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Ronald E. McNair
Postbaccalaureate Achievement
Program

July 30, 2015

Welcome to New Jersey Institute of Technology's Eighth International Undergraduate Summer Research Symposium. It is indeed an honor and a pleasure to be part of the 2015 International Undergraduate Summer Research Symposium and join with Dr. Durgamadhab Misra as well as other individuals that contribute to the success of the event.

The 2015 Research Symposium is the Eighth such event showcasing the research efforts of undergraduate students from the NJIT Ronald E. McNair Program, students from Heritage Institute of Technology, India as well as students from other programs. One hundred thirty eight undergraduate students from other programs along with the HIT and McNair students will present a total of one hundred and seventeen electronic posters describing their research accomplishments under the guidance of fifty nine NJIT faculty. This research symposium is the largest such event ever held at NJIT. We are extremely proud of the research efforts of all these students, the quality of the research presentations and the strong support of the NJIT faculty and staff in contributing to the success of today's event.

Angelo J. Perna, PhD

Professor of Chemical Engineering

angelo J. Lema

& Environmental Engineering

And

McNair Program Director



New Jersey Institute of Technology

HELEN AND JOHN C. HARTMANN DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

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July 30, 2015

It is an honor and a pleasure that undergraduate engineering students from Heritage Institute of Technology (HIT), Kolkata, India are participating at the Eighth International Summer Research Symposium of New Jersey Institute of Technology along with students from several other summer research programs including NJIT's Ronald E. McNair Program. This gives the HIT students an opportunity to present their research accomplishments that they have completed under the supervision of NJIT faculty.

The Summer Research Symposium became International Summer Research Symposium eight years ago when the HIT students participated in the annual summer research symposium for the first time.

HIT and NJIT have established an inter-institutional cooperation since 2008 where every summer several talented undergraduate students from HIT, Kolkata, India attend NJIT and conduct research with NJIT faculty members for six-week summer research program. The purpose of this exchange is to promote international understanding, scholarly collaboration, cultural interaction and friendship by supporting educational professional and cultural activities among faculty and students of the two institutions.

The outstanding achievement of the students would not have been possible without the time and effort of NJIT faculty mentors. Staff members of several administrative offices including Office of International Students, Budget Office, Physical Plant, McNair Program and ECE Department contributed significantly to the success of the HIT-NJIT Summer Research Program.

We are proud of the research efforts of all the students and wish them all the best for their presentation at the Eighth International Summer Research Symposium of 2015 and for the future.

Sincerely,

Durgamadhab Misra, PhD

Symposium Co-Chair and HIT-NJIT Program Director Professor and Associate Chair for Graduate Programs Department of Electrical and Computer Engineering

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Ronald E. McNair Postbaccalaureate Achievement Program



L to R:

Deliris Diaz Leila Wooten Pamela Herrera

Jacqueline Moreno Olivia Saez Miguel Garcia

Shahan Uzzaman Carlos Morillo Walter Cevallos

Mathew Lopez Ariel Aranda

Ariel Aranda (NJIT) - Civil Engineering

Research: Sail Testing Methods **Advisor:** Dr. Mohamed Mahgoub

Walter Cevallos (NJIT) - Civil Engineering

Research: Rapid Rehabilitation of Concrete Structures

Advisor: Dr. Jay Meegoda

Deliris Diaz (NJIT) – Applied Physics

Research: Analyzing Flexural rigidity of Microtubules

Advisor: Dr. Camelia Prodan

Miguel Garcia (NJIT) - Mechanical Engineering

Research: Mechanisms in Creo **Advisor:** Professor Balraj Mani

Pamela Herrera (NJIT) - Biomedical Engineering

Research: Dental Bone Regeneration

Advisor: Dr. Bruno Mantilla & Dr. George Collins

Mathew Lopez (NJIT) - Electrical & Computer Engineering

Research: Parkinson's Movement Monitor

Advisor: Dr. Roberto Rojas - Cessa

Jacqueline Moreno (NJIT) - Chemical Engineering

Research: Nano-paricles on Films

Advisor: Dr. Ecevit Bilgili

Carlos Morillo (NJIT) - Biology

Research: Restaurant-friendly Food Composter

Advisor: Dr. Jay Meegoda

Olivia Saez (NJIT) - Chemical Engineering

Research: Designing Microfluidics in for Fluid Cell Analysis

Advisor: Dr. Roman Voronov

Shahan Uzzaman (NJIT) - Electrical Engineering

Research: Microgrids Distribution Networks

Advisor: Dr. Edwin Hou

Leila Wooten (Bloomfield College) – Mathematical sciences

Research: Dynamical System Analysis of a One-dimensional Walking Droplet Model

Advisor: Dr. Denis Blackmore

Heritage Institute of Technology - NJIT Summer Research Program



L to R:

Prof. D. Misra, Sanjana Pareek, Sambarta Ray,

Rudrarup Sengupta, Indrasis Roy, Rahul Goswami,

Saunak Saha, Akshita Gupta, Prashant Vurikiti,

Amitangshu Mukherjee, Jishnu Ganguly, Aditya Sanyal

Jishnu Ganguly (HIT) - Electrical & Computer Engineering

Research: Study of Mechanical and Thermal Properties of Semiconductor Nanowires

Advisor: Leonid Tsybeskov

Rahul Goswami (HIT) - Electrical & Computer Engineering

Research: Impact of Environmental Factors on Underwater Communication

Advisor: Ali Abdi

Akshita Gupta (HIT) – Electrical & Computer Engineering

Research: Towards a standard open source simulator for Visible Light Communication

Advisor: Abdallah Khreishah

Amitangshu Mukherjee (HIT) – Mechanical and Industrial Engineering

Research: Analysis and Formulation of Positional Repeat-ability of an Industrial Robotic

Advisor: Sanchoy K. Das

Sanjana Pareek (HIT) - Mechanical and Industrial Engineering

Research: Mechanical characterization of polymer composites for advanced lithium-ion

Advisor: Siva Nadimpalli

Sambarta Ray (HIT) - Electrical & Computer Engineering

Research: Motion control of an insect-bot using spiking neural networks

Advisor: Edwin Hou

Indrasis Roy (HIT) - Electrical & Computer Engineering

Research: Application of Phased array concepts in massive MIMO, 5G Technologies

Advisor: Alex Haimovich

Saunak Saha (HIT) - Mechanical and Industrial Engineering

Research: Analysis and Formulation of Positional Repeat-ability of an Industrial Robotic Arm

Advisor: Sanchoy K. Das

Aditya Sanyal (HIT) - Electrical & Computer Engineering

Research: Experimental Enhancement of TPM-based Authentication Mechanism for Apache

Hadoo

Advisor: Abdallah Khreishah

Rudrarup Sengupta (HIT) - Electrical & Computer Engineering

Research: ALD High-K gate Stacks for Next generation CMOS Technology

Advisor: Durgamadhab Misra

Prashant Vurikiti (HIT) - Electrical & Computer Engineering

Research: ALD High-K gate Stacks for Next generation CMOS Technology

Advisor: Durgamadhab Misra







