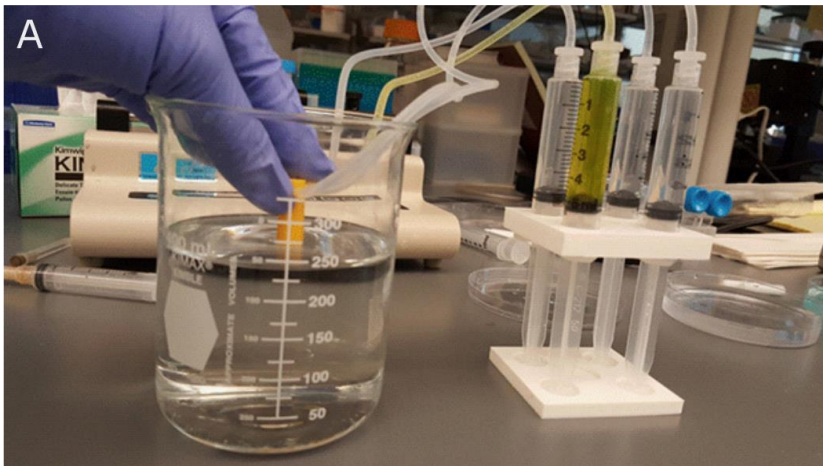


Research Opportunity

Project summary: Coronary heart disease can affect elderly people who lack vessels suitable for use in coronary artery bypass grafting, the preferred surgical treatment. There is a clear need for artificial small diameter vascular grafts. The goal of this project is to develop a device to extrude a multi-layered hydrogel scaffold, pre-seeded with cells, to speed the creation of cellularized, small diameter vascular grafts. You will have the opportunity to *independently design, fabricate, and test prototypes* of the device.

- Length of commitment: one year (including summer) starting spring semester 2018
- *Financial support* will be provided for the summer.
- No prior experience necessary. Freshmen encouraged to apply.

Contact: Sarah Hewes (sh62@rice.edu)



Previous Success

This figure shows what a former student accomplished over one summer. Imagine what you could do in a year. She started out with no biofabrication experience and learned everything in lab.

All the skills you need can be learned on the job. Just bring your *enthusiasm and hard work*.

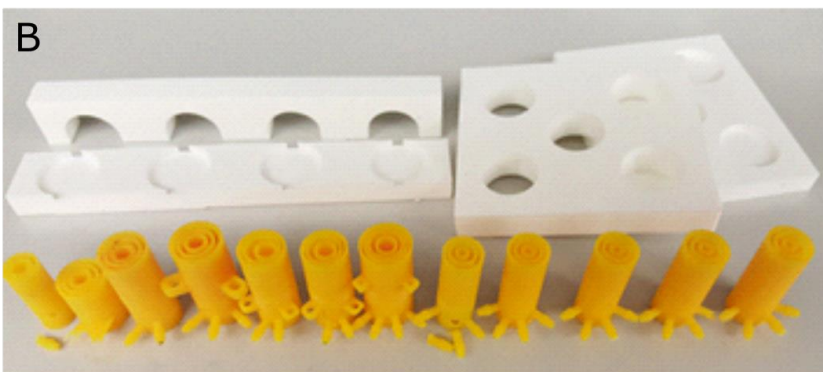


Figure 1: A) coronary artery extruder setup, including syringe holder (white) and coaxial extruder (yellow). B) successive prototypes of the syringe holders and coaxial extruders. C) coaxial extruder 3D model design. D-F) hollow alginate tubes successfully fabricated with coaxial extrusion (tube diameter approx. 4 mm) (all work by former undergraduate student Cassidy Andrichik)

