EASTERN MICHIGAN UNIVERSITY

Graduate Research Fair
Sigma Xi Keynote Speaker
Monday, March 24, 2003
Salon Room, McKenny Union
7:30 p.m.

EMU welcomes high school, undergraduate, and graduate students to attend the annual Sigma Xi keynote speaker event. Each year we invite science, math, and technology students to hear cutting-edge speakers from across the country. We also encourage social science and humanity students to ponder the impact of new trends in technology. This year we are pleased to bring you:

Dr. Jacqueline Krim

Micro-Electro-Mechanical Systems: These Squeaky Wheels Will Get No Grease

Dr. Krim is a professor of physics at North Carolina State University. Her research interests include nanoscale science and technology, solid-film growth processes and topologies at sub-micron length scales, and nantribology (the study of friction, wear, and lubrication at atomic length and time scales). She is a Fellow of the American Physical Society and the American Vacuum Society, a Sigma Xi distinguished lecturer for 2001-2003, and a recipient of a Presidential Young Investigator award from the NSF. She has published and lectured widely on the topic of the atomic-scale origins of friction.

Nanotechnology is an emerging, cutting-edge technology that relies on the micro-fabrication of small-scale mechanical components and their integration with on-board electronic processing. It is widely believed that the future will be dominated by such tiny devices, which will be used in such diverse applications as gas and pressure sensors, chemical analytic "microlaboratories," and airborne "nanosatellites." Because nano-devices react to mechanical signals, many require lubrication that prevents heating and wear of the device. There is an increasingly pressing need to carry out new and fundamental research relevant to the development of optimal submicron-scale mechanical systems. This talk will address how knowledge of the fundamental origins of friction can be applied to nanotechnology.

Institutes, Centers, and Interdisciplinary Research
15 May 2002 – 1st Meeting

AGENDA

-Discussion of 2002 committee goal
-Discussion of potential committee tasks
    Task 1: Categorization of institutes and centers
    Task 2: Refinement of strategic initiatives from 2001
    Task 3: Recommendations for new institutes or centers
    Task 4: Framework for interdisciplinary research promotion
    Task 5: Access to information regarding institutes and centers
    Other?
-11:45 – Don Loppnow

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1. Discussion of 2002 Committee Goal

2001 Committee Goal: to develop strategic planning initiatives that strengthen EMU's efforts to develop a strong support base (administrative and infrastructure) over the next few years that maximize the likelihood of accomplishing this goal

Possible Elements for 2002 Goal:
-Build on 2001 work
-interdisciplinary theme
-focus on institutes and centers with research and/or external emphasis
-external funding improvement

2. Discussion of Proposed Tasks –

-Other committee directions for inclusion
-Volunteers & leaders for work groups
-Brainstorming for Tasks 1, 3 and 4
    Task 1 – criteria and advice
    Task 3 – peer institutions, potential units at EMU
    Task 4 – components of "framework"

-Timeline for work