



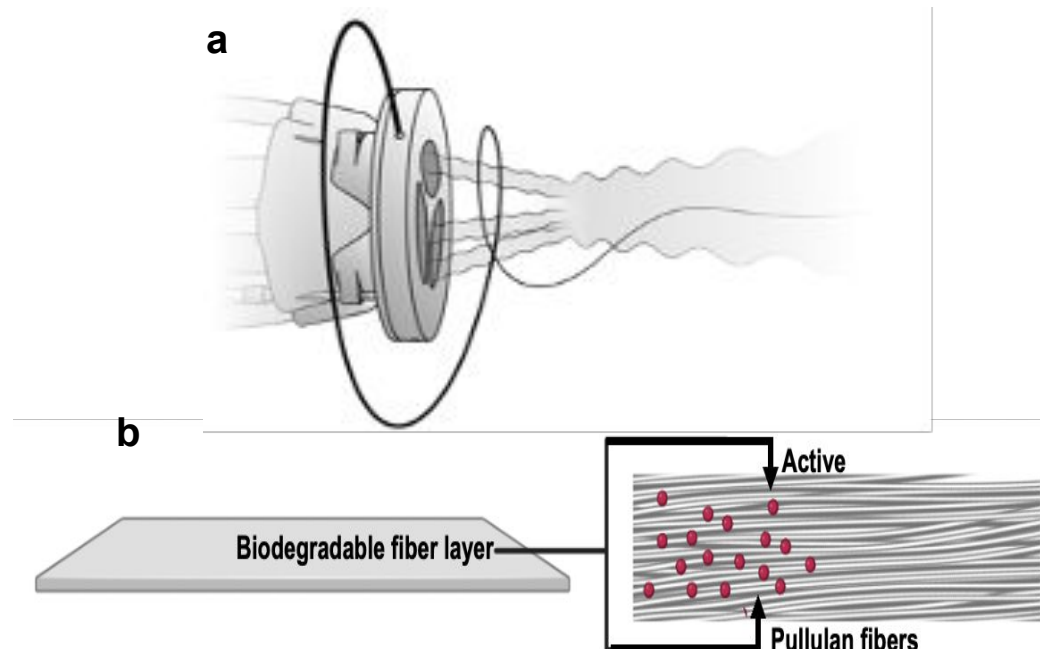
# High throughput production of nature-derived biodegradable polymer micron/nanofibers

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My research explores the creation of nanofibers using pullulan, a sustainable polymer. Nanofibers were produced using a technique called Focused Rotary Jet Spinning (FRJS). FRJS is technology similar to a cotton candy machine, with the addition of an air stream to focus the fibers produced to a certain area. This allows for a large quantity of fibers to be rapidly produced. Along with this, I investigated the effects on the fibers after adding different additives to this polymer. Effects were based on how the fibers' general composition changed, the fiber diameter, and change in the fiber strength.



**Fig. 1 a.** Focused Rotary Jet Spinning (FRJS) **b.** In-depth look at Pullulan fiber with additive

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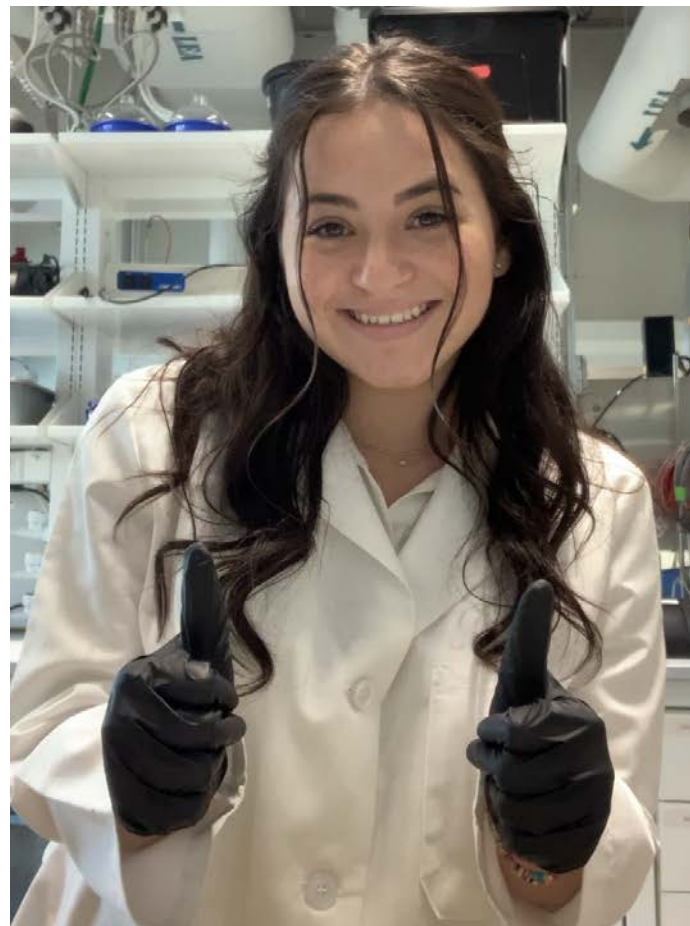
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Catherine Pfaltzgraff is a rising junior from Harker Heights, Texas attending Texas A&M University. She is majoring in Chemistry, with a concentration on chemical education. Catherine has a passion for sustainable, green chemistry.

The REU program has given me the opportunity to explore research. The Disease Biophysics Group is filled with people how push me, personally and as a scientist. Through my time here I has developed an interest in pharmaceutical and drug delivery processes and hope to continue research in this area later in the future.



**Fig. 2** Scientist Catherine Pfaltzgraff in the lab