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## Accomplishments

Developed laser scanning microscopy (LSM) of superconducting devices and materials

- Imaging of phase-slip lines in superconducting strips

- Imaged inhomogeneities in  $T_c$ ,  $I_c$  in patterned structures and HTS coated conductors

LSM imaging of microwave currents in superconducting devices

- Buildup of edge currents quantitatively imaged

- Interaction of currents with sample defects

- Imaged local sources of nonlinear (intermodulation) generation

- Phase-sensitive imaging of microwave currents

LSM imaging of superconducting metamaterials

- Device showing electromagnetically induced transparency

- Spiral resonators

- Imaged and induced coherent response of rf SQUID metamaterials

- Modal structure of left-handed transmission line resonators

Discovery and imaging of the anisotropic nonlinear Meissner effect in line-nodal superconductors

- Discovery of Andreev bound state photo-response and anisotropy in unconventional superconductors