IFPRI BRIEF TEMPLATE

Check One: ☒**Project** ☐**Review** ☐**Collaboration**
☐**Workshop** ☐**Other**

Descriptive Title	Segregation of cohesive powders
Working Title[1]	Segregation of cohesive powders
Technical Area[2]	Dry systems
Date	13-6-2023
Short Description	Cohesive powders flow differently from free-flowing, non-cohesive particles. As a consequence, the nature of particle segregation is also different. In the proposed research project, we aim to expand the design space for predicting segregation from non-cohesive mm-sized particles to include cohesive particles, with an emphasis on mixtures of large and fine particles where the fine particles are substantially smaller than the large particles.
Objectives	- Expand the understanding of segregation for fine cohesive powders in dense flow (cohesion may be a consequence of either by liquid addition or particle surface-modification. - Determine parameters that are key to predicting the character of the segregation of fine particles from much larger particles. - Evaluate the effect of the concentration of fines and flow parameters on segregation with emphasis on understanding the scalability of the cohesive effects to larger systems.
Scope	The project should involve experimental work and not be limited solely to DEM simulation or continuum modeling. Out of scope: Dilute phase systems & segregation caused by elutriation

Recommended Contractors (2 or 3)		
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Name	**Organization**
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[1] Title used in meeting agendas and file archives

[2] One or more from the following list: W = wet systems; D = dry systems; F = particle formation; SR = size reduction; M = modeling; SE = systems engineering