Message from the Chair
Shlomo Carmi, Professor and Interim Chair

Our faculty and staff in the Mechanical Engineering (ME) Department enthusiastically embrace our dual mission of providing a first class education to our undergraduate and graduate students and of conducting cutting edge research.

In Academic Year 2008-2009 we had significant accomplishments, despite substantial budgetary challenges. We had robust enrollment increases: 530 undergraduate students (including 11 BS/MS students) and 87 graduate students (48 PhD's and 39 MS's). The graduation rates were also impressive: BS – 106, MS – 16 and PhD – 7. As for extracurricular activities, we are very proud of our Mini Baja team who this year placed #1 in cost and very high overall. Two of our graduating students were candidates for Valedictorian. Dr. Anne Spence and I hosted the very successful ASME- Mid Atlantic Student Professional Development Conference (SPDC) in April 2009. As a member of ASME's Board of Governors, I strive to bring the ME faculty's accomplishments to the global arena and to the attention of the engineering profession at large.

The research expenditures were in the $3 million range, which translates to about $187,000 per tenure track faculty per year. Significant funding accomplishments were the NSF CAREER Award for Dr. Haijun Su (PI) and the NSF MRI Award for Dr. Liang Zhu (PI), among others. In July 2008 Dr. Weidong Zhu hosted an important international conference on the UMBC campus: ASME's 2008 Mechanics of Slender Structures (MOSS). At this point we would like to express our gratitude to our dedicated staff who showed tremendous passion and commitment, thus making our accomplishments possible.

As for faculty achievements, the list is extensive, so we will try to be brief. Special congratulations go to our colleagues who got promoted this year: Dr. Dwayne Arola to Full Professor and Dr. Marc Zupan to Associate Professor with tenure. We also welcome our new Lecturer Dr. Anselm Tshibangu who joined our faculty this Fall '09. Dr. Tim Topoleski, our Graduate Program Director, who's research makes great strides in biomechanics, was elected Fellow of AIMBE, was awarded the 3-year Presidential Teaching Professorship and was elected President of the Faculty Senate. Dr. Dwayne Arola was selected Faculty Research Fellow and continued to develop substantial collaborations with UMB's Dental School, as well as with NIST. The former ME Chair, Dr. Panos Charalambides, who assembled an impressive record of accomplishments while serving as chair, is spending his sabbatical at the University of Cyprus and is developing research collaborations, especially related to his field of composite materials, with the European Union. Panos and Weidong led important senior design projects funded by the Pratt and Whitney Corporation, a model which we should further develop and emulate. Dr. Weidong Zhu is the recipient of the Daily Record's 2009 Innovator of the Year Award and was appointed to a distinguished visiting research professorship at Harbin University in China. This activity might become an important avenue for attracting talented graduate students. Dr. Uri Tasch, who continued his important research in gait analysis which can lead to diagnosis of a number of diseases, received the Kauffman Fellowship in entrepreneurship and conducted a successful workshop for faculty who will introduce these concepts into our curriculum. Dr. Akhtar Khan continued his impressive research in his field of emerging materials and new metal alloys and made substantial professional contributions as the Editor-in-Chief of the

International Journal of Plasticity. Akhtar is getting ready for his sabbatical and will visit and develop research collaborations with labs in Japan, Korea, India and others. Dr. Appa Anjanappa returned from a successful sabbatical, establishing numerous collaborations with researchers in India and Hong Kong, which can also serve as an avenue for recruiting talented graduate students. His recently awarded MIPS project is leading to important collaborations with UMB's Physical Therapy Department. Dr. Marc Zupan developed important research relations with the Navy which can lead to numerous internships and co-ops for our students, with the hope of attracting them to our graduate program. Marc agreed to take the lead in developing new initiatives for recruiting graduate students, in addition to his commitments as a member of the joint UMBC/UMB Graduate Council. Dr. Chuck Eggleton continued his extensive biomedical research with NIH, in addition to assuming the responsibilities as Undergraduate Program Director. This activity, which includes implementation of the new Gateway criteria, is already showing high quality results for our program, as we are getting ready for the ABET accreditation. Dr. Liang Zhu, while continuing her outstanding research in the field of biomedicine, is taking the lead in the accreditation and outcome assessment process. Dr. Dawn Bennett obtained good results in developing electro-microfluidic devices for the control of analytes, which can lead to important applications. Dr. Anne Spence continued her outstanding work in STEM education which attracts attention at the State's highest levels: the Governor, as well as the MD Schools Superintendent. Her passion in building the future engineering workforce is unsurpassed. Dr. Ronghui Ma continued her impressive research in novel materials processing and MEMs devices which can lead to biomedical applications. Dr. Tony Farquhar received an important grant from the World Bank to develop early warning sensory devices in order to avoid seasonal damaging mud slides in the Machu Pichu area of Peru. Dr. Haijun Su, who's Virtual Reality Lab is becoming a big attraction for visitors to campus, is the recipient of the 2009 Best Paper Award by the ASME Design Division. For the second year, Haijun agreed to be the coordinator of the very successful departmental seminar series. Our colleague Dr. Chris von Kerczek, now Professor Emeritus, continues to teach and be active in the department, and is getting ready to publish a textbook in the field of applied mathematics for engineers.

The department is now in the process of establishing the Design Realization Lab, as well as an Industry and Alumni Advisory Board (IAB), two important elements in the forthcoming ABET accreditation process and the upcoming Academic Program Review (APR). The anticipated delivery of our program at Shady Grove is now postponed due to USM's budgetary constraints. During AY 2009-2010 we will conduct a search to fill the newly authorized second Lecturer position, while the Machinist position will still remain open due to the recent budget cuts. Our major departmental priority would be to maintain and increase research funding and simultaneously the PhD enrollment and production.

While we are very proud of our graduates, we would like to reconnect and brag about the success of our alumni. We would like to call upon our alumni to reestablish their connections with us, as we plan to invite them back to campus for a meaningful event, visit our labs and classes and witness first hand the progress we have made. The ME department is determined to overcome current challenges and is looking forward to a successful AY 2009-2010. Good luck and best wishes to everyone!