Graduated Bowman Probes

Date: February 13 to February 20, 2026

Client: Dr. James Law
Advisor: Professor Monica Ohnsorg
Team:
Neel Srinivasan nsrinivasan8@wisc.edu (Team Leader/BPAG)
Caden Robinson carobinson5@wisc.edu (BSAC)
Caleb White cfwhite@wisc.edu (BWIG)
Cole Miller ctmiller8@wisc.edu (Communicator)

Problem Statement

Bowman probes are the standard instrument used in interrogation of the nasolacrimal (tear duct) system in Ophthalmology. They are available in various sizes and provide tactile feedback to the surgeon when probing the canalicular/nasolacrimal system, allowing them to assess for strictures, discontinuities, obstruction, or other abnormality within its lumen. Probing is typically performed prior to the passage of implants such as nasolacrimal stents (eg. Crawford, Lacriflow, Nunchucku, Monoka), to confirm patency of the nasolacrimal system. Available probes on the market do not have any markings on them which may allow the surgeon to make measurements to points within the canalicular/nasolacrimal lumen (eg. a stricture at 30 mm distal to the punctum), which can be helpful in correlating with imaging findings, or for accurate clinical documentation and therefore inform management of nasolacrimal pathologies. We propose the development of such a stent with inscribed bands corresponding to millimeter markings which may be referenced during canalicular or nasolacrimal probing.

Brief Status Update

This week the team received feedback from Professor Ohnsorg on how to improve our design matrix. Specifically, she suggested that we could add a column for laser annealing given its significant differences compared to laser engraving. The team also created the slides for our preliminary presentation and picked up a set of bowman's probes from Dr. Law to show our peers during the presentation. The team is also working on setting up a meeting with Professor Pfefferkorn to see if he can help us with the laser annealing process and give us clarity.

Summary of Weekly Team Member Design Accomplishments

- Team:
    - Created & practiced preliminary presentation as a team
    - Met with Dr. Ohnsorg to improve design matrix
    - Continued research to properly rank design choices in matrix

- Neel Srinivasan:
    - Continued research into laser annealing processes and available options on campus
    - Met with team virtually and practiced preliminary presentation

- Caden Robinson:
    - Created my section for the preliminary presentation
    - Met with the team to practice for the presentation

- Caleb White:
    - Contributed to the teams preliminary report.
    - Met with Dr. Law to receive Bowman Probe set and discuss testing methods.
    - Set up a meeting with Prof. Pfefferkorn for sometime next week to talk laser annealing.

- Cole Miller:
    - Worked on preliminary presentation
    - Practiced presenting and delivered presentation with team

Weekly/Ongoing Difficulties

Find a good meeting time with Professor Pfefferkorn

Upcoming Team and Individual Goals

- Team:

    - Assign sections of preliminary report to team members and complete by Wednesday
    - Continue researching into specific laser annealing procedures, safety measures, and relevant standards
    - Meet with Professor Pfefferkorn to discuss if he is able to help us with our project

- Neel Srinivasan:
    - Continue research on laser annealing
    - Meet with team to work on preliminary report and to meet with Professor Pfefferkorn
    - Update LabArchives with recent progress and new documents

- Caden Robinson:
    - Begin preparing for preliminary report drafting
    - Meet with professor Pfefferkorn to discuss potential resources for laser annealing/engraving

- Caleb White:
    - Work on the team's preliminary report, making sure to coordinate with the rest of the team.
    - Meet with Prof. Pfefferkorn and hopefully gain access to a laser annealing machine.

- Cole Miller:
    - Work on preliminary report draft
    - Research as needed to complete preliminary report
    - Meet with Dr. Pfefferkorn to discuss our options for lasers with an expert

Project Timeline

Project Goal	Deadline	Team Assigned	Progress	Completed
Meet with client	2/2	All	✓	✓
Product Design Specification	2/5	All	✓	✓
Preliminary Presentations	2/20	All	✓	✓
Preliminary Deliverables	2/25	All	X	X
Show and Tell	3/20	All	X	X
Poster Presentations	4/24	All	X	X
Final Deliverables	4/29	All	X	X

Expenses

Item	Description	Manufacturer	Part Number	Date	QTY	Cost Each	Total	Link
Component 1								
Component 2								
Component 3								
TOTAL:								**$0.00**