

Jerry D'Alessio

Jerry D'Alessio earned a BS degree in Mechanical Engineering from NJIT in 1993 and a MS in Biomedical Engineering from NJIT in 1995. His Masters Thesis was "Wear and Friction of Hyalmar and Polyethylene on Cobalt-Chromium: A Pin Against Disk Study," the research for which was performed at Endotec Corporation. Jerry has published several papers in the area of prosthetic knee, ankle and temporomandibular joints.



Jerry said that his experience in Biomedical Engineering at NJIT changed his career goals to where he felt much more fulfilled as an engineer. Upon graduation Mr. D'Alessio joined the staff at Endotec as an applications engineer, then spent two years as Assistant Research Director at Biomedical Engineering Trust Inc., and is now a project manager of prosthetic knee development at Stryker-Howmedica, Inc.

He is involved in the development of unicompartamental, patellofemoral knee systems. He is responsible for the coordination of the design and testing of implants, and the instrumentation marketing demands.

Jerry recently presented a seminar on prosthetic knee design at the Biomedical Engineering Department.

Medtech Forecast

Revenue for medical device companies grew at an annual rate of 9% during the past two years. Six technologies to watch in 2004 are Drug Eluting Stents, Implantable Defibrillators, Neurostimulation Devices, Nanoscale Biosensors, Cardiac Rhythm Management Devices and Less-Invasive Hip Prostheses.

Darshana Patel

Darshana graduated from John P. Stevens High School in Edison, NJ in 2001. She entered NJIT as a Biomedical Engineering major in the Fall of 2001. She has earned a GPA of more than 3.63 out of 4.00 while also minoring in Chemistry.



Darshana is an Honors Student at NJIT, as well as secretary of the Biomedical Engineering Society.

She presented a paper at the 2003 Northeast Bioengineering Conference, "Contact with Glass Interferes with the Erythrocyte Sedimentation Rate (ESR)" coauthored by a faculty member at the New Jersey Medical School, where she performed her research.

Darshana has received the EOP Excellence Award, and was awarded the Merck Engineering Fellowship for 2004.

Her goal is to become a physician.

BME Department Seminar

Dr. Hans Chaudhry

**Research Professor, Biomedical Engineering
NJIT**

"A New Reliable Measure of Postural Stability"

Dynamic posturography has become an important tool for understanding standing balance in clinical settings. A key factor is the Sensory Organization Test (SOT), which provides information about the integration of multiple components of balance. The SOT provides a measure, the equilibrium score (ES), which reflects the overall coordination of the visual, proprioceptive, and vestibular systems for maintaining standing posture.

Biomedical Engineering

at

NJIT

**The New Jersey Institute of
Technology**

December 2003 #7

**Bachelors Degree
Masters Degree
Doctoral Degree
in Biomedical Engineering**

**For information,
contact
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29th Northeast Bioengineering Conference - March 2003 Part Two

The twenty-ninth Northeast Bioengineering Conference was held at NJIT in March. Among the 160 papers that were presented, thirty-seven were reports of research involving NJIT. The following are some of the papers.

A Computational Model of the Spastic Behavior of The Lower Limb

Bruno Mantilla¹, Richard Foulds¹,
SueAnn Sisto²

Trapping Particles in Microfluidics by Positive Dielectrophoresis

Nikolai Markarian³, Mike Yeksel³, Boris Khusid¹,
Kenneth Farmer¹, Andreas Acrivos³

COPD Severity Classification Using Principal Component and Cluster Analysis on HRV Parameters

Douglas Newandee⁴, Stanley Reisman¹,
M. N. Bartels⁵, and R. E. De Meersman⁵

Wavelet Representation Comparison for Heart Rate Variability Analysis

Douglas Newandee⁴ and Stanley Reisman¹

Biologically Inspired Joint Utilizing Linearized Control to Enhance the Effects of Spasticity

Richard Paradiso⁴ and Richard Foulds¹

A Biologically Inspired Joint Model to Enhance Understanding of Spasticity

Richard Paradiso⁴ and Richard Foulds¹

Contact with Glass Interferes with the Erythrocyte Sedimentation Rate (ESR)

Darshana Patel⁴, David Kristol¹, Rohit Arora⁶,
Charles Spillert⁶

Wavelength Selection for Multi-Spectral Imaging of Skin Lesions Using Nevoscope

Sachin Patwardhan⁴, Atam Dhawan¹, Patricia Relue⁷

Combined Effect of Mercuric Ion and Silver Ion on the Clotting Time of Blood

Uma Phatak⁴, David Kristol¹, Rohit Arora⁶,
Charles Spillert⁶

Studio Laboratory Developed Instinctively Between Faculty and Student Facilitate Better Learning Experiences in the Classroom

M. Phillips⁴, Tara Alvarez¹

A Novel, Web-enabled Multimedia Approach, with 3D Virtual Reality Internal and External Human Body Tours, to Support Low Back Pain Diagnosis

Paul Ranky¹, S. F. Nadler⁶

Analysis of Gait Event Detection Algorithms Applied to Movement Data Collected on a Sloped Treadmill

David Saxe⁴, Richard Foulds¹

Eye And Mouse Movements For User Interface Design

Tirthankar Sengupta¹, One-Jang Jeng¹

Effect of Endotoxin on Erythrocyte Sedimentation Rate Values

Arif Shahzad⁴, David Kristol¹, Rohit Arora⁶,
Charles Spillert⁶

Pattern Recognition Considerations for Continuous Sign Language Recognition

Gillian Sherry⁴, Richard Foulds¹

- 1 - NJIT faculty member
- 2 - Kessler Institute
- 3 - City College of New York
- 4 - NJIT student
- 5 - Columbia University
- 6 - UMDNJ faculty member
- 7 - University of Toledo faculty member

BME Departmental Seminar

Mr. Michael Bergen

Chief - CSUIB Technology Group

VA NJ Health Care System

NJIT Department of Biomedical Engineering

"Biomedical Engineering

For the Department of Homeland Defense"



Our military service men and women are engaged in conflicts around the world where they are exposed to a complex array of hazards. While some of the hazards are known, our troops often battle the unknown. Chemical and biological agents put our troops at increased risk.

Historically, veterans' illnesses were not addressed until well after the conflict ended. In veterans' hospitals today, however, research is at the forefront of the conflict by providing engineering solutions for the problems that arise from modern military conflicts.

Mr. Bergen has been working at the VA Medical Center for 16 years, and is a graduate of the Masters Degree program in biomedical engineering at NJIT. He is an adjunct professor of biomedical engineering and teaches BME 301 [Electrical Foundations] and BME 687 [Medical Instrumentation] at NJIT.

"Text Summarization Contributions to Universal Access"

Richard Foulds¹ and Cynthia Camacho⁴

Technology and Disability 15, 223-229 (2003)

Individuals who access electronic text with Braille and synthetic speech, or who have reading disabilities are limited in their ability to quickly skim large documents. This paper describing the use of computer generated text summaries an alternative method of skimming, permitting people to rapidly determine themes of the material, and determine the important segments to be read in detail.