

Undergraduate Research Program

Gabrielle (Gabby) Benuska



Major: Bioengineering

Mentor: Cole DeForest, Chemical Engineering

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Current research project: Controlling 4D Stem Cell Differentiation in Hydrogels Using Site-Specifically Modified Growth Factors

CELEBRATE **UNDERGRADUATE** **RESEARCH!**

Students, alumni and professors reflect on the 20th anniversary of the Undergraduate Research Symposium.

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Translate your work so that we can all understand its importance

My current research involves controlling the differentiation of human Mesenchymal Stem Cells (hMSCs) using modified growth proteins TGF-beta and BMP-2 which promote differentiation of hMSCs into cartilage and bone. The proteins Jared Shadish, my graduate student mentor, and I have synthesized are modified with a peptide so that we can use light chemistries to pattern the proteins into a hydrogel. The bound proteins can then control the growth and differentiation of the cells encapsulated in the hydrogel. However, before we pattern the proteins into hydrogels, we first need to verify bioactivity of the proteins we synthesized by differentiating hMSCs.

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ADVISING INFO

[Steps to URP Advising](#)

What is the most challenging and/or sometimes frustrating aspect of your undergraduate research experience? What did you learn from it?

Research doesn't work a large majority of the time. It involves a massive amount of trial and error, and a lot of patience and determination. But in the long run, the pay off is very rewarding for me. One of the greatest feelings from being involved in research is when I have been trying the same experiment for months, and then one day all of that hard work pays off and it works out.

What advice would you give a student who is considering getting involved in undergraduate research?

There is an overwhelming amount of research, especially at UW, so it can be really challenging to figure out what you want to commit to. The sooner you start looking for research, the more opportunities you can take advantage of.

1) General questions or just getting started?

RSVP to attend an [Undergraduate Research Info Session!](#)

2) Already involved in research or following up on an info session?

Attend Drop-In Advising

Autumn Drop-In Schedule

Wednesdays 2:00 p.m. - 4:00 p.m.

Thursdays 10:00 a.m. - 12:00 p.m.

Notes: URP will not offer Drop-In Advising on December 18-29. Drop-In Advising will be cancelled on Wed. Jan 10

If the times above don't work for you:

Please email urp@uw.edu to schedule an appointment

URP Autumn Quarter Info Sheet

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