

Machining, Tribology, Metrology, Forming & Corrosion



Bharat Bhushan (ME)

- Interdisciplinary areas of bio, nanotribology, nanomechanics & nanomaterials characterization



Allen Yi (ME/ISE)

- Precision Engineering, Optical Fabrication & Micromachining

Taylan Altan (ISE) & Rob Wagoner (MSE)

- Metal Forming Processes, FEM to Optimize Process Variables, Die / Tool Design, Metal Forming Machines, Material Properties & Tribology in Metal Forming.



Glenn Daehn (MSE)

- High velocity metal forming/joining; Director of OMI

Rudy Buchheit and Jerry Frankel (MSE)

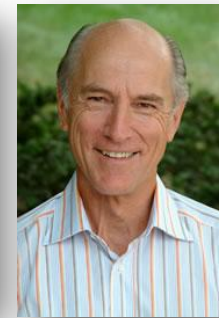
- Corrosion Characterization and Modeling



Rajiv Shivpuri (ISE)

- Machining, metal forming and microstructure

Process, Microstructure & Performance Modeling

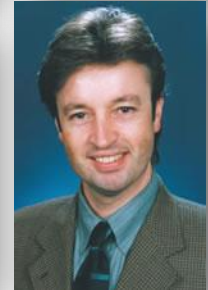


Doru M. Stefanescu (MSE) & J. Brevick (ISE)

- Solidification Process Modeling; Casting Processes and Life-Cycle

Rajiv Shivpuri (ISE), David Farson S. S. Babu (MSE/WE)

- Manufacturing processes, Design and analysis of machine tools, Fatigue & fracture,
- Heat and Mass Transfer during welding & microstructure evolution



W. Windl, J. C. Zhao, S. S. Babu and Yunzhi Wang

- First Principles, Computational thermodynamics, kinetics & phase field simulations



Somnath Ghosh & Peter Anderson

- Solid Mechanics Computational simulations.



Additive Manufacturing



Gary Kinzel (ME)

- Rapid design prototyping

Hamish L Fraser (MSE)

- Laser Near Net Shaping & Kinetic Metallization



John Lippold (MSE/WE)

- Fusion Welding and Friction Surfacing

Marcelo L. Dapino (ME) & Suresh S. Babu (MSE)

- Embedding of smart materials, sensors and actuators within solids through ultrasonic additive manufacturing
- Very High Power ultrasonic Additive Manufacturing – Processing & Characterization

Extensive collaboration with EWI, ORNL, Industries and Small-business in this area

Welding & Joining



Sudarsanam Suresh Babu: Phase Transformations,
Welding Metallurgy & Computational Modeling

Avraham Benatar: Design for Fitness, Plastics &
Adhesives

Glenn Daehn: Impact Welding and Forming

David Farson: Laser Materials & Nanoscale Processes

Kathy Flores: Joining of Bulk Metallic Glasses

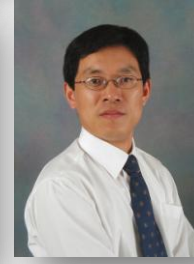
John Lippold: Welding Metallurgy

Stanislav Rokhlin: NDE, Sensors & Health Monitoring

Xiadong Sun (ME): Thermal-hydraulics, reactor safety &
design

Boian Alexandrov: Phase Transformations, Weldability

David Phillips: Solid-state welding, deformation-
resistance welding



- **Also few other faculties in ISE, MSE and ME**



Design

Tony Luscher (ME)

- Assembly methods and strategy
- Feature based joining

Blaine Lilly (ME)

- Product design
- Tool and die design

Jim Arnold, Carolina Gill, Scott Shim (Industrial Design)

- Fusion Welding and Friction Surfacing

C. G. Cantemir (CAR) (Automotive Systems)

