Dr. Pnina Ari-Gur, Professor

Research:

- **Smart materials** for medical, aerospace, automotive and energy applications
  - Nanostructured shape memory alloys and devices
  - Magnetic shape memory (MSM) alloys
- Giant magneto-caloric effect for alternative energy
- Ductile magnesium (Mg) alloys
- 3D **virtual reality** materials laboratory
- **International interdisciplinary** research collaboration
- Football helmet redesign to prevent concussion
- Research supported by **NSF, NASA, Air Force Office of Scientific Research**, and industries and foundations

Laboratory:

- **Top-of-the-line** X-ray diffractometer: structure of materials, residual stresses, texture, nano-structures, nano-layers, all at temperatures from -188 to +600 °C.
- Scanning electron microscope (**SEM**) with **EDX** capability
- Vacuum furnace, arc-melting furnace, microscopes, and micro-hardness testers.
- Also: off-campus access to neutron and synchrotron diffraction (at National Laboratories)