

SUMMER 2024 – SC INBRE RET PROJECT DESCRIPTION FORM

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Research Subject Area	Polymeric Nanoparticles for Brain Imaging

A. Briefly describe overall research program at your laboratory.

We develop polymer-based imaging systems with the goal of better diagnosing disease in the brain.

B. Briefly describe specific project(s) for your teacher:

The teacher on my project would learn how to make polymersomes, which are polymer-based nanoparticles structurally similar to the lipid nanoparticles used in the COVID-19 vaccine. They will learn to encapsulate ultra small iron oxide nanoparticles into the polymer nanoparticles to enhance contrast visualization under magnetic resonance imaging (MRI). The teacher will learn how to image and analyze these particles under MRI conditions on campus.

C. Will any other people (post docs, grad students, undergraduate students, colleagues, etc.) be involved directly with your teacher?

The teacher will likely work closely with graduate students to accomplish his/her goals.

D. Will you require any advanced reading/preparation for the teacher? If yes, please briefly describe.

Yes – I will send some must read articles (probably 4-5 max) to help prepare the teacher for laboratory work.