

1. **Research Title:** Liquid Metal Materials for Soft Electronics, Optics, and Mechanics
2. **Individual Sponsor:**
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3. **Academic Area/Field and Education Level:** Chemistry, Chemical Engineering, Polymer Science and Engineering, Materials Science, Mechanical Engineering, Electrical Engineering (BA/BS, MS or Ph.D. level)
4. **Objectives:** Processing, packaging, and integration of flexible/stretchable conductors for architected responsive constructs and physiologically relevant components
5. **Description:** Low melting point metal alloys with majority constituents such as gallium and bismuth have recently provided unprecedented intrinsic properties for flexible, stretchable, and reconfigurable electronics. Colloidal embodiments of these materials in particle form have enabled a wide array of printed and easily manufactured devices. The liquid metal colloids suspended in a solvent exhibit melting point suppression, high surface area, and can be tuned to be chemically compatible with a range of interesting substrates from responsive polymers to active electronics in order to develop a range of new smart systems. The opportunity exists to explore new form factors, material integration, and utilization of these liquid metal alloys to generate a wide range of novel responsive and resilient systems.
6. **Research Classification/Restrictions:** This research is unclassified with the goal of publication in the open literature, however the general research area is Distribution D.