NJIT Fifth International Summer Research Symposium

July 26, 2012

NJIT®
New Jersey's Science & Technology University

NJIT
New Jersey's Science & Technology University

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Ronald E. McNair
Postbaccalaureate Achievement Program

July 26, 2012

Welcome to New Jersey Institute of Technology's Fifth International Summer Research Symposium. It is indeed an honor and a pleasure to be the Chair of the 2012 International Summer Research Symposium and join with Co-Chairs Dr. Durgamadhab Misra (Electrical and Computer Engineering), Dean Sunil Saigal (NCE), Dr. Bryan Pfister and Raquel Perez-Castillejos (BME) and Ms. Zara Williams (McNair) in hosting the program. The 2012 Research Symposium is the fifth such event combining New Jersey Institute of Technology (NJIT) McNair and Provost's Undergraduate Research Programs, BME's NSF/REU, and International students from India, conducting research under the guidance of NJIT Faculty. It is gratifying to have back with us students from the McNair Summer Research Institute, Provost Research Program, the undergraduate students contingent from the Heritage Institute of Technology, SKP Engineering College, BRCM College of Engineering and Technology, SRM University and MSIT, India and the new Biomedical Engineering NSF/REU Program joining our Symposium. While the 2012 International Summer Research Symposium is in its fifth year the McNair Program celebrates its Thirteenth Summer Research Symposium Anniversary. 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
Symposium Chair and
McNair Program Director

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Joel Bloom
President

July 23, 2012

In an increasingly complex, global and technological society, it is critical that more students are encouraged to seek post-baccalaureate education in science, engineering and technology fields. NJIT has multiple initiatives of very high quality to achieve this outcome. The Fifth Annual International Summer Research Symposium combines four excellent programs that provide opportunities for post-baccalaureate education and undergraduate research.

Under the very able leadership of the NJIT McNair staff, particularly that of its Director Professor Angelo J. Perna, this program continues to assist students to receive awards for their research presentations and enrollment in graduate school and professional programs.

With these outstanding achievements as our foundation, I look forward to the Fifth International Summer Research Symposium, the students' presentations and recognition of the faculty mentors. We thank the students for their diligence and hard work and the faculty mentors for the extra effort on behalf of our students.

Sincerely,

Joel S. Bloom

President

Ronald E. McNair Postbaccalaureate Achievement Program

Back Row (L to R): Wendy Hertulien, Jose Mendez, John Villaraga, Deepika Misra, Ryan Harrison

Front Row (L to R): Vincia Jackson, Marina Saint-Val, Faidy Rusinque, Carl Macmillan

Ronald E. McNair Postbaccalaureate Achievement Program

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

Ryan Harrison (NJIT) - Information Systems
Research: Collaborative Learning Through Assessment
Advisor: Dr. Michael Bieber

Wendy Hertulien (NJIT) - Chemical Engineering
Research: Upgrading Pyrolysis Bio-Oils by Hydrodeoxygenation Over Metal Supported Catalysts Using Guaiacol as a Model Compound
Advisor: Dr. Xianqin Wang

Vincia Jackson (NJIT) - Chemistry
Research: Development and Validation of Mechanical Alloying Models
Advisor: Dr. Edward Dreizin

Carl Macmillan (NJIT) - Electrical and Computer Engineering Technology
Research: Collaborative Learning Through Assessment
Advisor: Dr. Michael Bieber

Jose Mendez (NJIT) - Physics and Computer Science
Research: Python Graphical User Interface for the Expanded Owens Valley Solar Array
Advisor: Dr. Dale Gary

Deepika Misra (NJIT) - Concrete Industry Management Technology
Research: The Mold Test
Advisor: Dr. Mohamed Mahgoub

Faidy Rusinque (NJIT) - Chemical Engineering
Research: Hydrogen Production from Solar Energy Over TiO_2-Based Catalysts
Advisor: Dr. Xianqin Wang

Marina Saint-Val (NJIT) - Biochemistry
Research: Optimal Concentration of Sodium Cellulose Sulfate to Mimic Articular Cartilage
Advisors: Dr. W. Hammond, Dr. G. Collins, Dr. M. Jaffe, and Dr. T. Livingston Arinzeh

John Villaraga (NJIT) - Chemical Engineering
Research: Hydrogen Production from Solar Energy Using Non-Metal Catalysts
Advisor: Dr. Xianqin Wang

Heritage Institute of Technology, SKP Engineering College, BRCM College of Engineering and Technology, SRM University & MSIT, India

Back Row (L to R): Manikandan Sekar, Rik Dhar, Saravanan Dhamodaran, Purushottam Dutt, Devdatt Chattopadhyay, Arun Sampath, Sankalp Singh

Middle Row (L to R): Sweatha Seetharaman, Lavanya Sekar, Dr. Mohankumar Nagarajan, Siddhartha Dey, Deeptarka Das, Biswajit Debnath

Front Row (L to R): Jayalakshmi Krishnasamy, Haimanti Chakraborty, Ankita Mazumdar, Meenal Garg, Aryaa Singh, Arghyadeep Sarkar

Heritage Institute of Technology, SKP Engineering College, BRCM College of Engineering and Technology, SRM University & MSIT, India

Program Director: Dr. Durgamadhab Misra

Haimanti Chakraborty (HIT) - Electrical Engineering
Research: High-k Gate Dielectrics
Advisor: Dr. Durgamadhab Misra

Devdatt Chattopadhyay (HIT) - Electrical Engineering
Research: High-k Gate Dielectrics
Advisor: Dr. Durgamadhab Misra

Deeptarka Das (HIT) - Electrical Engineering
Research: VLSI Design
Advisor: Dr. Durgamadhab Misra

Biswajit Debnath (HIT) - Chemical Engineering
Research: Encapsulation of Suspension of Drugs into Porous Films by Drop-on-Demand Method
Advisor: Dr. Boris Khusid

Siddhartha Dey (HIT) - Electrical Engineering
Research: Optimization for Energy Efficient Buildings
Advisor: Dr. Mengchu Zhou

Saravanan Dhamodaran (SKPEC) - Mechanical & Industrial Engineering
Research: Repeatability of a Robotic Arm
Advisor: Dr. Sanchoy Das

Rik Dhar (HIT) - Chemistry
Research: DNA Aptamer Sensor for 8-oxoguanine
Advisor: Dr. Haidong Huang

Purushottam Dutt (HIT) - Mechanical and Industrial Engineering
Research: Repeatability of a Robotic Arm
Advisor: Dr. Sanchoy Das

Meenal Garg (BRCM CET) - Information Science
Research: Collaborative/Interactive Learning
Advisor: Dr. Michael Bieber

Heritage Institute of Technology, SKP Engineering College, BRCM College of Engineering and Technology, SRM University & MSIT, India (Continued)

Jayalakshmi Krishnasamy (SKPEC) - Electrical Engineering
Research: High-k Gate Dielectrics
Advisor: Dr. Durgamadhab Misra

Ankita Mazumdar (HIT) - Electrical Engineering
Research: Facial Feature Detection and Tracking
Advisor: Dr. Edwin Hou

Arun Sampath (SKPEC) - Physics
Research: Copper Indium Gallium Diselenide Solar Cells
Advisor: Dr. N.M. Ravindra

Arghyadeep Sarkar (MSIT) - Electrical Engineering
Research: VLSI Design
Advisor: Dr. Durgamadhab Misra

Sweatha Seetharaman (SKPEC) - Computer Science
Research: Cloud Computing
Advisor: Dr. Reza Curtmola

Lavanya Sekar (SKPEC) - Computer Science
Research: 3-D Modeling on Image Processing
Advisor: Dr. Vincent Oria

Manikandan Sekar (SKPEC) - Computer Science
Research: Cloud Computing
Advisor: Dr. Reza Curtmola

Aryaa Singh (BRCM CET) - Information Science
Research: Collaborative/Interactive Learning
Advisor: Dr. Michael Bieber

Sankalp Singh (SRM University) - Electrical Engineering
Research: Thin-Film CdTe Solar Cells
Advisor: Dr. Durgamadhab Misra

Biophysics Undergraduate Research Program

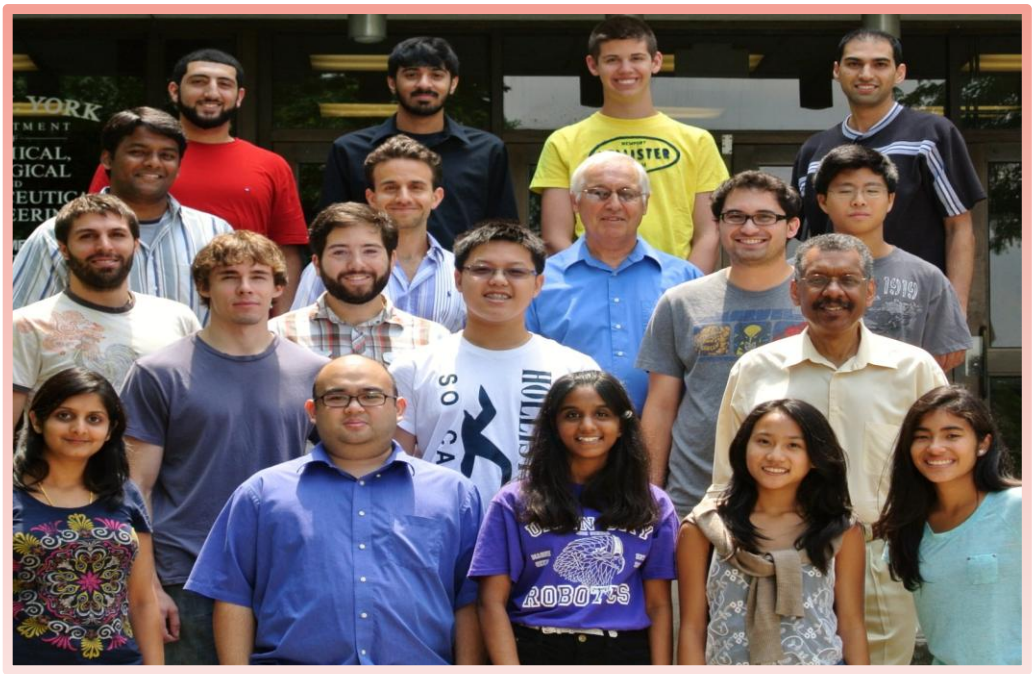
Program Director: Dr. Gordon A. Thomas

Nicholas Bayconich (Ramapo/NJIT) – Physics
Research: A probe of the Health of a Single Cell
Advisors: Drs. Gordon A. Thomas, Reginald Farrrow, Alokik Kanwal, and Camelia Prodan

Ryan Brandeisky (Ramapo/NJIT) – Physics
Research: Measuring Impacts on Explosives to Protect Soldiers
Advisors: Drs. Gordon A. Thomas, Reginald Farrow and Alokik Kanwal

Prad Dingari (NJIT) – Physics
Research: A Smart Shunt to Fight Brain Injuries
Advisors: Drs. Gordon A. Thomas, Reginald Farrow and Alokik Kanwal

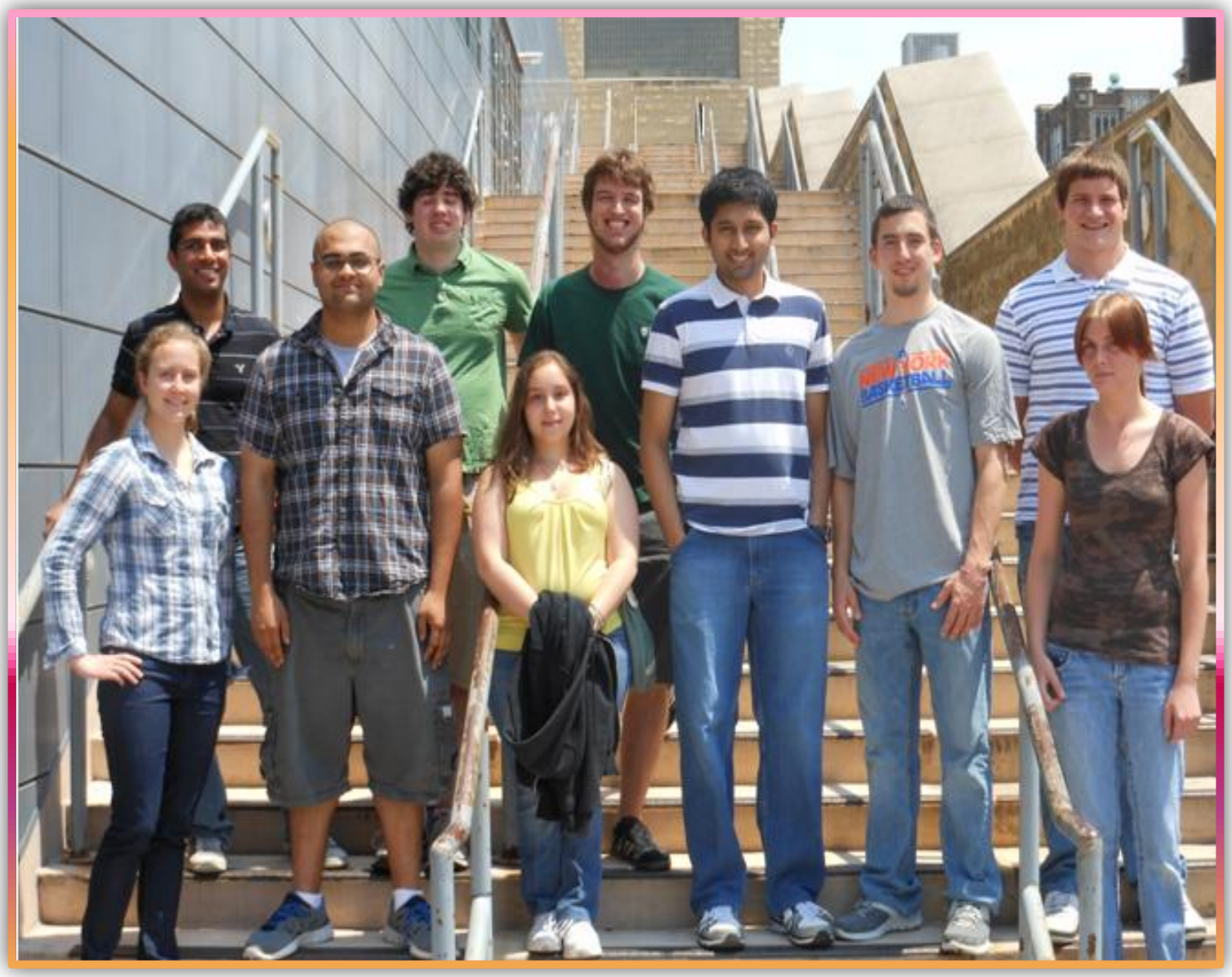
Hassan Muhammad (NJIT) – Biomedical Engineering
Research: A Personal Eye Monitor to Prevent Blindness
Advisor: Dr. Gordon A. Thomas



Back Row (L to R): Hassan Muhammed

Middle Row (L to R): Prad Dingari, Ryan Brandeisky , Nicholas Bayconich

National Science Foundation Research Experience for Undergraduates – REU Site
Neuro-Engineering Summer Research Program



Back Row (L to R): Nikhil Venkat Chavali, Justin Daniel Holman, Tyler Craig Schlichenmeyer, Stephen Joseph Kays

Front Row (L to R): Brandey Lynn Andersen, Prasad Amol Tendolkar, Bethany Marie Padinha Almeida, Rohit Kyatham Reddy, Kyle Matthew Fedorchak, Stacy Lynn Willet

National Science Foundation Research Experience for Undergraduates – REU Site Neuro-Engineering Summer Research Program

Program co-Directors: Dr. Bryan Pfister and Raquel Perez-Castillejos

Bethany Marie Padinha Almeida (Worcester Polytechnic Institute) - Biomedical Engineering
Research: Validation of a Method and Program to Measure ERPs
Advisors: Dr. Bruno Mantilla and Michael Bergen

Brandey Lynn Andersen (University of Florida) - Biological Engineering
Research: Measuring Neurite Outgrowth in Various Geometric Shapes using Micropatterning Techniques
Advisors: Drs. Cheul Cho and Raquel Perez-Castillejos

Nikhil Venkat Chavali (The Johns Hopkins University) - Neuroscience
Research: Measuring Neurite Outgrowth in Various Geometric Shapes using Micropatterning Techniques
Advisors: Drs. Cheul Cho and Raquel Perez-Castillejos

Kyle Matthew Fedorchak (University of Rochester) - Biomedical Engineering
Research: Comparing Neurite Outgrowth on Electrospun Soy Protein Scaffolds
Advisors: Drs. George Collins and Treena Arinzeh

Justin Daniel Holman (George Fox University) - Mechanical Engineering
Research: Development of a Hardware and Software Approach to a Spinal Cord Computer Interface
Advisor: Dr. Mesut Sahin

Stephen Joseph Kays (Rose-Hulman Institute of Technology) - Biomedical Engineering
Research: Comparing Neurite Outgrowth on Electrospun Soy Protein Scaffolds
Advisors: Drs. George Collins and Treena Arinzeh

Rohit Kyatham Reddy (The College of New Jersey) - Biomedical Engineering
Research: Comparing Neurite Outgrowth on Electrospun Soy Protein Scaffolds
Advisors: Drs. George Collins and Treena Arinzeh

Prasad Amol Tendolkar (New Jersey Institute of Technology) - Biomedical Engineering
Research: Validation of a Method and Program to Measure ERPs
Advisors: Dr. Bruno Mantilla and Michael Bergen

Tyler Craig Schlichenmeyer (Tulane University) - Biomedical Engineering
Research: Development of a Hardware and Software Approach to a Spinal Cord Computer Interface
Advisor: Dr. Mesut Sahin

Stacy Lynn Willett (Arkansas Tech University) - Electrical Engineering and Biochemistry
Research: Measuring Neurite Outgrowth in Various Geometric Shapes using Micropatterning Techniques
Advisor: Drs. Cheul Cho and Raquel Perez-Castillejos

Provost Undergraduate Research Program

Back Row (L to R): Stephen Haddock-Weiler, Manthan Patel, Brandon Warshofsky, Tito G. A. Nurudeen Jr., Murat Duru, Asif Kamran

Middle Row (L to R): Ryann Rykowski, Kayla Drobnis, Neveda Rajan, Elvira Hoxha, Stephen Polledri, Nicole Tran, Lucas Lamb, Fang Cao, Shakawat Hossain, Toha Povedo

Front Row (L to R): Ross Cohen, Lindsey Oh, Erick Sanchez Suasnabar, Daniel Hastings

Provost Undergraduate Research Program

Program Director: Dean Sunil Saigal

Fang Cao (NJIT) - Electrical Engineering Technology
Research: Improving Handheld GPS-accuracy Through Smoothing and High-Resolution Ionosphere Modeling over New Jersey
Advisor: Dr. John Miima

Ross Cohen (NJIT) – Physics
Research: Measurements of The Core of An Artificial Pancreas
Advisors : Drs. Gordon A. Thomas, Reginald Farrow and Alokik Kanwal

Kayla Drobnis (NJIT) - Biology
Research: The Effects of Power Lines on Native Bee Populations
Advisor: Kimberly Russell

Murat Duru (NJIT) - Mechanical Engineering
Research: Real-Time Submarine Detection
Advisor: Dr. N.M. Ravindra

Luke Greenleaf (NJIT) – Electrical Engineering
Research: "Theraficient" Data Glove; Creating an Industry Standard
Advisor: Dr. Foulds

Stephen Haddock-Weiler (NJIT) – School of Art and Design
Research: Path Finding in Interactive Environments
Advisor: Augustus Wendell

Daniel Hastings (NJIT) - Mechanical Engineering and Information Technology
Research: Idea!
Advisor: Balraj Mani

Shakawat Hossain (NJIT) - Accounting
Research: Purchasing Database and Electronic Journals
Advisor: Dr. Cheickna Sylla

Elvira Hoxha (NJIT) - Architecture
Research: 2013 China Solar Decathlon Team
Advisor: Prof. Richard Garber

Asif Kamran (NJIT) - Computer Science
Research: Autismind: Improving the Cognitive Pathways and Deficiencies of Children with Autism Spectrum Disorder (ASD)
Advisor: Dr. A. Dhawan and Prof. Andrew Sohn

Provost Undergraduate Research Program (Continued)

Lucas Lamb (NJIT) - Physics
Research: Terahertz Wireless Communications
Advisor: Dr. John Federici

Alexander Leonard (NJIT) - Architecture
Research: 2013 China Solar Decathlon Team
Advisors: Richard Garber and Zeyuan Qiu

Tito G. A. Nurudeen Jr. (NJIT) - Humanities
Research: College Composition and Communication Writing Assessment as a Tool for Placing Students in Post Secondary Institutions
Advisor: Dr. Norbert Elliot

Carly Occhifinto (NJIT) – Chemical Engineering
Research: The Effects of Mixing on the Homogeneity of Films Containing Poorly Water Soluble BCE Class II Nanosized Drug Particles
Advisor: Dr. Ecevit A. Bilgili

Lindsey Oh (NJIT) - Mechanical Engineering
Research: Wetting of Carbon Based Surfaces
Advisor: Dr. Haim Grebel

Jaymin Patel (NJIT) - Chemical Engineering
Research: Thermal Ignition of Nanocomposite Materials
Advisor: Dr. Edwin Dreizin

Manthan Patel (NJIT) - Mechanical Engineering
Research: Design Well TM
Advisor: Balraj Mani

Stephen Polledri (NJIT) - Architecture
Research: 2013 China Solar Decathlon Team
Advisors: Richard Garber and Zeyuan Qiu

Toha Poveda (NJIT) - Mechanical Engineering
Research: Design Well TM
Advisor: Balraj Mani

Neveda Rajan (NJIT) - Civil Engineering
Research: OTECCS - Organics to Electricity Coupled Cell System
Advisor: Dr. Taha Marhaba

Ryann Rykowski (NJIT) - Information Technology
Research: iEducation: iPads and Learning
Advisor: Dr. Jerry Fjermestad

Provost Undergraduate Research Program (Continued)

Erick Sanchez Suasnabar (NJIT) - Business and Information Systems
Research: Participatory Learning Approach: Literature Review and Framework Design
Advisor: Dr. Michael Bieber

Nicole Tran (NJIT) - Biology
Research: Detecting Drug Release from Novel Joint Replacement Devices
Advisor: Dr. Treena Arinzeh

Brandon Warshofsky (NJIT) - Architecture
Research: 2013 China Solar Decathlon Team
Advisors: Prof. Richard Garber and Zeyuan Qiu

NJIT Summer Innovation Accelerator Program

Program Director: Michael Ehrlich

Nicholas Costello (NJIT) – Information Technology
Research: Mobile Application to Web Utility Company – Use Smartphones to add pictures to websites automatically
Advisor: Michael Ehrlich

Tolu Lanrewaju (UMDNJ) – Public Health
Research: Tutoring Company – Web and Mobile Based with Algorithmic Matching
Advisor: Michael Ehrlich

Kevin Ly (NJIT) – Biology
Research: Medical Device Company – Non Invasive Blood Glucose Meter
Advisor: Michael Ehrlich

Bryan Nissen (NJIT) – Information Technology
Research: Mobile Application to Web Utility Company – Use Smartphones to add pictures to websites automatically
Advisor: Michael Ehrlich

Neveda Rajan (NJIT) – Civil Engineering
Research: Waste to Energy Company – Converting Liquid Organic Waste to Electricity
Advisor: Michael Ehrlich

Kathleen Uske (NJIT) – Biomedical Engineering
Research: Lifestyle Medical Device Company – Bathroom based systems to monitor health and safety
Advisor: Michael Ehrlich

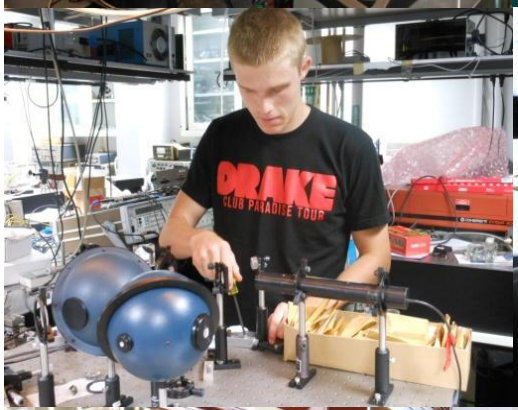
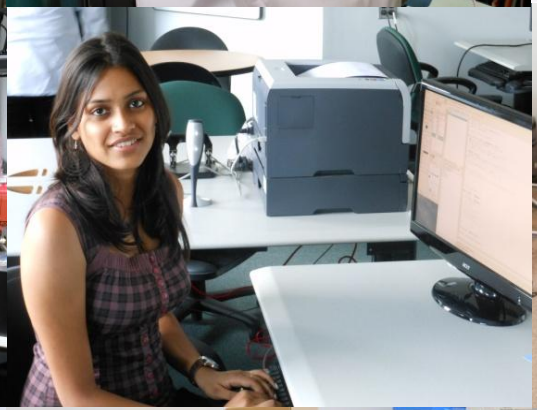
Asim Zaman (NJIT) – Civil Engineering
Research: Waste to Energy Company – Converting Liquid Organic Waste to Electricity
Advisor: Michael Ehrlich

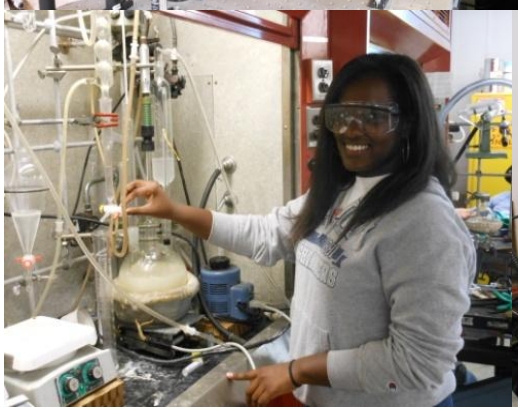


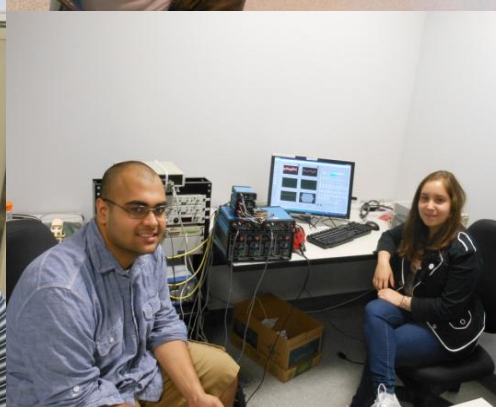


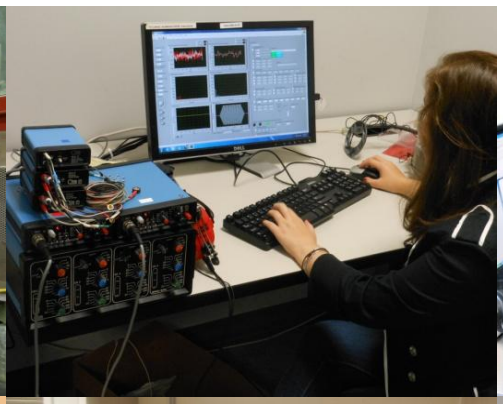
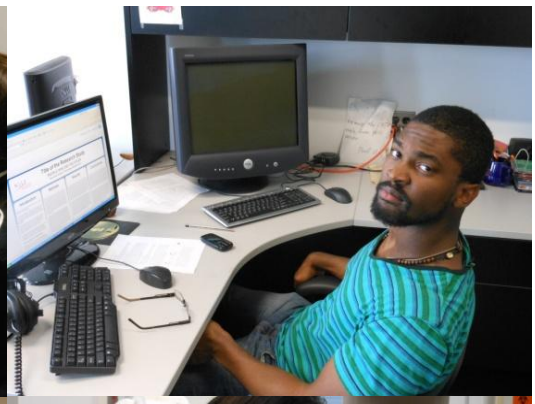






DRAKE
CLUB PARADISE TOUR




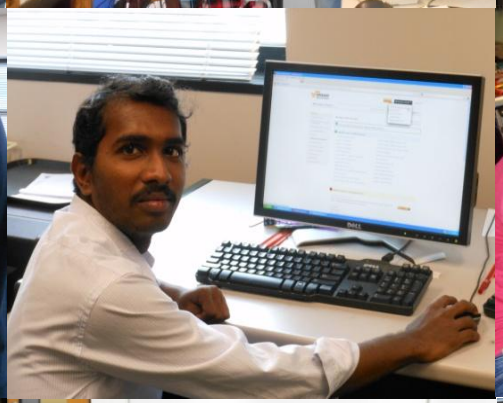


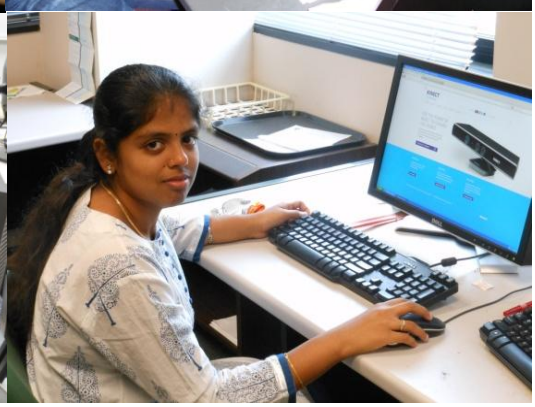












NJIT Fifth International Summer Research Symposium Participants

2012

Booklet Created by:
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