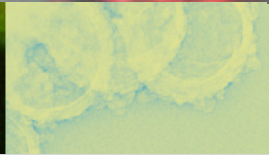
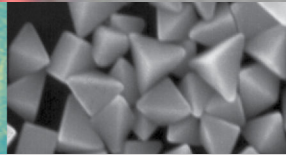
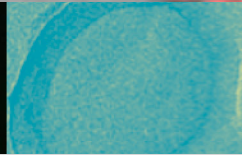
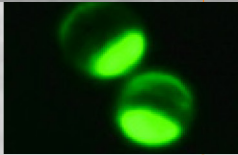
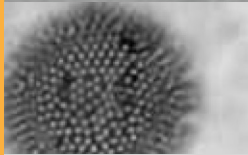


Programmable Assembly of Soft Matter



The Research Triangle MRSEC is focused on the study and development of soft matter components to be used in programmable assembly, and functional materials that result from the assembly of these components.

Understanding, harnessing and exploiting the dynamic processes related to the aggregation of particulate and macromolecular assemblies represent significant current frontiers in materials research. Strategically located in the Durham- Raleigh-Chapel Hill (Triangle) area of North Carolina, a thriving technological and economic hub with a high concentration of materials innovation activity in both academia and industry, the Research Triangle MRSEC is a national resource for materials science and engineering research and education. It leverages complementary strengths of four universities in the area (Duke University (lead), North Carolina State University, North Carolina Central University and The University of North

Carolina at Chapel Hill). The Triangle MRSEC is having a major national and international impact in soft matter materials science through generation of (i) new fundamental insights and theoretical understanding, (ii) new building blocks and design principles, (iii) new applications and uses for colloidal and macromolecular materials and their higher order assemblies, and (iv) a comprehensive education and outreach program. The center coordinates access to, and establishment of, specialized materials research facilities across the Research Triangle, and its researchers have access to a global network of research resources.

HIGHLIGHTS...

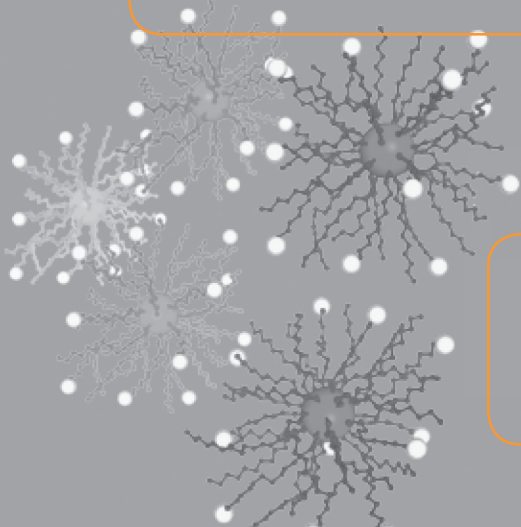
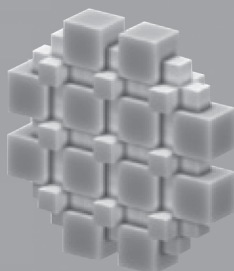
Multicomponent
Colloidal Assembly
by Comprehensive
Interaction Design

Genetically Encoded Polymer
Syntax for Programmable
Self-Assembly

DIRECTOR: Gabriel P. Lopez
<http://mrsec.duke.edu/>

RESEARCH FUNDAMENTALS...

Shape, surface texture, and polarity of colloidal particles and external driving fields enable programmable assembly.



Design of peptides whose phase behavior facilitates programming of their assembly into hierarchical supramolecular structures.

In both biotic and abiotic realms, Nature is replete with intricate structures assembled from varied nanoscale components that provide inspiration for new types of functional materials to address current societal problems and to provide new economic opportunities. //

Gabriel P. López, Director,
Research Triangle MRSEC



Triangle MRSEC Offers Diverse Education and Partnerships...

- EDUCATION : A Research Triangle-wide Soft-Matter Graduate Curriculum.
- EDUCATION : A MRSEC Fellows program that provides graduate students, postdocs and undergraduate research fellows opportunities to gain leadership, mentoring and entrepreneurial experience in a globally competitive research environment.
- OUTREACH: A Research Triangle-wide REU program.
- OUTREACH: Partnerships with local high schools and museums.
- PARTNERSHIP : A research and educational partnership with the Center for Neutron Research at NIST.
- PARTNERSHIP : A partnership with the German-funded International Graduate Research Training Group program on Self-Assembled Soft Matter Nanostructures at Interfaces.

OUTREACH

More information about the workshops, internships, partnerships, and educational opportunities are available at:
<http://mrsec.duke.edu/>

