

Glucose Alerting System

Client: Olive Cernigila & Callie Berg

Advisor: Dr. John Puccinelli

Team:

Isabel Ploessl - Co-Team Leader

Claudia Beckwith - Co-Team Leader

Lauren Klein - BSAC

Ella Prose - BPAG

Audrey Zeller - BWIG

Kiera Klemm - Communicator

Date: 12/04/2025

Problem Statement:

The overall goal of the Continuous Glucose Monitoring Bracelet is to make blood glucose status more clearly visible, understandable, and actionable for anyone supervising a young child with Type 1 Diabetes. Studies show that a diagnosis of diabetes can become just as stressful for parents to monitor and understand, as it is for the kids. This prototype should help relieve some of this stress by eliciting a visible and actionable signal to parents, which will convey whether treatment is needed or not.

Brief Status Update: Preparing for Poster Presentations and beginning Final Report !

Summary of Weekly Team Member Design Accomplishments:

- Finished poster, and testing, begun final report

Name	Activity	Time (hr)	Week Total (hr)
Isabel Ploessl	- Formatted Progress Report - Poster Formatting - Poster Section - Soldering - Hardware research - Practicing for Presentation	½ hr 4 hr 2 hr 3 hr 2 hr ½ hr	12 hr
Claudia Beckwith	- Finishing Flutter connection to microcontroller - Troubleshooting Arduino - Microcontroller program with on board LED - Testing with on board LED - Update code for external LED and new testing - Poster section & formatting - LabArchives	4 hrs 1.75 hrs 2 hr 2.5 hrs 1.5 hrs 2.5 hrs 2 hrs	16.25 hrs
Lauren Klein	- Soldering & Circuit Testing - Notebook Update - MTS Testing - Poster Revision - Presentation Practice	11 hrs 1 hr 2 hrs 1 hr 1/2 hr	15.5 hrs
Ella Prose	- Poster Section - Presentation practice - Material testing - Ordered materials - Updated Notebook	2 hrs ½ hr 1 hr 1 hr 1 hr	5.5 hrs
Audrey Zeller	- Poster Section and revisions - Presentation practice	2 hrs ½ hr	6 hrs

	- Material testing (MTS testing) - 3D printing final designs and backup box	2 hrs 1 ½ hrs	
Kiera Klemm	-Designed poster layout -Poster sections -Presentation practice -Finalized box design and printing material -Updated notebook	2 hr 2 hr ½ hr 2 hr 1 hr	7 1/2 hr

Weekly/Ongoing Difficulties:

- **Hardware components**

Upcoming Team and Individual Goals:

- Team:
 - Kill it at poster presentations
 - Begin and Complete Final Report
 - Make all updates to notebook
- Isabel Ploessl:
 - Update notebook
 - Complete presentation
 - Complete and edit final report
- Claudia Beckwith:
 - Update notebook with all Arduino revisions and final Flutter code
 - Final presentation
- Lauren Klein:
 - Finish Notebook Updates
 - Give Final Presentation

- Finish and Edit Report
- Ella Prose:
 - Update Notebook
 - Finalize materials and cost spreadsheet
 - Complete final report
 - Complete final presentation
- Audrey Zeller:
 - Update website
 - Make sure final design is printed and brought to presentation
 - Complete final report
 - Complete final presentation
- Kiera Klemm:
 - Finish Notebook
 - Work on final report sections
 - Complete final presentation

Project Timeline :

Project Goal	Deadline	Team Assigned	Progress	Completed
Client Meeting	9/8	ALL	100%	Yes
Weekly Progress Report	9/11	ALL	100%	Yes
PDS	9/18	ALL	100%	Yes
Design Matrix	9/27	ALL	100%	Yes
Preliminary Presentations	10/3	ALL	100%	Yes
Preliminary Deliverables	10/8	ALL	100%	Yes
Show and Tell	10/31	ALL	100%	Yes
Poster Presentations	12/5	ALL	90%	Almost!
Final Deliverables	12/10	ALL	25%	Started

Expenses :

Category 1 - Appearance												
												https://www.amazon.com/Polyjoy-Silicone-Replacement-Compatible-Suitable/dp/B0B28PBHY9/ref=sr_1_1?crd=3S57C0WFWLO22&dib=eyJ2IjojMSJ9.4NFYuRSDRXuxGhR9unpsJKbw81dxLArTu7HRm0RIbgeh60g1sTfaP2QyeSP8nJd-Dk7cljwr_7YsaEx3BhtaXvTBy_PbIPvnMkep42YbF-pnU98WUtrkwtckWK5Bo6yvTOogMrLKXiPtOYyjsjrBO_9p_W1Qo1428LagDmU87EGBek89pxaHd9-6zwZmVenjEtacsVQd8og2xH1hQO1irk7YTDJ9IVuv7mrC-95Vz1fxOtGI-EV85G2jSim5v-hm2SELJ684ue3RyQE1er3edU9KSyjiyd8koFe6oaUE_dc.Lyhly4hgryeT7-zNXyld2mW-mgtaZCzfIAC3CWoaJcW&dib_tag=se&keywords=Polyjoy+Silicone+Replacement+Watch+Band,&qid=1760401499&prefix=polyjoy+silicone+replacement+watch+band,,aps,370&sr=8-1&th=1
Silicone Band	Silicone Band		113	-	723	256	8-	D	10/	\$	\$	
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Band	2	azo	020	Te	N/	202				0	9	
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Black PLA Box	Preliminary box - 30x30x15 mm	Weight: 202.5 g				10/24/2025			\$0.25	\$1.50	
Clear Resin Lid	Box clear Lid	Weight: 202.5 g				10/24/2025			\$2.48	\$4.68	
Clear Resin Lid	Final Clear Lid	Weight: 202.5 g				11/18/2025			\$1.20	\$2.00	
Black Resin Box	Final Resin Box	Weight: 202.5 g				11/18/2025			\$2.77	\$2.77	
Black Resin Box	Final Resin Box	Weight: 202.5 g				11/20/2025			\$3.32	\$3.32	
Resin Box	Final Box	Weight: 202.5 g				12/2/2025			\$2.34	\$2.34	
Resin Lid	Final Lid	Weight: 202.5 g				12/2/2025			\$1.55	\$1.55	
Category 2 - Internal/Electronic Components											
Seed Studio XIAO nRF5	Microncontroller used for light	See DER # 400 043 492 4	OR Seeder Studio N/A			10/25/2025			\$1.75	\$1.75	https://www.seeedstudio.com/Seeed-XIAO-BLE-nRF52840-p-5201.html

2840 (XIAO BLE)	control									
LED Board	LED Opto/Lighting Evaluation Board	Soldered Electronics	33055	DigiKey	5032-3330	10/30/2025	\$4.04	\$4.04	https://www.digikey.com/en/products/detail/soldered-electronics/333055/21720440	
Battery	3.7 V Lithium Polymer Battery Rechargeable (Secondary) 500 mAh	TinyCircuits	ASR00035	DigiKey	1832-1051	10/30/2025	\$6.95	\$6.95	https://www.digikey.com/en/products/detail/tinycircuits/ASR00035/9808767?utm_source=chatgpt.com	
Perfboard	Printed circuit board	MakerSpace				11/14/2025	\$1.00	\$1.00		
Header	Electrical connector	MakerSpace				11/14/2025	\$0.02	\$0.02		
Seed Studio XIAO	Microcontroller used for	Amazon		Seed Studio		11/14/2025	\$1.65	\$1.65	https://www.seeedstudio.com/Seeed-Studio-XIAO-nRF52840-Pre-Soldered-p-6332.html	

nRF52840 (XIAO BLE)	light control									
Seeed Studio XIAO nRF52840 (Pre-Soldered)	Microcontroller used for light control	Seeed Studio	102010631	Seeed Studio	N/A	11/20/2025	1	\$17.49	\$17.49	https://www.seeedstudio.com/Seeed-Studio-XIAO-nRF52840-Pre-Soldered-p-6332.html
								TOTAL:	\$11.39	