"OUTCOME OF STEM EDUCATION AND RESEARCH PROGRAM"

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STEM ER SYMPOSIUM, AMU, Aligarh, India
April 1, 2017
Support: USIEF, OSU, OSC, AMU
"THE STEM-FACULTY PROJECT: TRAINING THE NEXT GENERATION OF STEM FACULTY AT HIGHER EDUCATIONAL INSTITUTIONS IN INDIA"
• Project grew interest in many: Presentations
- Public events with educators in Delhi
- Universities: Delhi, Kashmir, Jammu, Mata Vishnu
- Research Institutes: TIFR, IIA, Science and Technology- Pune, Central Institute of Fisheries Education
- Private institutes: Jain Univ, Indraprastha Institute of Information Technology, Thakur’s College of Engineering
MOA BETWEEN OSU AND AMU, Signed in Nov 2013

- Signed at AMU, 2013 (OSU: William Brustein, Pat Osmer, David Williams, AMU: Pro-VC, VC)
- Dual Degree Program:
- AMU: OSU-AMU Center of Excellence: Smart Class-rooms, other facilities

http://www.astronomy.ohio-state.edu/~nahar/obama-singh.html
- http://www.astronomy.ohio-state.edu/~pradhan/Stem/main.html
Inauguration of OSU-AMU STEM ER CENTER OF EXCELLENCE, Wildlife Center, Sep 2013

Shared:
- Smart class-room for distant learning
- Video conference room, 1 faculty office
- Fellows took classes in Summer 2014 through Distant e-learning
OSU introduced a new degree, MEd, for the STEM FACULTY TRAINING PROGRAM in December 2013

- **GOAL**: Train postgraduate students to world-class teaching skill and to lead in advance research in Indian Universities

- We developed a new curriculum for a 2 years dual-degree MEd-STEM program - customized for Indian universities

- CAA approved the curriculum in December 2013
OSU introduced a new degree, MEd, for the STEM FACULTY TRAINING PROGRAM in December 2013

- **Enrollment Credits:**
- **Courses on Teaching 50%**
  i) Courses for high school students were upgraded for undergraduates
  ii) Formulated for minimum course work, but with more experience based direct study
- **Postgraduate Research in STEM discipline 50%**
  i) A chapter in the Ph.D. thesis
  ii) OSU advisor is an official co-advisor of the Ph.D.
Most attractive part for most of the institutions
• Selected 4 AMU postgraduate students, 2 males and 2 females,

- 1. Asim Rizvi (Male), Biochemistry: Prof. Imrana Naseem - OSU Radiology, Advisor: Prof Qien Wang
THE FIRST BATCH OF STEM ER FELLOWS

- 2. Hala (Female), Physics, Advisor: Prof. Tauheed Ahmed
   - OSU Astronomy & NIST, Advisor: Prof Sultana Nahar
- 3. Malik Azeem (Male), Zoology, Advisor: Prof. Afzal
   - OSU Molecular Genetics, Advisor: Prof Guramrit Singh
- 4. Nida Rehmani (Female), Biochemistry, Advisor: Prof. Hadi
   OSU Radiology, Advisor: Prof Altaf Wani
The fellows graduated with the MED-STEM degree in Spring 2016:

- Dr. Asim Rizvi, received his Ph.D. degree at AMU, 2016
- Dr. Hala, received his Ph.D. degree at AMU, 2016
- Nida Rehmani, Ph.D. thesis under review, 2017
• Selected 4 AMU postgraduate students, 2 males and 2 females,
- 1. Parvez Alam (Male), Biotechnology: Prof. Rizwan Khan
  - OSU Chemistry, Advisor: Prof Chirstopher Jaroniecn
- 2. Sabiha Parveen (Female), Chemistry, Advisor: Prof. Farukh Arjmand
THE SECOND BATCH OF STEM ER FELLOWS

- OSU Chemistry, Advisor: Prof James Cowan


- OSU Physics, Advisor: Prof Ronald Kawakami

- 4. Tqaeeer Khan (Male), Mathematics, Advisor: Prof. Mur-saleen

OSU Mathematics, Advisor: Prof. Jan Lang
THE SECOND BATCH: COMPLETION OF RESEARCH PROJECTS

- The fellows completed their research projects, Feb 2017
- Parvez Alam, to submit Ph.D. thesis, April 2017
- Sabiha Parveen, to submit Ph.D. thesis, August 2017
- Taqseer Khan, Ph.D. thesis under review, 2017
ALIGARH MUSLIM UNIVERSITY
ALIGARH

Inauguration of
ALIGARH NANO-IV INTERNATIONAL 2014
International Conference on Nanoscience & Nanotechnology

Co-Sponsored by:
OSU (USA) - AMU STEM EDUCATION & RESEARCH CENTER
Under Indo-US Collaborative Obama Singh 21st century knowledge initiative awards
DRDO, DST - Nano Mission, CSIR-CEIRL, Pilani,
CST-U.P., UGC (SAP - DRS I), TEQIP-II, ICMR, Macwin India

Date: March 8, 2014
Time: 9:00 A.M.

Venue:
KENNEDY HALL AUDITORIUM

Centre of Excellence in Materials Science (Nanomaterials), CST (UP)
Department of Applied Physics
Zakir Husain College of Engineering & Technology
Conference: PROJECT HELD THE FIRST INTERNA-TIONAL CONFERENCE ON STEM ER JOINTLY WITH ALIGARH NANO-V INTERNATIONAL 2016

The Aligarh Muslim University, Aligarh, India

announces

International Conference

On Nanotechnology (ALIGARH NANO-V) and STEM-Education and Research (STEM CON-16) (March 12-15, 2016)

In partnership with The Ohio State University (OSU) in Ohio, USA and CHERI Plani, the Aligarh Muslim University (AMU) is organizing an International Conference on Nanotechnology and STEM-Education (Science, Technology, Engineering, and Mathematics-Education and Research) during March 12-15, 2016. More than fifty foreign delegates are expected to attend. The first two days (March 12 & 13, 2016) would be devoted to Nanotechnology and its applications, the next two days (March 14 & 15, 2016) to on recent advances and methods to improve the teaching and research standards in STEM subjects in universities in India and other developing countries.

In a pilot project (STEM-ER) funded by the US-India Education Foundation (USIEF) under the title ‘21st Century Knowledge Initiative’, OSU and AMU have started a two-year dual PhD and Masters of Education (Med-STEM) degree program.

AMU PhD research students, selected under very strict criteria have already completed courses of the first academic year at OSU and returned to AMU to continue the second year for the dual PhD-Med (STEM) degrees. The aim of the project is to create world class faculty for teaching and research at Indian Universities.

The Centre of Excellence in Materials Science (Nanomaterials), at AMU, supported by Council of Science and Technology (CST) Uttar Pradesh is a leading national centre for Nanotechnology research with several patents (published) and awards to its credit. The Centre successfully organized four conferences in past with active participation of foreign and national experts on Nanotechnology.

Nanotechnology (ALIGARH NANO-V)

1. Prof. Alim H. Naqvi (Convener) E-mail: aslamnaqvi@yahoo.com, Mobile No.: +91-9219505388
2. Prof. Amer Azam (Convener and Chairperson Applied Physics Deptt.) E-mail: azam2288@gmail.com, Mobile No.: +91-9319788742
3. Prof. Parvez Qamar Razvi (Co-convener) E-mail: razvi@rediffmail.com, Mobile No.: +91-9412328718
4. Prof. Jamal Akhtar (Co-convener) E-mail: jamil@ceeriernet.in, Mobile No.: +91-9829075297
5. Dr. Muhammad Khan (Co-convener) E-mail: shkanapdi@gmail.com, Mobile No.: +91-9385210751
6. Dr. Wamiq Ali Khan (Organizing Secretary) E-mail: wasiam@gmail.com, Mobile No.: +91-9875327176
7. Dr. S.Z. Ashraf (Joint Organizing Secretary) E-mail: ssaashraf@rediffmail.com, Mobile No.: +91-8171289819
8. Dr. Raj Singh (Joint Organizing Secretary) E-mail: rajviro@gmail.com, Mobile No.: +91-7417311153
9. Dr. Azra Parveen (Joint Organizing Secretary) E-mail: azrap2001@gmail.com
10. Dr. S. Asad Ali (Joint Organizing Secretary) E-mail: asadasyyed@gmail.com, Mobile No.: +91-9412537464
11. Dr. Zaheer Hasan (Joint Organizing Secretary) E-mail: zafranmu@gmail.com, Mobile No.: +91-9456096093

Nanotechnology Themes

- Synthesis and characterization techniques of nanomaterials
- Nanotechnology for harnessed energy
- Nanomaterials in food, agriculture and water purification
- Nanoparticles for engineering materials
- Nanoparticles for photodynamic cancer therapies
- Nanoparticles based drug targeting
- Nanomedicine and healthcare
- Nanoelectronics and nanosensors
- Bionanotechnology
- Nanocosmetics and house hold products
- Graphene and its nanocomposites
- Organic and inorganic nanocomposites

Key Dates

- Last date of Abstract Submission: January 1, 2016
- Acceptance notification: January 15, 2016
- Last date for early bird registration: February 1, 2016

Registration Fees

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<tr>
<th>Type of Visitor</th>
<th>Early Bird (Upto Feb. 1, 2016)</th>
<th>Late Entry (After Feb. 1, 2016)</th>
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<tr>
<td>Indian Delegates</td>
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<td>Rs. 10000/-</td>
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<tr>
<td>Indian Delegates</td>
<td>Rs. 5000/-</td>
<td>Rs. 9000/-</td>
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<td>Foreign Delegates</td>
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<td>Rs. 1600/-</td>
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<td>Rs. 1600/-</td>
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<tr>
<td>Industry</td>
<td>Rs. 11000/-</td>
<td>Rs. 11000/-</td>
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Prizes: Best Oral and BestPoster presentations

For more details please visit: www.aligarhnano.com www.astronomy.ohio-state.edu/~pradhan/ stem/main.html Contact us at: aligarhnano@gmail.com

Under Patronage

Lt. Gen. Zameer Uddin Shah Vice Chancellor, AMU

Brigd. S. Ahmed Ali Pro. Vice Chancellor, AMU

STEM-ER (STEMCON-16)

1. Prof. Anil Pradhan, Ohio State University, USA (Convener) E-mail: pradhan.1@osu.edu, Mobile No.: 1-614-292-3580
2. Prof. Nesar Ahmad, AMU, Aligarh (Convener) E-mail: nesar.ahmad@gmail.com, Mobile No.: +91-9411878942
3. Prof. Nazar N. Nahar, Ohio State University, USA (Convener) E-mail: nahar.1@osu.edu, Mobile No.: 1-614-292-1888
4. Prof. Karen Irving, Ohio State University, USA (Co-convener) E-mail: kirving.1@osu.edu, Mobile No.: 1-614-292-1229
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6. Prof. Afzal Wani, Ohio State University, USA (Co-convener) E-mail: wani.2@osu.edu, Mobile No: 1-614-292-9015
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Support: "US-India Education Foundation, AMU"
INTERNATIONAL CONFERENCE ON STEM ER, 2016

ALIGARH NANO - V & STEMCON - 16
International Conference on Nanoscience and Nanotechnology

March 12-15, 2016

Being Organized by
Centre of Excellence in Materials Science (Nanomaterials)
Department of Applied Physics, Aligarh Muslim University, Aligarh

In Collaboration
The Ohio State University, USA
Dept. of Saidla & Dr. A. K. Tibbya College, Aligarh Muslim University

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Dept. of Saidla & Dr. A. K. Tibbya College, Aligarh Muslim University
Research presentation at OSU: ”On the breast and lung cancers in rats and immunity development using vitamin D.”

- Recipient of Dr. Nurul Islam prize 2016 under Indian National Academy in Biomedicine
- Guest teacher at women’s college
- CISR Fellow 2017
Research presentation at OSU: ”Calculation of collision strength for electron impact excitation using relativistic Breit-Pauli R-matrix (BPRM) method for Si IX”
- "Spectral and structural studies of low charged ions of Selenium (Se II-Se V) with the help of semiempirical quasi-relativistic Hartree-Fock calculations using Cowan computer package”
- "High-resolution Fourier transform spectrometry” in collaboration with Dr. G. Nave of National Institute of Standard and Technology, Maryland-US
One remark (by Sultana Nahar):
Achieved the most in research: i) study of plasma diagnostics and electron-impact collision, ii) Measurements of lines at NIST
- Recipient of IAEA award for workshop at ICTP, Italy
- Staning offer from NIST at USA
- Guest teacher in Physics and Warden at IGH
Research presentation at OSU: "Study of RNA protein complexes responsible for modulating the expression of genes"

One Remark (by OSU Advisor Guramrit Singh):
Malik Azeem is the STAR of the STEM ER Program
- Had made potential discovery
Research presentation at OSU: "Copper dependent enhancement of DNA damage and X-ray induction by L-DOPA and Dopamine: Putative neurotoxic mechanism"

One Remark by OSU Advisor Altaf Wani:
Stubborn little thing, but has learnt a lot

Research presentation at OSU: "Effect of copper binding on human protein"

Remark by OSU Advisor Chris:
"He has found a potential discovery of protein reaction to Cu "
Research presentation at OSU: "Design and Synthesis of chiral R/S-metallo drug: Enantiomeric discrimination with CT-DNA, selective cleavage of G- Quadruplex telomeric DNA and kinetic studies of cleavage of puC19 DNA"

Remark by OSU Advisor Jimmy: "She is a quick learner, has found prospective cancer drug using Cu complexes"
Research presentation at OSU: "Growth of TiO2 thin films through MBE and study the optical and magnetic properties"

Remark by OSU Advisor Ronald: "She has learnt a lot, unusual in such a short time. ... Her findings with TiO2 have not been studied before and plan for a publication"

- Results are presented at an American Physical Society meeting
OSU RESEARCH IN PHYSICS: TAQSEER KHAN

Remark by OSU Advisor Jan: "He has opened the door to paradise - he can enrich the field of s-numbers of Volterra operators in approximation theory"

- Presented results at Harvard University Math conference, 2016
STEM ER Project: Teaching Research Oriented Condensed course, AMU, 2014

Course Banner & Certificate ceremony

OBAMA-SINGH 21st Century Knowledge Initiative

A short term course on

RADIATION PHYSICS: ASTRONOMY TO BIOMEDICINE

by

Prof. Sultana N. Nahar and Prof. Anil K. Pradhan
(Ohio-State University, USA)

February 10-March 8, 2014

Conference Hall, Department of Physics,
Aligarh Muslim University, Aligarh
University of Kashmir joins the Indo-US consortium

• Vice Chancellor Prof. Andrabi and Dean of Academic Affairs Prof Wani
• Appreciation of Minister of Higher Education, Dr. Khaled Al-Anqari, Deputy Minister: ”Super super good” program