

## Progress Report 1: January 26 to February 1, 2007

### MALDI-MSI Tissue Coating Device

Client: Dr. Amy Harms, Ph.D., Biotechnology Center

Advisor: Professor Brenda Ogle

Team Members: Laura Piechura (Leader)

Kellen Sheedy (Communicator)

Holly Liske (BWIG)

Jenna Spaeth (BSAC)

#### Problem Statement

Matrix-assisted laser desorption/ionization mass spectrometric imaging (MALDI-MSI) is an imaging method that allows for label-free spatial analysis of biological tissue samples. This technology can be used to identify and quantify proteins, monitor protein biomarkers, and sequence polypeptide chains, techniques that can be applied to proteomic analysis of disease formation. However, sample preparation methods, especially with regard to the application of the matrix tissue coating, are difficult to control but require accuracy and precision. A device must be developed to apply a fine, uniform coating of light-absorbing compounds in order to simplify the sample preparation process. The goal is to provide a reliable tool to enhance the MALDI-MSI technique in order to speed and simplify potentially life-saving research.

#### Summary of Accomplishments

- Kellen e-mailed Dr. Harms to initiate a meeting, which will take place at 12:30 on Friday in the Biotechnology Center. We will meet in Engineering Hall at 12:00 to compile questions and finalize the agenda.
- Holly, Jenna, Kellen, and Laura have begun researching the project background and formulating a list of questions to ask Dr. Harms during the meeting.

#### This Week's Goals

- Meet Friday, February 2, 12:00 in Engineering Hall as a group, then with Dr. Harms at 12:30
- Take group photo
- Create a preliminary Product Design Specification with information from Dr. Harms
- Begin brainstorming design ideas

#### Project Difficulties

None of the team members can attend the scheduled BSAC meeting time due to classes. We have notified Professor Tompkins and Christopher Westphal of the problem, and hopefully they can help us solve it.

#### Activities

01-25-2007	Kellen: Contacted client	0.25 hr
01-26-2007	Kellen: Personal research and question brainstorming	1.00 hr
01-27-2006	Holly: Personal research and brainstorming	1.50 hr
01-28-2007	Laura: Personal research	0.50 hr
01-31-2007	Laura: Personal research/brainstorming and wrote Progress Report	2.00 hr
02-01-2007	Jenna: Researched technology	0.50 hr

# Project Timeline

	2/2	2/9	2/16	2/23	3/2	3/9	3/16	3/23	3/30	4/6	4/13	4/20	4/27	5/4	5/9	5/11
Client Meeting	Δ															
Research Project	Δ	◆														
Write PDS		Δ														
Brainstorm Design Ideas		Δ		◆												
Choose 3 Designs to Enhance				Δ												
Chose 1 Design to Pursue					Δ											
Work on Midsemester Presentation					Δ	◆										
Work on Midsemester Paper					Δ		◆									
Finalize Design							Δ									
Order Materials								Δ								
Build and Test Prototype									Δ							
Work on Poster Presentation										Δ			◆			
Work on Written Report											Δ			◆		
Final Meeting with Advisor															◆	Δ

SPRING BREAK