy Dean for Academic and International Cooperation

Dr. Kanyaratt Supaibulwatana

Office of the Dean

Technical supports and staff assistances

