

Weekly Report for 2019-10-21

Student Name: Daylen Mackey (1444775)

Group Name: Milky Way Solutions

Group Members: Leo Marroquin, Jia Xiang (Tony) Yang, Ian Then

Progress this week:

Goals From Last Week (including goals carrying over from weeks prior)		
Goal #	Goal	Status
1	Start developing sub-groups for our team based on specialties and tasks members may accomplish	In Progress
2	Research picoamp current sources for purchase.	In Progress

Goal 1

We are at the same stage for this goal as we were last week. We have a general understanding of what each member's roles will be, but will have more set ideas once we begin design.

Goal 2

We have been looking at picoamp current sources for purchase offered through online distributors/manufacturers such as Texas Instruments. (See "Evaluation from last week" for more details)

Evaluation from last week:

With more midterms this week, the group did not make an impressive amount of progress. We did however continue communications with our client, and look to schedule another meeting for the end of the month. Ian managed to make time to go to our client's seminar, and apparently learned quite a bit. Ian plans to tell us about it Monday.

Our client purchased 2 Terra-Ohm resistors, and will use these to try and build a reference current source. We are not sure how noise will impact the result, but it will be an interesting experiment.

Goals next week:

(Many of us have midterms over the next few weeks, so we don't expect to spend too much time on Capstone)

- Coordinate a meeting date with our client for the end of the month.
- Talk to Dr. Barlage about using the picoamp current source in his lab for testing purposes.
- All the "In Progress" goals in the table above remain.

Concerns:

Weekly Report for 2019-10-15

Student Name: Daylen Mackey (1444775)

Group Name: Milky Way Solutions

Group Members: Leo Marroquin, Jia Xiang (Tony) Yang, Ian Then

Progress this week:

Goals From Last Week (including goals carrying over from weeks prior)		
Goal #	Goal	Status
1	Narrow idea list down to 5 strong ideas	Abandoned
2	Rank list of potential clients	Abandoned
3	Start developing sub-groups for our team based on specialties and tasks members may accomplish	In Progress
4	Host a “brainstorming” session to develop a rudimentary idea on how to complete this project	Completed

Goal 1 & 2

These two goals were abandoned as we have decided to pursue the “Ion Chamber Calibration Device.” Dr. Barlage has provided us with final confirmation.

Goal 3

Now that we have a better understanding of the project, we have started assigning group members to tasks. This project would not involve as much hardware design as we initially thought, so Leo may end up working with Ian on designing/identifying a usable picoamp current source.

Goal 4

After meeting with the client on Monday, our team met on Tuesday to discuss possible plans. (See “Evaluation from last week” for more details).

Evaluation from last week:

We met with our client for the first time on Monday and had a very positive experience. Dr. Jans is an incredibly bright, passionate, and organized client. After the client meeting, and team discussion on Tuesday, we wholeheartedly believe we can bring this project to completion, and potentially reach some of his stretch goals.

The biggest challenge may be implementing a picoamp current source. Our client initially discussed the idea of using a simple Tera-Ohm resistor, but we believe there will be far too much noise to make any accurate measurements. Dr. Barlage believes it’s possible to construct, admits it would be incredibly

challenging. Our Technical Mentor (Saeed Ansari) suggests purchasing the current source instead of trying to build it. He believes designing and building a picoamp current source to be more similar to a PhD project as opposed to a capstone. Saeed also spoke with another Integrated Circuits PhD, who also suggests the same thing.

If we are not able to purchase/create a picoamp current source, we will probably proceed with the controller portion of the project, and not include the measurement component.

Goals next week:

(Many of us have midterms over the next few weeks, so we don't expect to spend too much time on Capstone)

- Begin researching picoamp current sources for purchase.
- All the "In Progress" goals in the table above remain.

Concerns: Our project includes the use of 400 V supplies. I find this frightening. I hope Barlage will host a lecture on how to handle high voltage power supplies.

Weekly Report for 2019-10-06

Student Name: Daylen Mackey (1444775)

Group Name: Milky Way Solutions

Group Members: Leo Marroquin, Jia Xiang (Tony) Yang, Ian Then

Progress this week:

Goals From Last Week (including goals carrying over from weeks prior)		
Goal #	Goal	Status
1	Narrow idea list down to 5 strong ideas	In Progress
2	Rank list of potential clients	In Progress
3	Make contact with the potential client	Completed
4	Start developing sub-groups for our team based on specialties and tasks members may accomplish	In Progress
5	Create a group github	Completed
6	Decide whether or not to contact Levven Controls about potential projects.	Completed

Goal 1 & 2

Progress on these two goals were halted as we pursued the biomedical project mentioned in class. These goals are likely to be abandoned by next week's report if the client meeting this week goes well.

Goal 3

We emailed our client on Monday and received a very positive response. Several emails followed coordinating a meeting time. Our group is scheduled to meet Monday October 7th at 10 AM.

Goal 4

We have a decent understanding of the roles each member will take, but without complete understanding of what the project entails, it's tough to make concrete decisions. We hope to have a better understanding of our roles after the meeting with our client.

Goal 5

I created a group github repo. I am not sure how much it will be used, but it could come in handy. It costs nothing, and may prove valuable later, so implementation seemed worthwhile.

Goal 6

After learning about the team's motivation to pursue the "Ion Chamber Calibration Device" project, we decided it would not be necessary to contact Levven.

Evaluation from last week:

With midterms looming, there was not a lot of time for group to meet and discuss. We were able to discuss options through slack, and whenever classes overlapped.

Scheduling time to meet with our client was challenging. All four of us have different schedules, and midterms approaching. We were however able to find a time that worked for all of us.

Goals next week:

(Many of us have midterms over the next few weeks, so we don't expect to spend too much time on Capstone)

- Host a "brainstorming" session to develop a rudimentary idea on how to complete this project
- All the "In Progress" goals in the table above remain.

Concerns: None

Student Name: Daylen Mackey (1444775)

Group Name: Milky Way Solutions

Group Members: Leo Marroquin, Jia Xiang (Tony) Yang, Ian Then

Progress this week:

Goals From Last Week (including goals carrying over from weeks prior)		
Goal #	Goal	Status
1	Narrow idea list down to 5 strong ideas	In Progress
2	Rank list of potential clients	In Progress
3	Make contact with the potential client	In Progress
4	Learn more about the biomedical project	Completed
5	Start developing sub-groups for our team based on specialties and tasks members may accomplish	In Progress

Goal 1 & 2

Progress on these two goals were halted as we pursued the biomedical project mentioned in class.

Goal 3

We reviewed all the projects on the list and decided we should contact the client to learn more about the project. An email has been drafted and will be sent out Monday morning.

Goal 4

With the client list being posted this week, we were able to learn more about the “Ion Chamber Calibration Device.” We researched how Ion Chambers work, and how to integrate one into our project. In addition, we also found the client’s patent. This gives us a better idea of what his goals are, and the direction he wants to take this project in.

Goal 5

We have made progress on this goal since last week, but it is not finalized yet. With a better understanding of our potential project, role designation is a bit easier. While we are still determining roles, we understand Leo and Tony will take lead on the power component of the project as they are the most experienced in that area.

Evaluation from last week:

This last week was exciting because the client list was released, but the biomedical project was not what we envisioned. The technology is exciting, but it does not give our group the chance to specialize in the manner we hoped. We have not finalized which project we will pursue but hope to soon.

Our first meeting with our project manager went well, but we did not discuss details in too much depth as the client list had just been released.

Goals next week:

- Email the Client behind the “Ion Chamber Calibration Device”
- Create a group github
- Decide whether or not to contact Levven Controls about potential projects.
- All the “In Progress” goals in the table above remain.

Concerns: None

Weekly Report for 2019-09-23**Student Name:** Daylen Mackey (1444775)**Group Name:** Milky Way Solutions**Group Members:** Leo Marroquin, Jia Xiang Yang, Ian Then**Progress this week:**

Goals From Last Week (including goals carrying over from weeks prior)		
Goal #	Goal	Status
1	Narrow idea list down to 5 strong ideas	In Progress
2	Rank list of potential clients	In Progress
3	Create a <i>Trello</i> for task delegation	Completed
4	Make contact with the potential client	In Progress
5	Learn more about the biomedical project	In Progress
6	Start developing sub-groups for our team based on specialties and tasks members may accomplish	In Progress

Goal 1 & 2

Progress on these two goals were halted as we pursued the biomedical project mentioned in class.

Goal 3

We made a Trello account this week to aid with task management and planning. It appears to be a good application, but we’re not sure if it is necessary yet.

Goal 4 & 5

As I am writing this, the client list has not yet been released, so we have not contacted them. Adding these goals this early on into the schedule may have been a bit ambitious. We’ve have taken additional steps to learn about the project through Dr. Barlage (described in evaluation).

Goal 6

We have not finalized group member specialties yet, but we have an approximate understanding of what each member's role will be. Leo will handle complex hardware, Tony will be in charge of the communications aspect of the project, Ian will be largely responsible for developing methodologies and researching accurate techniques for radioisotope measurement, and I will be responsible for most of the codebase.

Evaluation from last week:

We did not hit all of our milestones, but we still found some success. The trello account was created, we developed a better understanding of our roles within the group and settled on Tuesdays as our dedicated day to meet with our manager. Leo had the biggest breakthrough when he suggested the possibility of using a *scintillator* to pick up the radioisotope. The scintillator will emit a light in response, that an avalanche photodiode would be able to pick up. The specifics of this technique are still vague, but it seems promising.

Goals next week:

- Learn more about the efficacy of using a scintillator as a measurement device and how to integrate it into our device.
- All the "In Progress" goals in the table above remain.

Concerns: None

Weekly Report for 2019-09-16

Student Name: Daylen Mackey (1444775)

Group Name: Milky Way Solutions

Group Members: Leo Marroquin, Jia Xiang Yang, Ian Then

Progress this week:

Goals From Last Week		
Goal #	Goal	Status
1	Narrow idea list down to 5 strong ideas	In Progress
2	Rank list of potential clients	In Progress
3	Create a <i>Trello</i> for task delegation	In Progress
4	Create a <i>Slack</i> channel for group communication	Completed
5	Finalize a 4 th group member	Completed

Goal 1 & 2

Progress on these two goals were halted as we pursued the biomedical project mentioned in class.

Goal 3

We have not created a *Trello* yet. Since we are still working on delegating roles, missing this milestone is not damaging. The *Slack* channels have served us well, so this goal may be abandoned if deemed unnecessary.

Goal 4

A general *Slack* channel was created for our group. Several sub-channels have also been created to discuss potential ideas, names, and task delegation.

Goal 5

Ian Then was added to the group.

Evaluation from last week:

We did not hit all of our milestones, but I am not concerned. When we learned about the opportunity to aid an external client with a biomedical project, the group shifted their focus towards that goal. We met as a group to make sure each member would be happy pursuing this, then contacted Dr. Barlage to ensure he was also aware of our excitement, and motivation. I see this as a great first step for the team.

Goals next week:

- Make contact with the potential client (may not be possible)
- Learn more about the biomedical project (potentially through their patent or a brief summary)
 - Learn which radioisotope(s) we would be measuring
- Start developing sub-groups for our team based on specialties and tasks members may accomplish (groups may change with time)

Concerns: None

Weekly Report for 2019-09-09

Student Name: Daylen Mackey (1444775)

Group Name: TBD

Group Members: TBD

Progress this week:

- Selected 3 potential group members
 - Leo Marroquin
 - Jia Xiang (Tony) Yang
 - Ian Then
- Had a round table meeting with potential members
 - Discussed project ideas
 - Reviewed each member's strengths and weaknesses

- o Created a list of potential clients to pitch to

Evaluation from last week:

As this was the first week, we didn't come in with any concrete goals. We are making good progress, but I would like to see more novel and potentially patentable ideas on our list next week.

Communication between team members is strong, but we need to be more disciplined moving forward.

Goals next week:

- Finalize a 4th group member
- Narrow idea list down to 5 strong ideas
- Rank list of clients
- Create a *Slack* channel for group communication
- Create a *Trello* for task delegation

Concerns:

There are no concerns at this time, only eagerness to begin.