

# EYE DROPPER ASSISTANT, BME 402

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Note: Team member Tommy is currently participating in a Co-Op and is devoting time to that position. Tommy will work on what he can this semester for the project but due to this conflicting commitment, his contributions *may* be limited.

## Problem Statement

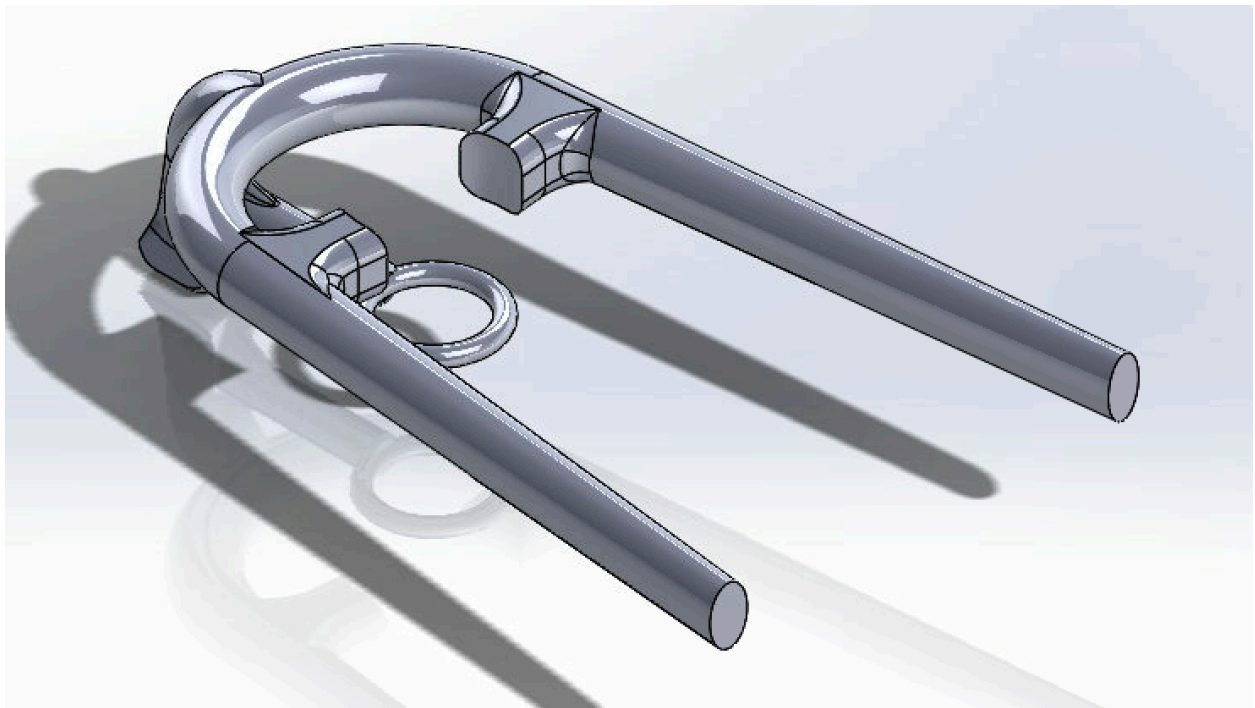
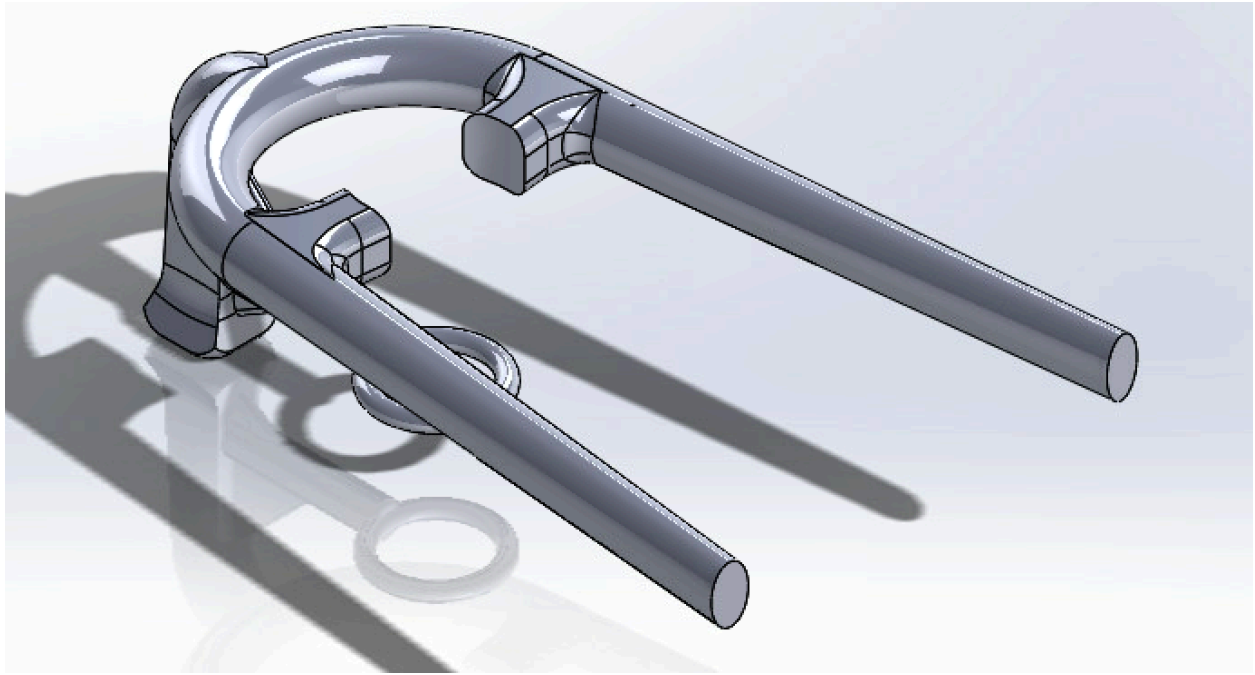
Administration of eye drops is difficult for patients, especially older adults and those with limiting diseases like arthritis. This results in eye drop waste and tip contamination. The team will design a device to assist patients in squeezing the eye drop bottle while releasing a consistent amount of solution per drop. This device will improve the administration of eye drops for the patient while minimizing eye drop waste.

## Brief Status Update:

With the semester coming to an end, the team is working on finalizing the executive summary for the Tong award, as well as creating the final poster for presentations. There is still prototyping going on to explore options for a more universal design. There is also work being done on packaging and labeling for the device.

**Difficulties & Advice Requests:** N/A

### Current Design:



### Design Changes:

- Nose piece removed and platform implemented for user to rest on eyebrow bone.
- Altered the squeezing mechanism to be more uniform for injection molding.
- Separated components to allow for less complex injection molding procedures.

## Materials and Expenses:

Item	Description	Manufacturer	Part Number	Date	QTY	Cost Each	Total	Link
<b>Existing Devices</b>								
<b>Droppy Eye Drop Dispenser</b>	Competing Design	Droppy, Amazon	DR001	9/25	1	9.99	9.99	<a href="#">Link</a>
<b>GentleDrop Eye Drop Guide</b>	Competing Design	GentleDrop, Amazon	ASIN: B0BQBH RKV1	9/25	1	17.99	17.99	<a href="#">Link</a>
<b>Prototyping</b>								
<b>Silicone Eyelash Curler</b>	Prototype Materials (Handle Grips)	PETUNIA SKINCARE, Amazon	ASIN: B00UVL NDVQ	10/25	1	7.49	7.49	<a href="#">Link</a>
<b>MakerSpace Print</b>	Prototype v1	UW Makerspace Ultimaker 3D Print	N/A	10/31	1	4.96	4.96	N/A
<b>MakerSpace Print</b>	Prototype v2	UW Makerspace Ultimaker 3D Print	N/A	11/10	1	5.07	5.07	N/A
<b>MakerSpace Print</b>	Prototype v3	UW Makerspace Bambu Labs 3D Print	N/A	11/13	1	4.5	4.5	N/A
<b>MakerSpace Print</b>	Prototype v3	UW Makerspace Bambu Labs 3D Print	N/A	11/14	1	4.96	4.96	N/A
<b>MakerSpace Print</b>	Prototype v3	UW Makerspace Ultimaker 3D Print	N/A	11/15	1	8.16	8.16	N/A

Item	Description	Manufacturer	Part Number	Date	QTY	Cost Each	Total	Link
<b>MakerSpace Print</b>	Prototype v4	UW Makerspace Ultimaker 3D Print	N/A	11/17	1	10.08	10.08	N/A
<b>MakerSpace Print</b>	Test Fixture	UW Makerspace Ultimaker 3D Print	N/A	11/29	1	13.78	13.76	N/A
<b>MakerSpace Print</b>	Final Prototype	UW Makerspace Ultimaker 3D Print	N/A	12/1	1	7.36	7.36	N/A
<b>MakerSpace Print</b>	Multiple Final Prototypes	UW Makerspace Ultimaker 3D Print	N/A	12/8	1	11.6	11.6	N/A
<b>MakerSpace Print</b>	Multiple Final Prototypes	UW Makerspace Ultimaker 3D Print	N/A	2/6	1	7.84	7.84	N/A
<b>MakerSpace Print</b>	Prototype Adjusted For IM	UW Makerspace Ultimaker 3D Print	N/A	2/23	1	2.15	2.15	N/A
<b>MakerSpace Print</b>	Parts for Connection Mechanism	UW Makerspace Ultimaker 3D Print	N/A	2/26	1	2.8	2.8	N/A
<b>MakerSpace Print</b>	Prototypes for Testing	UW Makerspace Ultimaker 3D Print	N/A	3/4	1	8.2	8.2	N/A
<b>MakerSpace Print</b>	Prototypes for Testing	UW Makerspace Ultimaker 3D Print	N/A	3/4	1	8.75	8.75	N/A



Testing					✓	✓	✓	✓	✓		✓	✓					
<b>Deliverables</b>																	
Progress Reports	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓					
Prelim presentation			✓														
Final Poster																	
<b>Meetings</b>																	
Client		✓		✓		✓		✓			✓						
Advisor	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓					
<b>Website</b>																	
Update	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓					

Project Goal	Deadline	Assigned	Progress	Completed
Preference Human Testing	2/29	All	Completed	Yes
Preliminary Oral Presentation	2/9	All	Completed	Yes
Preliminary Deliverables	2/28	All	Completed	Yes
Show and Tell	3/22	All	Completed	Yes
Executive Summary	4/19	All	In Progress	
Final Poster Presentation	4/26	All	Not Started	
Final Deliverables	5/1	All	Not Started	

## Summary of Weekly Team Member Design Accomplishments

*Team:* The team is working on their final deliverables for the end of the semester. The final draft of the executive summary was completed, and will be sent to the team's connection at AbbVie at the end of the week. The first draft of the poster has also been completed.

*Individual:*

❖ Jenna:

- Worked on the final poster and putting information into correct section
- Check poster dimensions with college print
- Put dimensions into the final poster

- ❖ Eva:
  - Worked on the final poster
  - Edit executive summary
  - Made bar graphs for single drop test data
- ❖ Tevis:
  - Worked on thematic analysis for poster and report
  - Printed the newest version of the prototype
  - Edited sections of the poster to get preliminary feedback
- ❖ Kasia:
  - Created final poster and worked on sections
  - Annotated executive summary
  - Analyzed single drop test data
- ❖ Anabelle:
  - Worked on final poster
  - Performed a thematic analysis on preference testing data
  - Continued working on drawing for instruction manual