Welcome the new GBMES Executive Board!

President - Timothy Buirkle
Vice President - Divya Rajendran
Event Coordinator & Secretary - Jamila Gittens
Treasurer – Saranya Elavazhagan
Public Relations Chair – Aarthy Sagathevan

GBMES EVENTS* FALL 2011

1st GBMES MEETING
Thursday, 9/16 1PM
Fenster Hall, 6th Floor Lounge

BROOKLYN BREWERY TOUR
Friday, 9/23 1:30PM
Brooklyn, NY

SEMINAR 1 – Industry Guest Lecture
Tuesday, 9/27 5:30PM
Fenster Hall

SEMINAR 2 – Alumni Guest Lecture
Tuesday, 10/20 6PM
Fenster Hall

2nd GBMES MEETING
Thursday, 10/13 1PM
Fenster Hall

INDUSTRY VISIT
Tuesday, 11/8 6PM
Fenster Hall

3rd GBMES MEETING
Tuesday, 11/15
Fenster Hall

FUN EVENT of YOUR Choice!
Friday, 11/18
TBD

THANKSGIVING RECESS
Thursday-Friday, 11/24-25

SEMINAR 3
Tuesday, 11/29
Fenster Hall

4th GBMES MEETING
Thursday, 12/8
Fenster Hall

LAST DAY OF CLASSES
Monday, 12/12

*A The events are liable to changes.

A Message from the President

In a collaborative effort to inform and involve ALL Biomedical Engineering students, and by popular request from numerous faculty members within the department, we are pleased to introduce the first issue of the GBMES-sponsored newsletter – BioInspire. Long in the works, this biannual pamphlet was created for the purpose of showcasing research being conducted at NJIT within our field, alerting students and faculty to important lectures, social events, and fundraisers, and providing a forum to help unite our department as a whole.

Keep in mind, the primary focus of this newsletter is to help direct and guide BME students in preparation for what lies ahead. In tough economic times, prospective graduates need to capitalize on any opportunity to foster advancement into the job world. Upcoming events, such as alumni guest lectures and industry visits, provide a variety of ways in which you, as students, can network with potential employers, gain insight into the field and upcoming industry trends. The time spent at NJIT is very short, therefore, I encourage each of you to be proactive and take full advantage of the news and events we have to offer.

Concurrently, we have launched an updated version of our group’s website, www.njit.edu/gbmes, which will serve as an added tool in keeping our readers and members aware of upcoming social and networking events. The website will also inform students of fundraisers and ways of becoming involved with GBMES. A maintained involvement from the student body and this year’s incoming graduate students is ultimately what will keep our club heading in a positive direction. My challenge to you: keep the ball rolling this upcoming year by expanding our club’s impact on the department, further developing participation in events, and exploring all opportunities to better our school’s graduate program. I look forward to the positive impact we will make together in the Fall Semester – good luck!

- Timothy Buirkle, President of GBMES
We asked 3 professors from the BME Department what advice they had for graduate students and here is what they had to say!

Dr. Josh Simon, MBA, PhD

One of Dr. Josh Simon’s favorite sayings is “Networking is the most important thing we can do in our quest to get our first job or next degree program!” This is expected since he got his job at NJIT from an old classmate who in the past taught the same course. Dr. Simon is an Adjunct Professor in our department, who teaches two of the most popular courses in BME, namely Medical Device Development and Project Management for Medical Devices. While the former provides an overview of the medical device development from both an industrial and academic perspective, the latter explains the detailed process involved in project management with relevance to medical device industries.

In addition, to being one of the popular professors, he is a Senior Product Manager in charge of marketing and product development at Biocoat, Inc. After obtaining his Bachelor’s Degree in Chemical/BioChemical Engineering at Rutgers, New Brunswick, he went on to obtain a MS and PhD in Biomedical Engineering from the Rutgers-UMDNJ Joint Program. Soon after graduation, he joined Biomet as a Research Scientist working on bone grafting materials, tissue engineering, and electrical stimulation of bone healing.

After working several years in research, he found his true passion in teaching and training people, thus, entering into the Marketing Department of Biomet. Simultaneously, he obtained his MBA from the University of Phoenix in 2006. Two years later, he left Biomet and joined as the head of marketing at Biocoat, Inc.

If you want to get into his classes, be sure you register early. We can tell you from experience, it fills up fast!

Dr. Hans Chaudhry, PhD

Dr. Hans Chaudhry, a well renowned researcher in the field of Biomechanics, joined NJIT in 1990 after his retirement as a researcher in the field of Biomechanics. After working several years in research, he found his true passion in teaching and training people, thus, entering into the Marketing Department of Biomet. Simultaneously, he obtained his MBA from the University of Phoenix in 2006. Two years later, he left Biomet and joined as the head of marketing at Biocoat, Inc.

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A Message from the Former GBMES President

I would like to first and foremost congratulate each and every BME student, as your commitment to education provides a driving force that not only advances science and technology, but also demonstrates the importance of interdisciplinary studies and research. It is we, the students, who create new and innovative solutions to challenging tasks by working as teammates. We are students of BioMedical Engineering, who save lives with groundbreaking devices and treatments by taking an interdisciplinary approach to solve any problems which confront us. By selecting this field of study, YOU have accepted great responsibilities and will always be looked up to with great expectations.

YOUR time is now. Many speak of change, yet few individuals materialize their desire and devotion to bring about action. I call each and every one of you to accept this ultimate challenge and take action to make the world a better place with this invaluable degree from one of the top engineering schools in the county. Every BME student has a unique story to tell; how BME sparked their interest, how their life’s journey has brought them to NJIT and where they hope to start their next endeavor. What I request from each and every future journey towards greatness, do not forget about our past; for it is our past that shapes our future.

– Joe Geissler, Former GBMES President

5 Things you need to do to ensure receiving a job offer:

1. Know Your Career Development Services (CDS) Advisor: Alexia Jones - 973.596.2939, jonesa@njit.edu
2. Apply for On-Campus Recruitment (OCR)
3. Be familiar with the CDS On-line website. Here is the link: https://njit.experience.com
4. Know the CDS Website: http://www.njit.edu/cds/
5. Have an answer prepared for the interview question “Where do you want to be in 5 years/10 years?”

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completed his thesis under Dr. Chaudhry in the Biomechanics Lab, Room 650 in Fenster Hall. "Non-invasive Interventions to Reduce Low Back Dysfunction" was the title of his thesis which aimed to quantitatively evaluate low back dynamics. The goal of his study was to identify and classify low back dysfunction before and after treatment through measurements that show a variance from the normal range. Unfortunately, Nadi had previously gotten into a car accident which caused him to have lower back issues, thus, enabling him to be his own test subject! Nadi’s advice about completing a master’s thesis is to be persistent, not to procrastinate and to finish your introduction as soon as possible. "It’s the worst part of the report," he says.

Nadi advises other graduate students in the BME department not to get lost in strictly academic endeavors. "There is more to your M.S., than just classes," proclaims Nadi. The student body and the faculty at NJIT, especially the BME department, are very friendly and he suggests you get to know them. While working towards his Master’s degree Nadi was Vice President of GBMES and wants YOU to join too!

After graduating, Nadi was offered the opportunity to teach an undergraduate biomechanics course. He is now seeking to pursue his PhD in biomedical engineering, allowing him to be able to delve more deeply into the research aspect of biomedical engineering.

"Never hesitate to ask." —Samata Kakkad

Samata Kakkad graduated from NJIT with her Master’s in Biomedical Engineering in December of 2007. Her concentration was Medical Imaging, which naturally brought her under the advisement of Dr. Bharat Biswal for her master’s thesis. Her project consisted of utilizing breath holding as a MRI task to develop an endogenous contrast in order to differentiate between different brain tissue types, i.e. grey matter, white matter and cerebrospinal fluid. Samata was determined to do research after graduating and persisted at looking for a job in an academic environment. She obtained her current position by writing to professors at different universities whose research projects were of interest to her. After graduating, she received a job as a Research Technologist at Johns Hopkins Medical Institute. Her work at Johns Hopkins entails studying the macromolecular transport through the heterogeneous tumor microenvironment for better drug delivery. Samata’s job is directly related to the skills she learned at NJIT, including MRI and optical imaging, as well as image processing.

Samata suggests that if you are planning on working in a research field that you do a thesis project while working towards your MS degree. She also recommends staying in touch with your professors and advisors for recommendations that you might need later down the road. Gaining extra relevant experience and knowledge after graduation is also something she thinks will help boost your CV and receipt of job offers. There are

the Chair of the Department of Applied Science in Punjab Engineering College, Chandigarh, India. With several publications in international peer reviewed journals and patents to his credit; he is one of the most sought after research professors.

He started in the Mathematical Sciences Department after which his interest in biomedical engineering drew him to our department. He has facilitated many collaborative projects with the BME department, UMDNJ, VA Medical Center, and Kessler Institute for Rehabilitation which has resulted in various breakthroughs in the following areas: postural stability, stress and strain analysis in the cardiovascular system, optimal patterns of wound suturing, low back dysfunction, human fascia, cerebral aneurysm, and co-flator for respiratory disabilities. He continued to teach until 2004, after which he decided to devote his time solely to research. He has successfully guided many graduate students in their projects such as

using Anatomical Torsion Monitor for Evaluation and Improvement of Low Back Dysfunction, and Exploring the Concept of Hysteresis for Ankle Dysfunction and Knee Disorder.

He wants to bring together science and spirituality through experimental research as these two fields must co-exist for better living in the modern world which is mostly dominated by science alone. Therefore, his future innovative research projects will pertain to using Thought Power as a preventive device to alleviate pain and improve healing in any part of the physical body.

If you are a student with a passion for research in biomechanics and a thirst for international publications, you know who to call!

Dr. Michael Jaffe, PhD

Dr. Jaffe, a charter member of the BME department, is also a dedicated Research Professor in the BME and Chemistry

Who’s Who in the BME Department

William C. Van Buskirk – Chair of the Department
He is not only the Chair of the BME Department but also a distinguished professor, whose academic interests include biomechanics, vestibular mechanics and bone mechanics.

Candida Rocha – Assistant to the Chair
You will be receiving e-mails from Candida about the upcoming BME Seminars, which each graduate student is required to take, and thesis presentations.

Richard Foulds – PhD Program Director
PhD candidates, Prof. Foulds is the person you want to talk to regarding your program.

David Kristol – Professor Emeritus
If you have the pleasure of meeting Dr. Kristol make sure to ask him how the BME department was created. He was here when it all started!
Dr. Max Roman
GBMES Faculty Advisor

Dr. Roman is most likely the first professor you will meet in the Biomedical Engineering Department when you arrive at NJIT. He has been the BME MS Program Director and Advisor since arriving in the BME department in 2006. During this time, he has seen the MS enrollment more than double to nearly 150 MS students. To accommodate the increasing enrollment, he has actively promoted the introduction of new courses. Dr. Roman is proud to say that the variety, breadth, and quality of courses now offered has helped make the graduate program at NJIT one of the premier biomedical engineering programs in the country.

As director of the MS program, Dr. Roman is involved in every phase of your enrollment as a student. Admission, advising, graduation certification, course scheduling, and even job referencing when you graduate keeps Dr. Roman very busy and always in high demand. In addition, you will find Dr. Roman teaching classes, active in research, and serving as the GBMES club advisor. When asked about being so busy, he says, “I am very proud to have a hand and a direct influence on the lives and careers of each and every student who has gone through our program. Additionally, I am equally proud to know that in some way, through all the students that have passed through our program, I have helped to improve the lives of millions of people and to give something back to society. That is very rewarding.”

Life after New Jersey Institute of Technology

“Internship/Good Thesis is the Way In.” – Pooja Chatterjee

Pooja Chatterjee works as a Software Engineer at Philips Home Healthcare Solutions in the Sleep Therapy Advanced Algorithms Group. She designs and develops medical devices such as CPAP/BiPAP and Servo-Ventilators, which are used for the treatment of sleep disordered breathing and other co-morbid conditions. She develops custom tools in Matlab and LabVIEW to analyze respiratory/cardiac data, lead therapy software testing, create and review regulatory test plans, provide advanced technical support to field issues, and perform competitive testing.

She graduated from NJIT in 2008 with a Master’s Degree in Biomedical Engineering. Her field of specialization is in the area of medical instrumentation and signal processing. The work she does now involves the practical application of Human Physiology, Signal Processing, Regulatory Affairs, Matlab, and LabVIEW courses that she took during her master’s program.

Pooja encourages current students to take the opportunity of participating in an internship or/and master’s thesis because it definitely helps in getting your foot through the door when applying for full-time positions. She herself interned with Datasscope (now part of MAQUET Cardiovascular) as a Biomedical Engineer in the Cardiac Assist R&D group from May of 2007 to July of 2008. During which, she successfully developed a fast and accurate real-time QRS detection and trigger algorithm for Intra – Aortic Balloon Pump. The algorithm achieved a significant AAMI design standard, and has been implemented in the next generation product. During the internship, she became competent in the use of signal processing and statistical analysis tools such as Matlab, MS Excel and Minlab. It also provided her with valuable experience working in a controlled environment for FDA Class III Devices.

In addition to a well-rounded internship, she also took part in a collaborative project by Dr. Joel Schesser and Dr. Ronald Rockland. This project developed an ECG signal analysis tool in Matlab and LabVIEW to help understand the relation between post-exercise heart rate recovery and heart rate variability patterns.

She also adds that in today’s job market, networking is crucial to hiring. Thereafter, it’s plain luck and timing!

“There is more to your M.S., than just classes.” – Nadi Atalla

Nadi Atalla recently graduated from NJIT in January 2011. He received his Master’s Degree in Biomedical Engineering with a concentration in Biomechanics. Nadi