

GM085 - Current, Pending and Completed Support: Pending Proposals

Description – This report is part of the Current, Pending and Completed Support package. All proposals that are still pending funding are displayed along with the year 1 requested effort and total proposed dollars.

Purpose – This report provides the data needed to assemble the current and pending support section of a grant proposal.

Accessed By (role or department) – OSR, School Administrators, Department Administrators and ASRSP

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Fixed Filters

Proposal Status
Proposal Type

Defined Filters:

Investigator Name (required)

Sort By:

Originating Sponsor
Proposal No.
Subproject No.
Proposed Project Date

Northwestern	Current, Pending, and Completed Support Pending Proposals - All Roles Cost Sharing Not Included Proposal Project Start Date Greater Than Dec 2, 2016	Investigator:
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Records where the PI has no effort and no requested salary on the PD budget will display a role of 'N/A'. The PI may actually have requested effort and should be confirmed on the Proposal Routing Form in InfoEd. Records where the selected employee has a role other than PI with no effort and no requested salary on the PD budget will not show on this report.

Institution Number	Subproject Number	Department	Investigator	Role	Main PI	Title	Sponsor	Originating Sponsor	Academic PD Person Months	Calendar PD Person Months	Summer PD Person Months	Proposed Project Start Date	Proposed Project End Date	1st Budget Period Direct Costs	Total Direct Costs Proposed	Total Costs Proposed	Submission Date	Proposal Status	Project Summary
		4011400 - Chemistry		PO/PI		Reconfigurable Matter from Programmable Atom Equivalents	Air Force Office of Scientific Research	Air Force Office of Scientific Research	0.00	0.00	0.58	1/1/17	12/31/21				6/29/16	Submitted	We propose to use a bio-inspired approach to assemble a diverse set of nanoparticle building blocks into reconfigurable, structurally sophisticated, and highly functional colloidal crystals. In particular, nanoparticles densely functionalized with DNA, or other nucleic acids of interest, will be used as programmable atom equivalents (PAEs), where specifically designed sequences are used as "bones" to connect nanoparticles and to "encode" physical structure. Groundbreaking discoveries in the Minkin group over the last decade with PAEs, enabled by AFOSR-funded research, have established a vast new phase space of previously inaccessible nanoparticle-based materials and, in so doing, demonstrated the extraordinary structural control afforded by our nucleic acid-mediated approach to nanoparticle crystallization. In a collaborative basic research effort, we will expand on this unprecedented degree of structural control through the creation of a new class of functional and reconfigurable PAE-based crystals. Specifically, we will synthesize and investigate new types of structurally sophisticated architectures that feature the dynamic interactions and responsiveness characteristic of most natural materials. These novel materials are expected to exhibit emergent physical properties that can be tuned on-demand and would not be possible to synthesize using any other known technique. In addition to leading to new materials important to the Air Force for high-performance structural, optical, magnetic and electronic applications, this research will contribute significantly to advancing many areas of fundamental science.