



Summer Research Symposium

Technology

July 28, 2011

NJIT

New Jersey's Science &
Technology University

July 28, 2011

Welcome to New Jersey Institute of Technology's Fourth International Summer Research Symposium. It is indeed an honor and a pleasure to be the Chair of the 2011 Summer Research Symposium and join with Co-Chairs Dr. Durgamadhab Misra (Electrical and Computer Engineering), Dr. Sanchoy Das (Industrial Engineering), Dr. John Carpinelli (Pre-College) and Ms. Zara Williams (McNair) in hosting the program. The 2011 Research Symposium is the fourth such event combining New Jersey Institute of Technology (NJIT) McNair, and Provost's Undergraduate Research Program's and International students from India and China, conducting research under the guidance of NJIT Faculty. It is gratifying to have back with us students from the McNair Summer Research Institute Program, the undergraduate student contingent from Heritage Institute of Technology in Kolkata, India and BRCM College of Engineering and Technology in Bahal-Haryana India, NJIT Graduate students from Beijing, China and the new Provost's Undergraduate Research Program joining our Symposium. While the 2011 International Summer Research Symposium is in its fourth year the McNair Program celebrates its twelfth Summer Research Symposium Anniversary. We are extremely proud of the research efforts of 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
Symposium Chair and
McNair Program Director

Ronald E. McNair Postbaccalaureate Achievement Program



**Back Row (L to R): Bemín Ghobreal, Jay Vargas, Demetruis Lawing, Jairo Avila,
Theophilus Blount, Glendon Scott**

Front Row (L to R): Beshoy Abdelmalek, Gina Issa, Frandy Dort, Michael Williams

Ronald E. McNair Postbaccalaureate Achievement Program

Program Directors: Dr. Angelo Perna and Ms. Zara Williams

Beshoy Abdelmalek (NJIT) - Chemical Engineering

Research: Engineering and Design of Skin Penetration Enhancers Using A QSAR Modeling Framework

Advisor: Dr. Laurent Simon

Jairo Avila (NJIT) - Civil Engineering

Research: Modeling of Biodegradation Settlement of Landfills

Advisors: Dr. Dorairaja Raghu/Vatsal Shah (GA)

Theophilus Blount (NJIT) - Information System

Research: Participatory Learning Approach (PLA): User Interface Implementation

Advisor: Dr. Michael Bieber

Frandy Dort (NJIT) - Biomedical Engineering

Research: Centralized versus Distributed Motor Learning in Feedback Controlled Oculomotor Systems: An Analysis of Stability

Advisors: Dr. Tara Alvarez/Yelda Alkan and Eun H. Kim (GA)

Bemin Ghobreal (NJIT) - Biomedical Engineering/Electrical Engineering

Research: The Role of Attention, Central and Peripheral Retina Stimulation, Using the NJIT Flexible Visual Stimulator

Advisors: Dr. Tara Alvarez /Yelda Alkan and Eun H. Kim (GA)

Demetruis Lawing (NJIT) - Information Technology

Research: Participatory Learning Approach Workflow Design

Advisor: Dr. Michael Bieber

Glendon Scott (NJIT) - Biomedical Engineering/ Electrical Engineering

Research: Centralized versus Distributed Motor Learning in Pre-Programmed Controlled Oculomotor System: An Analysis of Adaption

Advisors: Dr. Tara Alvarez/Yelda Alkan and Eun H. Kim (GA)

Jay Vargas (NJIT) - Electrical Engineering

Research: Modeling of Magnetic Field-Assisted Assembly of Semiconductor Devices

Advisor: Dr. N.M. Ravindra, Vijay Kasisomsayjula

Michael Williams (NJIT) - Electrical Engineering

Research: Automatic Image Orientation Detection with Low-Cost Sensors

Advisor: Dr. Edwin Hou

Gina Issa (NJIT) - Civil Engineering

Research: Design Proportion of Recycled Glass and Plastic for Use as Retaining Wall Blocks

Advisor: Dr. Jay Meegoda

Provost's Summer Undergraduate Research Program



Back Row (L to R): Kevin Ly, Andrew Salerno, Sean Naughton, Pradyumna Dingari

Middle Row (L to R): Julian Raymar, Jeremy Raymar, Gabriel Geraldo, Nihal Dayal

Front Row (L to R): Sameen Mian, Elaine Gomez, Nicole Antonicello

Provost's Summer Undergraduate Research Program

Program Director: Dr. John Carpinelli

Nicole Antonicello (NJIT) - Biomedical Engineering

Research: Tracking Myelin Alterations Using a Traumatic Axonal Injury System

Advisor: Dr. Bryan J. Pfister

Nihal Dayal (NJIT) - Physics and Mathematics

Research: Computational Simulations of Structural Phase Transitions and Related Phenomena in Novel Solid-State Materials

Advisor: Keun Ahn

Pradyumna Dingari (NJIT) - Electrical Engineering

Research: Effects of Noise Reduction, and Improved Response Time on the Statistical Accuracy of Trans-palpebral Tonometer Device

Advisor: Gordon Thomas

Gabriel Geraldo (NJIT) - Biomedical Engineering

Research: Improving Axonal Growth in Dorsal Root Ganglia

Advisor: Bryan Pfister

Elaine Gomez (NJIT) - Chemical Engineering

Research: Carbon Dioxide Removal through a Continuous Ammonia Scrubbing System

Advisor: Robert Barat

Kevin Ly (NJIT) - Biology

Research: A Non-Invasive Portable Glucose Monitor Using Near-Infrared Spectroscopy

Advisors: Atam Dhawan and John Federici

Sameen Mian (NJIT) - Biology

Research: Conservation of Bee Diversity in the United States

Advisor: Kimberly Russell

Sean Naughton (NJIT) - Mathematics

Research: Instability of Gravity Driven Flow of Liquid Crystal Films

Advisors: Lou Kondic and Linda Cummings

Jeremy Raymar (NJIT) - Physics

Research: Space Weather Research with Digitization of Long Term Data Archive

Advisor: Haimin Wang

Julian Raymar (NJIT) - Computer Science

Research: Data Security and Privacy in Cloud Computing

Advisor: Reza Curtmola

Andrew Salerno (NJIT) - Mechanical Engineering

Research: Experimental Study of the Spontaneous Dispersion of Particles in Liquid

Advisors: Ian Fischer and Pushpendra Singh

Heritage Institute of Technology, Kolkata, & BRCM College of Engineering and Technology, Haryana, India



Back Row (L to R): Supriyo Banerjee, Keshav Sharma, Tanay Dutta

Middle Row (L to R): Sanniv Ganguly, Riddhiman Das Gupta, Payal Chirania, Mohit Asija

Front Row (L to R): Shreyosi Dutta, Sakshi Bahri, Monideepa Sengupta , Arushi Varma

Heritage Institute of Technology, Kolkata, & BRCM College of Engineering and Technology, Haryana, India

Program Director: Dr. Durgamadhab Misra

Monideepa Sengupta (HIT) - Biotechnology

Research: Growth and Biochemical Response of Titanium Oxide Nanoparticles on Microalgae (*Dunaliella tertiolecta*)

Advisor: Prof. L. Wei

Keshav Sharma (HIT) - Biotechnology

Research: Growth and Biochemical Response of Titanium Oxide Nanoparticles on Microalgae (*Dunaliella tertiolecta*)

Advisor: Prof. L. Wei

Shreyosi Dutta (HIT) - Biotechnology

Research: Dynamics of Molecular Transport through a Dialysis Membrane

Advisor: Prof. L. Simon

Sanniv Ganguly (HIT) - Biotechnology

Research: Development of DNA Aptamer Sensors for 8-Oxo-Guanine

Advisor: Prof. H. Huang

Payal Chirania (HIT) - Biotechnology

Research: Development of DNA Aptamer Sensors for 8-Oxo-Guanine

Advisor: Prof. H. Huang

Sakshi Bahri (HIT) - Information Technology

Research: Automated Data Gathering and Processing

Advisor: Prof. Andrew Sohn

Arushi Varma (BRCM College of Engineering) - Computer Science and Engineering

Research: Automated Data Gathering and Processing

Advisor: Prof. Andrew Sohn

Supriyo Banerjee (HIT) - Computer Science and Engineering

Research: Application of Trusted Computing in Mobile Phones

Advisor: Prof. Reza Curtmola

Tanay Dutta (HIT) - Computer Science and Engineering

Research: Establishment of Data Set for Digital Image Splicing detection

Advisor: Prof. Yun-Qing Shi

Riddhiman Das Gupta (HIT) - Computer Science and Engineering

Research: Establishment of Data Set for Digital Image Splicing Detection

Advisor: Prof. Yun-Qing Shi

Mohit Asija (BRCM College of Engineering) - Computer Science and Engineering

Research: Simulation Using Arena

Advisor: Prof. S. Das

NJIT M.S. Engineering Management, at Beijing, China



Pictured (L to R): Zhebin Zhao, Meng Lian, and Shushen Tan

NJIT M.S. Engineering Management, at Beijing, China

Program Director: Dr. Sanchoy Das

Shushen Tan (NJIT, Beijing)- Engineering Management

Research: Design of a (t,S) Policy to Minimize Stockouts in a Multi-Echelon Supply Chain

Advisors: Xuanqi Zhang & Sanchoy Das

Zhebin Zhao (NJIT, Beijing)- Engineering Management

Research: Optimizing Truck Dispatch Displays at a Cross Dock Distribution Facility

Advisors: Xuanqi Zhang & Sanchoy Das

Meng Lian (NJIT, Beijing)- Engineering Management

Research: Evaluating Operational Performance of New Jersey Hospitals Based on Medicare Data

Advisors: Shivon Boodhoo & Sanchoy Das

Summer Workshop Facilitators

Dr. Deran Hanesian
Master Teacher and Professor of Chemical Engineering

Dr. Michael Kerley
Professor of Humanities and Social Sciences

Dr. Ronald Rockland
Professor of Electric and Computer Engineering Technology

Dr. Judy Valyo
Educational Consultant

Mrs. Haymwantee Singh
Director - R. W. Van Houten Library

Ms. Nancy Vega
University Admissions

Ms. Clarisa Gonzalez-Lenahan
Associate Director of Graduate Studies

Dr. Linda Hirsch
Program Evaluator, Center for Pre-College Programs

Mr. Luis Victorero
Associate Director of Student Financial Aid Services

Mr. Paul Matri
Office of Research and Development

Mr. Darnell Simon, Ph.D. Candidate
Department of Biomedical Engineering

Ms. Gloria Portocarrero, PhD. Candidate
Department of Biomedical Engineering

Ms. Shilan Motmedivarzi, PhD. Candidate
Department of Chemical Engineering



4th International Summer Research Symposium Participants



2011



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**The Ronald E. McNair Postbaccalaureate
Achievement Program**
New Jersey Institute of Technology
University Heights, NJ 07102 – 1982
Tel (973) 596-5590 Fax (973) 596-5201
Website: mcnair.njit.edu

Designer/Editor: Akash Ramkirath