Proposal to National Science Foundation
For a Industry University Center for Research Collaboration (I/UCRC)
on
Advanced Cutting Tool and Tooling Technologies (ACT³)
By
Georgia Institute of Technology
And
Michigan State University
What is I/UCRC?

The Industry/University Cooperative Research Centers (I/UCRCs) program develops long-term partnerships among industry, academe, and government. The centers are catalyzed by an investment from the National Science Foundation (NSF) and are primarily supported by center members, with NSF taking a supporting role in their development and evolution. I/UCRCs stimulate highly leveraged industry/university cooperation by focusing on fundamental and applied research recommended by Industrial Advisory Boards.
Research Thrust Areas:

(1) Identification of wear mechanisms under various machining conditions
(2) Predictive Modeling of wear progression and tool life
(3) Design of multi-layer coatings from the local wear models
(4) Development of brazed materials such PCD and CBN by dissolution
(5) Application of tool wear models for the selection of tool materials
(6) Optimization of tool geometry and cutting parameters
(7) Determination of tool coating effects on machinability and efficiency
(8) Control of part integrity through tooling design
Research Partners:

Georgia Institute of Technology
Michigan State University
National Laboratories
Cutting Tool Manufacturers
Machine Tool and Fixture Manufacturers
Leading machining technology and cutting tool industry users
Time Line:

June, 2006    Letter of Intent
August, 2006   Planning grant proposal with supporting letters from partners
February, 2007    NSF approval of a planning grant
February, 2007   Full Proposal with commitment letters from partners