

Linked by Design



The Mechanisms and Robotics community has been very fortunate in its long-standing relationship with the *ASME Journal of Mechanical Design*, growing and developing in many ways parallel to the journal. Like the journal, the ASME Mechanisms and Robotics (M&R) Committee that represents this community underwent a name change some years ago, adding “and Robotics” to the original “Mechanisms” name of the committee. Also like JMD, the M&R committee has divided over the course of time to form new entities. Both the Micro- and Nano-Systems Committee and the Mechatronic and Embedded Systems and Applications Committee incubated as M&R sub-committees prior to their independent establishment.

While the formation of the *Journal of Vibration, Acoustics, Stress, and Reliability in Design* (now the *Journal of Vibration and Acoustics*) out of JMD in the early 1980s and the recent founding of the Journal of Mechanisms and Robotics have somewhat altered the scope of topics in JMD, they have not changed its essence—excellent scholarship in design. In fact, the split of these journals from JMD created the space and opportunity for growth that has made JMD the vibrant journal it is today. The same can be said of the M&R community. The theory and application of the kinematics and dynamics of machines remain at the core of the community’s research activities. Moreover, the introduction and ultimate splitting off of research work in closely related areas has brought an infusion of new ideas and enabled the growth that the community is currently experiencing. One tangible measure of this growth is the increased participation in the Mechanism and Robotics Conference at the ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC). A brief history places that participation in full context.

As affectionately described in Erskine Crossley’s paper “Recollections From Forty Years of Teaching Mechanisms” (*ASME Journal of Mechanisms, Transmission, and Automation in Design*, 1998, **110**, pp. 232–242), the first “Conference on Mechanisms” was held in 1953 at Purdue. In 1964, it evolved into the ASME Mechanisms Conference, which was held every two years. This practice continued until the Mechanisms and Robotics Conference became an annual part of the IDETC in 2005. The M&R commu-

nity is honored to continue the tradition of organizing the IDETC in even years and pleased that the Conference on Mechanical Vibration and Noise will be joining the other even-year conferences at the 2010 IDETC in Montreal. Just as the breadth of the design topics covered in JMD provides cross-fertilization of ideas, so too does the participation of varied research communities in the IDETC provide for greater exchange of design insights.

Activities at the 2010 Mechanisms and Robotics conference highlight the foundational elements of M&R research, the most current applications of those elements, and the influences of both JMD and other design communities. Symposia on mechanism synthesis, theoretical kinematics, and robot dynamics reinforce the core principles. Those on compliant mechanisms and biologically motivated mechanisms emphasize the innovative application of these principles. A quick review of JMD papers from the last two years and those awaiting publication (made easy by the excellent asmejmd.org web page) identifies recent novel contributions in all of these areas. New to the conference this year is a symposium on the “Review of Recent Mechanical System and Device Patents.” This effort specifically reaches out to colleagues in industry, inviting them to present short descriptions of the basic idea behind a particular patent, the need it satisfies, and the process of that idea’s conception and development to a patentable invention. While not identical, it parallels JMD’s increased attention to design innovation papers in that both are less traditional publication formats that communicate significant design content to the community. The second new symposium, “Mechanisms and Robotics Teaching and Education,” was inspired in part by the ASME International Design and Design Education conference held regularly as part of the IDETC. It also parallels the proper home in JMD of archival papers in design education. Perhaps most encouragingly, the 2010 Mechanisms and Robotics conference has received a record number of paper submissions, so the community, including JMD readers and authors, is responding favorably to these efforts. For this, the M&R community is most grateful.

In summary, the M&R community has experienced significant growth within the last five years. It shifted to formal annual participation in the IDETC, two of its sub-committees formed full technical committees of the Design Division, and it is attracting more paper submissions than ever to the Mechanisms and Robotics conference. Clearly, this growth would not be possible without a respected venue like JMD in which to disseminate the design-oriented research of the community. The M&R community treasures its long-standing relationship with JMD and looks forward to continued growth alongside the journal in the years to come.

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