



Rollett's research focuses on microstructural evolution and microstructure-property relationships in 3D, using both experiments and simulations. Interests include 3D printing of metals, materials for energy conversion systems, strength of materials, constitutive relations, microstructure, texture, anisotropy, grain growth, recrystallization, formability, extreme value statistics and stereology. Relevant techniques highlight spectral methods in micro-mechanics, Dynamic X-ray Radiography and High Energy Diffraction Microscopy. Important recent results include definition of process windows in 3D printing through characterization of porosity, 3D comparisons of experiment and simulation for plastic deformation in metals, the appearance of new grains during grain growth, and grain size stabilization. He has been a Professor of Materials Science & Engineering at Carnegie Mellon University since 1995 and before that was with the Los Alamos National Laboratory. His most recent honor was the award of US Steel Professor of Metallurgical Engineering & Materials Science in 2017. He is the co-Director of CMU's NextManufacturing Center that is dedicated to advancing manufacturing especially through 3D printing. He has over 200 peer-reviewed publications