Challenge #1: Developing a novel sieving method for the size sorting of drug releasing microspheres

- Small spherical particles fabricated from biocompatible polymers
- Can provide tunable drug release of small molecules and growth factors
- Fabrication method yields a wide range of particulate sizes

Scanning electron microscopy image of drug releasing microspheres
Our desired microsphere size is <40μm.
Currently use a reversible strainer with a 37μm pore size and a
diameter of ~1cm to filter ~320mg of microspheres in one
batch.
The filter is rapidly blocked by large particles and constantly
needs to be cleared, making the whole process takes upwards
of an hour or two depending on the overall quality of the
produced microspheres.
The strainer must also be loaded and cleared manually
meaning no other work can be completed during that period.
The blocked filter also captures smaller particles that get
cleared with the larger ones leading to loss in yield.

Develop a novel method for separating these
microspheres by size
Find a more efficient and effective method of size separating drug releasing microspheres

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- Will provide up to $300 in supplies for this project