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## Aidan Kidder-Wolff



### Welp

📅 August 1, 2018 👤 akidderw

Dear Diary,

Today's Rating: 6

The days of this REU are coming to an end and I only wish that I had realized how to be helpful sooner. It looks as if we will not have what I consider to be any substantial results. Hopefully a paper will follow regardless.

I have two things left of my bucket list. I've given up on dancing before I leave, which is alright. I can find places to dance once I've returned home. But I digress. I wish to use up the rest of my arcade card, and to introduce Tee to Indian food.

We hope you'll tune in next time.

Aidan

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### To go where no one has gone before

📅 July 30, 2018 👤 akidderw

Dear Diary,

Today's (and the weekends) rating: 10 and 3

On Friday we discovered that we would not be receiving the guitar string until Monday. To add onto things, we also need to wait until Monday for Christine, the person who likely knows the chemical composition of the support material, to return. Instead we began some preliminary work on our paper, which has proven difficult because we don't have any results yet. We also cannot write about expected results either as we plan to perform tests next week. This puts us in a bit of a bind; we cannot write much more until we test, but we can't test because we're running out of time to write our paper.

On Saturday, I thought I would have a relaxing day. I got up early, and biked to the store to pick up some things. There was a storm in the forecast so I peddled a little quicker. Then I received a text message right before finishing at the store that people were leaving to return the bikes. And so I peddled back a little more quickly. When I arrive, I discover that they had left without me. Frustrated that they wouldn't wait eight minutes for me to get back, I peddled towards the bike shop quickly still. About three quarters of the way there I get a message from Tee saying they went the opposite direction and were back at Freddy. I admit that I felt a little better after that. Once I got to the store, I gave back my bike, helped around the store, and then left with the other interns.

Then upon my return, I baked a cake with Tee; spice cake with cream cheese frosting. It turned out quite well, I'm proud to say. Then I had a day of gluttony. Quite enjoyable overall, I must say.

On Sunday we went to AdventureLand!



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I had not been to an amusement park since I was 15. I had a lot of fun, and cried laughing numerous times. Sometimes I would laugh because of a fellow intern's screams, other times because the ride was anything but smooth, and we the passengers were getting beaten up just by riding the coaster.



I enjoyed one ride in particular, The Underground. Almost immediately upon entering the dark, we got sprayed with water and it freaked Stephan out. By the time I recovered from laughing, the ride became shaky and the animatronics began moving, and so I laughed some more. At one point I noticed Tee behind me making hilarious sounds. The whole combination made Victoria and I crack up laughing to an outstanding degree. I don't think I've laughed so much in one day in many years, if at all.



One thing that surprised me was how long we stayed at the park: 11 hours. A particularly pleasant experience that came with this fact, was the last hour of the day. In the last hour, almost everybody had cleared out and the lights began to turn on. This means that while the sun was setting, the whole park became so very colorful AND there were no lines. It was beautiful. The lack of people also meant that we could ride the coasters several times in a row without getting off. Though, by the time we left I had a feeling that I was spinning until I woke up this morning.



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To explain why there are two ratings for this day, I must offer some backstory. To start, I wanted to have at least one 10/10 over this summer. If I had included the car ride home in my overall rating, then I would not have a 10/10. Basically what happened is that we chose not to eat dinner due to the highly priced food in the part. Instead Angelica was nice enough to let us stop at McDonalds before leaving.

I used to eat a fair amount of and enjoy McDonalds. At one point in my life I stopped eating it for awhile, then after a few months or so I ate a single Chicken McNugget offered to me by one of my friends. My stomach felt *awful* for over two hours afterwards. Since then I've developed quite an aversion to the smell. Fast forward to yesterday, we're deciding where to eat. I voice my dislike of the smell, but I am overruled due to others' haste to get and eat food as quickly as possible. The smell almost immediately made me feel sick, and I knew I would be stuck with this until I left the car. The combination of my head spinning, did not help either. I spent the rest of the car ride *unhappy*. Then when I got back to the dorm, I went straight to bed without ever eating dinner. I woke up very dehydrated, but still not hungry. I decided to eat anyways.

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I have no doubt that I'll remember this weekend for a long time.



Who would have guessed the day would receive my highest score, would also receive my lowest? With one week left I must muster the motivation to finish off the work that I have. I have faith, though. Another thing I have is support from others, which always helps.

We hope you'll tune in next time,

Aidan

📁 REU|2018    💬 2 Replies

## Poppin Poster

📅 July 26, 2018    👤 akidderw

Dear Diary,

Today's Rating: 7

Today, Tee finished our poster! That is, finished the layout and the text. We still have a few placeholder images, but they will be replaced by our results once we have them. Speaking of, my graduate student never told us when the guitar wire would be arriving. I just sent him a text about it.

Now all that's left is to perfect our presentation. We plan on giving our faculty mentors a demo on Friday, so I suppose Thursday will be used towards that end.

After that, all that's left is to finish the paper, with or without results. We of course have expected results, but real results would be lovely. If I've the time, I'll also work on the paper tomorrow.

One of the most common things I ask myself and others is: "What are you looking forward to?" I do this for a variety of reasons but the important thing is to always have something to look forward to, if possible. Right now it is making spice cake with Tee. What are you looking forward to, reader of mine?

We hope you'll tune in next time,

Aidan

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## Sleep is for the weak

 July 25, 2018  [akidderw](#)

Dear Diary,

Today's Rating: 7

Not much has happened workwise today. We made progress on our poster, spoke with our grad and faculty advisors, and finally ordered some guitar string to clean the parts.

We also went to the bike event that was happening in town. There were quite the number of people there. We managed to see Holly though, that was enjoyable. The bands were fun, I really enjoyed one that was playing in the middle. I never caught their names though. We also did some nice browsing; everybody else got some really unique food. I bought a soda and some water : ). Afterwards we headed back to the dorm and then I stayed up until around 1 watching movies with some interns.

The first movie I really enjoyed. It was called The Village. It's kind of an older horror movie, so instead of gore and jump scares it uses plot to be interesting. It also had an incredibly strong blind female protagonist, which is fantastic. Then we watched Balto, an old animated movie that I had forgotten existed. It was a heartwarming and wholesome experience. Although tomorrow I will pay for this lack of slumber.

We hope you'll tune in next time,

Aidan

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## 3D progress

 July 24, 2018  [akidderw](#)

Dear Diary,

Today's Rating: 7

Today is Mary's birthday! Woo!

Also, we managed to get the paperwork done for the 3D printing. Now I just await an email that say she has finished printing. Woo! I can report things to my supervisors!

We've two weeks left. I should probably start thinking about recommendation letters.

We also watched Porco Rosso along with cake. It's not my favorite film but its soundtrack definitely has one of my favorite songs.

I noticed that my journal entry is brief and somewhat broken. I attribute this to my lack of sleep over the past few days. Hopefully I can recover by sleeping well tonight.

We hope you'll tune in next time,

Aidan

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## Deck the halls with a lots of malls

 July 23, 2018  [akidderw](#)

Dear diary,

Today's (and the weekend's) Rating: 6

On Friday our research team made good progress. We met with the operator of the 1/4 million dollar 3D printer in the basement and discussed printing several parts. We are going to try, as I mentioned previously, various printing methods. I am more hopeful for some designs than others. For example, the helical patters have some hope for cleaning; especially those cut into pieces. However, a part that was designed by one of the other grad students (non-SPIRE) I predict will be impossible to clean. That is, assuming that we will be able to print channels 1-2mm thick to begin with. Anywho, the person in charge said that she would swap out the regular plastic for our fancy clear plastic so that we may print on Monday. Cicero just came by with a few extra parts to print. I estimate all of this printing will cost less than \$10, which is pretty wild.

On Saturday, a large number of the interns went to the Ames mall. Although transit was a bit of a struggle, someone wanted to come the day of and we had met our rented cars' limits. In short, there was some squishing and sore backs. As well as quite an amazing feat of slumber. In what had to be one of the most uncomfortable positions, while listening to music, Inshira was able to fall so deep into sleep as to begin snoring. See pic below:



I don't usually go to the mall. When I do I like to explore spontaneously but methodically. Once I have decided I am done with a store, I move on to the next. If I see someone that interests me, I will enter a new store. Otherwise I will continue walking around until I have seen everything. The result of this was that I only stayed with the other interns for a brief time. I did however, end up going to the bookstore and reading the beginning of several books. I've never had much luck finding books that I enjoy. Either the plots are too slow, the scenery dry, or the language uninteresting. I am aware that sounds pretentious, yet there remains little I can do about it. I enjoyed Name of the Rose, Anathem, and a book whose name I cannot place at the moment. Finding books like these at your average book store proved difficult. So I instead decided to take another chance with a book, hoping that I'll enjoy it. The first chapter was tense, and I very much hope that the other chapters will relate.

On Sunday while others were having the Hackathon, I enjoyed a day of solitude. I did laundry, read, went for a bike ride, spoke to almost nobody, and overall just enjoyed the company of myself. Such is the life of an introvert. I feel much better afterwards. Towards the end I noticed a few of the interns celebrating Mary's birthday by watching Sharknado. I did not stick around however.

Speaking of, happy celebration for the day of your creation Mary.

I look forward to the last two weeks of this program.

We hope you'll tune in next time,

Aidan

 REU2018  1 Reply

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## We have no results ... yet

 July 20, 2018  akidderw

Dear Diary,

Today's Rating: 8

During the day I began on the paper as Tee worked on the poster and Kira on COMSOL. There was a bit of confusion over what should be in the Methodology section versus the results section. Our graduate student came to help and he basically said that we have no results to put in yet. Our results would come from high resolution 3D printed tubes but there seems to be some confusion over when and what parts should be printed. For example, there are two folders called "3D parts for high-res printer" with very differing contents. We're not even sure if any of the parts have been printed already without our knowing. Regardless, Cicero gave us a task.

Cicero and myself selected two microchannels in box folder. We are going to print both parts as whole pieces, halves, and quarters. That way we can test how effective cleaning with piano wire is, as well as see if the parts have inertial focusing properties. We're hoping to get this done by the end of Friday.

After work and the gym, Tee, Leilanie, Victoria, Ahmed, and eventually Gabriel all ate outside whilst playing cards and frisbee. I found the breeze particularly relaxing and enjoyable. Later, we made croissants! They were good, but croissants from a tube taste a little off.

We hope you'll tune in next time,

Aidan

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## Dreams can be telling

 July 19, 2018  akidderw

Dear Diary,

Today's Rating: 7

The day can be summarized as COMSOL and Poster. We made progress!! Teandre was able to make from scratch a coiled trapezoidal pipe with laminar flow going through it. It was so exciting. Then we made the foolish mistake of trying to continue in COMSOL. We grew frustrated again and decided to work on the poster instead. The poster is coming along quite nicely, I think. We're to send the draft to Dr. Gomes when finished. Tomorrow I think I'll be working on the paper.

This morning I remembered my dream. I was feeling pressure to complete the research paper for my project. I decided to instead go dancing :). I believe the interns came along, although I do not recall any faces. I only remember a stranger coming in who surprised me because she knew already how to dance. Then we had an excellent dance, parted ways, and I woke up.

Just so we're clear, I *do* intend to finish the paper on time. I will not actually ditch my work to go dancing, even if there was an opportunity. I admit though, I miss dancing quite a bit. I did not realize how much I enjoyed it, having only danced for two years. I hope that my friend can visit soon so I may hold a class and get to dance. She said sometime after the 20th, so our class will possibly take place soon.

We hope you'll tune in next time,

Aidan

 REU2018  1 Reply

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## COMSOL as our last hill

 July 18, 2018  akidderw



Dear Diary,

Today's Rating: 6

Most of the day focused on trying to find applicable tutorials for COMSOL. We were following along quite well until we had to import a model from SolidWorks. To our dismay, Paul informed us that the feature we wanted was part of an add on that costs \$1500. So now, we must try to learn and make the parts in COMSOL. This, along with more work on our poster/paper, is our task for tomorrow.

We hope you'll tune in next time,

Aidan

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## Cheesy and Revealing

 July 17, 2018  akidderw

Dear Diary,

Today's Rating: 7

The title of today's blog refers to two major parts of my day. The first, involved a lengthy trip with Ahmed to first go pick up his ID

from Cyride, then getting ingredients and making a mac and cheese bake. The second half of the title points to a revelation that I had about our research for the whole summer.

Ahmed and I like to do meal prep together. Today, we decided to use up some of his pasta, as well as some bread, to make mac and cheese. Before we could ride the bus however, we had to find his ID. We looked for ~20 minutes, then he called Cyride to check if they had it. They earned Ahmed's admiration for their efficient lost and found service. Then we went to the grocery store and bought a lot of cheese. Twas a good day. The food was good too, although I'm not sure we could call it meal prep because it was mostly gone within an hour. As a side note, we're almost out of eggs, which is pretty impressive considering we had over 80 a week ago.

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And now, for the main revelation. I have to focus on wording in order to avoid sounding pessimistic. The work we've done so far probably has not been very helpful to anyone. Instead of crafting a plan for us interns based on what would help the project, it seems more like we were given whatever work they could think of.

The first part of the summer we focused on becoming lab training. Yet our work does not require us to be in a lab. Next, we focused on SolidWorks and making parts to test. However, our graduate students already know SolidWorks so well that a part which would take us an hour to complete might only require 5 minutes for them. Another problem, is that we have no idea if the parts we made will actually work.

We need to separate particles based on their size. The parts we were told to make never had a mechanism for separating anything. Even if we had, the part would simply be a shot in the dark because no calculations were done beforehand to see if it would actually have the desired properties. Those calculations are done in a software called Comsol.

Today we learned that nobody related to the project has any experience or knowledge on how to use Comsol. Which seems odd to me, because the first step in this process ought to be making a channel that we know has the properties for inertial separation; The next step would be to make the part in SolidWorks; and finally the part would be printed. Instead, what seems to be happening is we are skipping the first step, designing a part that we hope works, then having it printed.

Therefore, to *sincerely* be of use in this project, we should learn Comsol. That way we could perform tasks crucial to the process that others could not. We would design channels, then we or the other undergraduates would make them in SolidWorks, then someone would print and verify. Seems to me like a good design because everybody is useful and nobody has to deal with too much. Instead, we have nobody designing proper channels, too many people creating parts, and 3D printed channels that may or may not work.

To wrap up, what I realized is: we should have been learning Comsol from the beginning. People who know how to use Comsol are what this project needed, and now, with two weeks left, I'm not sure if we can learn enough to be useful.

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As a quick note, we were assigned another task. The task was to see if there was a way to print unobstructed microchannels. Therefore some of the parts we made were simplified to prove if we could clean the channels. In the end however, it looks like all it took to solve this issue, was a trip downstairs to ask a 3D printing expert.

The solution: print using a higher resolution printer (like the one in the basement), and clean with piano wire. While this hasn't been tested by our team yet, I trust her expertise.

So I stand by my previous statement, we should have learned Comsol before anything else.

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We haven't given up though. Comsol is a terribly unintuitive program to use, but we're going to try to learn it regardless of how little time we have left. If we can produce *one* channel that has the properties we want, then I believe everyone can work off of it.

We hope you'll tune in next time,

Aidan

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## Grey Wolff

 July 16, 2018  [akidderw](#)

Dear Diary,

Today's (Friday + Weekend) Rating: 9


On Friday, we had a meeting with our faculty. One of our graduate students was absent, but it was productive nonetheless. We updated them on the progress, as well as keeping them informed on what other commitments we had scheduled. In return, they gave us a list of things to do for the next week. The poster is starting to take shape as well. Unbeknownst to us, Dr. Gomes has a very particular color palate in mind. I'm sure we'll make more progress on Monday.

On Friday and Saturday, myself and a few interns watched some shows together. We had a lively discussion about what we should watch. Also, a friend who is abroad sent me an image of us dancing. So we then had a brief, yet highly enjoyable interaction.

It was also my father's birthday, and he postponed opening presents until he could FaceTime me. Afterwards we spent 15-20 minutes just chatting. I look forward to seeing him again soon.

We hope you'll tune in next time,

Aidan

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## A rock which does not rock

 July 13, 2018  [akidderw](#)

Dear Diary,

Today's Rating: 8.5

Yesterday was quite enjoyable overall. I enjoyed the luncheon lecture, and made some progress with my research project. I was able to speak to both of my graduate students, whose input will hopefully assist us in the future. Further progress with COMSOL, the microfluidics simulation software, will be delayed until we can talk to someone with more experience. We have asked at least four different people who seemed to have history with the program, but none of them actually know how to *set up* COMSOL, only interpret its results.

Now we are waiting to be put in contact with someone who does know how to use COMSOL. Not to say we haven't tried however. The person we are trying to contact made a tutorial for REU students and we have tried working through it. Despite following along step by step however, one operation seems to be failing and thus we cannot make any shapes. On a positive note, if we do learn COMSOL, we will become a valuable resource for the team, which is a pleasant thought.

Unfortunately, the Jive band did not play Jive music. I was so ready to dance, but it's difficult to Charleston to classical music played only on brass instruments. Maybe one day I'll get to dance again.

We hope you'll tune in next time,

Aidan

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## Educate on Etiquette

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 July 12, 2018  akidderw

Dear Diary,

Today's Rating: 7

We were able to evaluate a model in COMSOL today. The model which was brought to us by our graduate student would be able to separate particles between 2 microns. Now I must learn to import our own models and replicate the process.

For lunch, we went to a lesson on etiquette. I found the instructor to be quite jovial, and the food enjoyable. When I was younger, I quite fancied myself to become a butler one day. Butlers are amazing; they can do almost any task assigned to them, and they look fabulous while doing so. A side effect of this idolization is that I spent a lot of time learning proper etiquette and mannerisms when I was younger. There are differences between the etiquette of a butler and a guest however. Most of my learnings were in these differences. Butlers are not expected to prepare conversation topics; that was a new one for me. So it was not without some use, and of course the practice was appreciated.

Tomorrow there will be a jive performance in the park that I'm really hopeful for. I do not personally dance jive, but I do dance in similar styles. If I am to find any swing dancers on campus, it will probably be there.

We hope you'll tune in next time,

Aidan

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## A defense good enough for a Castle

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 July 11, 2018  akidderw

Dear Diary,

Today's Rating: 8

The highlight of my day was Stacy's defense. The lowlight was how some of the audience was acting during Stacy's defense.

Sta-, I mean Dr. MacAllister did an excellent job and I and I am very happy for her. I only wish that others would refrain reading a newspaper, texting, emailing, editing an unrelated powerpoint, and watching the world cup *during* her defense. I was situated near the door and saw one person do all of these things. Afterwards I spoke my frustrations to someone else and they said "well all she needs is their signature so as long as they weren't disruptive." Others watched the world cup too, but in comparison I am less frustrated. They had the option of not showing up at all, but came to support their peer so I can at least give them that.

To me, these behaviors seem very rude and I certainly hope that it's not standard practice. I'd hate to work several years towards a project only to lose my audience's attention over a sports game that they can watch later.

End of rant.

We hope you'll tune in next time,

Aidan

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## Monday Presentation

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 July 11, 2018  akidderw

Dear Diary,

Today's Rating: 7

We presented our game today. Although for some reason, the powerpoint that I had thought we would use differed from the one actually implemented. That made the front end of the presentation a little. But the presentation of the game went better, I think.

I still don't understand why there is a voting aspect to the deeper dives. But perhaps the idea is that people will be driven to work more if they think it is a competition. I wonder if they'll let me abstain; I'd rather that than have to decide which of the projects I thought was *least* impressive.

We shall see on Wednesday.

We hope you'll tune in next time,

Aidan

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## Two wolves

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 July 9, 2018  akidderw

Dear Diary,

Today's (Friday + weekend) Rating: 8.5

So in my free time I designed a custom part in SolidWorks to allow my projector to aim vertically towards the ceiling. I had hoped that 3D printing that part would both be useful and a neat souvenir. I was turned down. I was a little bummed but that is their prerogative, so I cannot be upset. I'll probably make it out of plywood when I return home.

In other news, I forgot that my aunt lives in Iowa. She messaged me yesterday saying she wants to meet up sometime this summer. I'm really excited, she's quite the joy to be with. I have no idea what we will do, maybe she has some good ideas. All I can think of is showing her the kind of work that I do, and perhaps a movie. Regardless, I'm sure I will have an enjoyable time.

I'm not sure how notable this may be to others, but I have really enjoyed the weather as of late. The sunny weather is pleasant if a bit bright, and it makes the wind accompanying bike rides rather enjoyable. When it rains or thunders, I find the noise soothing. Without an umbrella however I do have to be careful venturing outside. I brought a rain jacket but that's more suited for light showers not heavy rainfalls. Has not stopped me from taking walks yet, hopefully that will continue.

We hope you'll tune in next time,

Aidan

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## Third of July

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 July 6, 2018  akidderw

Dear Diary,

Today's Rating: 8

This blog post will encompass the past three days on account of us being allowed the 3rd as well as the 4th off. On Tuesday, business was as usual; we made some progress on our game, and our research.

In the evening we went to go see fireworks. Only we left three and a half hours early. I had fun though, I was able to get a sweet balloon had and some hilarious pictures with some other interns. I only wish I had eaten dinner before leaving, and so I felt the rumbles the whole time. The fireworks themselves could have been alright, if not for the fact that most of them were obscured by trees. But I had a good time and I appreciate Ames for setting that up for us.

On Independence Day, we had a cookout. In the morning I made a quick run to the grocery store on my bike, which was more challenging that I had anticipated. There was construction at a major road junction, and so I had to find my own detour. This was my situation: two large bottles of soda and two bags of detergent on my back, a carton of thirty-six eggs on my left handlebar, ten ears of corn on my right, and a bag of 24 rolls in the middle. Therefore I biked cautiously until I had to walk my bike through a field due to the construction blocking my path. But at least I made it, and I had the cookout to look forward too. Though, if I am being honest, I thought it would go horribly. It almost did too. We had purchased everything but had forgotten to get matches or a lighter. Thankfully one of the interns had a lighter. Had we planned it better, someone would have set the grill airt long before others arrived. Also, some of the meat should have been defrosted. Basically, the whole cookout took around 20 minutes to actually get going. But we had other snacks in the meantime. By the end I was wholesomely satisfied with how it all went. In the evening we watched several movies, one of which was Hoodwinked, an excellent film with horrible graphics.

On Thursday, most of the interns came into work despite having the day off, albeit for a shorter amount of time. I managed to do some work on the game, but had to leave earlier than anticipated due to a headache that the computer screen had given me. Of all the computers I've used in VRAC, the ones attached to the Oculus are the only which are polarized opposite to my sunglasses. Which means I cannot see what is on the screen without rotating my head 90 degrees or removing them, which is what I did. And so every day I worked on the game, I left with a headache.

But I digress. Afterwards I made corn and ate leftovers, watch some TV, and went to bed early on account of the pain in my eyes and head. Overall, a lovely experience. I think my three day headache is reaching a close, which I am very happy about. But we shall see.

We hope you'll tune in next time,

Aidan

 REU/2018  [Leave a reply](#)

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## SolidWorks is my life now

 July 3, 2018  akidderw

Dear Diary,

Today's Rating: 6

Most of the day I spent trying to make myself useful for our research project. I had planned on making several parts for the high resolution printer, but upon investigation of the box folder labeled "3D Design for High Res Printer," I learned that the other two undergrads (not a part of the program) had already made those parts. So I instead spent the day making a tapering channel to test the limits of the printers we have. I'll probably finish that today.

Apparently, we have also been making progress on our deeper dive project. Basic functionality has almost been achieved. According to one of my teammates, the grad students had the answer to a problem we had spent numerous hours trying to solve the whole time! From what I gather, they withheld the information on purpose? Regardless, the whole issue delayed production of our game to the point where we have to make several compromises in order to finish on time.

Another day, another time spent trying to be useful.

We hope you'll tune in next time,

Aidan

 REU/2018  [Leave a reply](#)

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## Wet Legs

 July 2, 2018  akidderw

Dear Diary,

Today's (Weekend) Rating: 7

I have realized why the part I printed was smaller than anticipated. The channel I had created was of an octagon shape. When I typed in the measurements for how large I wanted the octagon to be, I failed to realize that it was measuring the center to a point and not the center to an edge. Then, since I based all my other measurements off of the octagon, everything was 2/3mm too small. All I have to do to fix this however, is simply scale the part and print again.

The weekend was pleasant. I began teaching another intern to cook and plan meals ahead. We made some awesome sandwiches on Saturday. Unfortunately, to get the ingredients we had to brave the heavy rainstorm which left me quite damp. I had a waterproof jacket on, sandals, and my hair dried quickly; so the only noticeable discomfort were my soaked pants. Would do it again though.

Today I think I will be working mostly in SolidWorks making new parts. To use the fancy printer in the basement we apparently should print several things at one time. So after scaling up the old part, I want to follow up on Dr. Gomes' request use the original design, but have it broken into easily cleanable pieces that lock together. Lastly I have my own request, if I am so lucky to get it accepted.


We hope you'll tune in next time,

Aidan

 REU/2018  [Leave a reply](#)

---

## Thursday

 June 29, 2018  akidderw

Dear Diary,

Today's Rating: 5

I don't remember much of today because of how sleep deprived I was. I remember getting frustrated at Unity and that's about it. I seriously doubt we will be able to finish our deeper dive project when we have been unable to accomplish the basics. The effort is there, we have spent numerous hours outside of class trying to get some progress, but to no avail it seems.

I did very much enjoy the lecture however. I also printed my part, which turned out to be too small. I'm not sure what I did to make it smaller than the other parts, but later today my graduate student said he would show me how to scale it up in SolidWorks. It seems like by the end of the summer, I will have a reasonable degree of experience with SolidWorks. Hopefully that will be a useful skill.

We hope you'll tune in next time,

Aidan

 [REU/2018](#)  [Leave a reply](#)

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## A new project

 [June 28, 2018](#)  [akidderw](#)

Dear Diary,

Today's Rating: 7

After careful consideration and thought, my deeper dive has decided on a project. According to Tee, I am not supposed to talk too much about it however to keep it a surprise. All that I know is that I have quite a to-do list in front of me. Austin, one of the instructors, told us that we would need to spend more than just class time to complete the project. This doesn't bother me, I am confident in my ability to work hard. It only means that I have to find a balance between working on the project for my research and the project I have chosen.

We were able to accomplish some basic features of the game. Not without Tee teaching me what VR sickness feels like. I do not get carsick. I can easily handle the movement of most VR. Rapidly moving back and forth in VR, then hit into a wall which caused a free spin with no gravity such that the floor would occasionally be above my head, was somewhat disorienting. But I know what steps I want to take next, I need only find the time to do so.

We almost printed the next trial for the biosensor project. After receiving a green light from one of our graduate students, we headed to the lab to print but someone else was using the printer. Their print was for another two and a half hours, so we had to put it off until tomorrow. Also, our other graduate student has followed up with us about the electrochemical biosensor that we helped test a little while ago. The testing will take place from 10-5pm, and so we will likely head over to help if we can. Also, we have a luncheon lecture by our faculty mentor, Dr. Gomes. I am excited because I hold Dr. Gomes in high regard.

We hope you'll tune in next time,

Aidan

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## The Literature Review Approaches

 [June 27, 2018](#)  [akidderw](#)

Dear Diary,

Today's Rating: 8

As the title would recommend, our literature review approaches. For our group, this seems a worrisome task. Not people the work itself is daunting, but rather that my project does not feel like research that can be lit reviewed. Our goal, is to make 3D parts with small channels. Our background reading could be summarized as looking up the specs of our printers. That is what we thought, until we met with Dr. Gomes. We asked her about the larger picture, and she responded something along the lines with using microfluidics to separate bacteria. I hope we wont experience too much trouble. I doubt we've completed the learning curve required to fully understand what our project even is.

After work however I had a rather pleasant encounter. Three people, possibly freshmen who didn't know me or who I was with at the time, said hi. The others guessed they mistook us for some other people, but I am choosing to believe they are just kind. After that however we went and did yoga. The experience was, like all of my other experiences with yoga, alright. It's something I'd do with people if they asked, but would never on my own.

Looking ahead, my graduate student has emailed me a green light to go and print a part I made. Also, he send me some changes he wants to a different part I sent him. Also, our deeper dive will start our large project soon so I have that to look forward to as well.

We hope you'll tune in next time,

Aidan

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## Friday more like Fries day

 [June 25, 2018](#)  [akidderw](#)

Dear Diary,

Today's Rating: 7

On Friday I spent most of my time working in Unity on our project. We nearly managed to get the user to pick up an item, use it to launch a projectile, and then be able to drop it. I imagine we will receive a new task on Monday. I hope that, by the end of the summer, we have a solid game with which to mess around in. I personally want to look into generating chunks of terrain so that we could travel endlessly in any direction. Imagine the Cosmos ship, but low tech; that's what I have in mind.

Over the weekend I was able to call a friend from high school, my mother, and my father. I also, having needed more food, biked to the store. On the way I saw a sign that said bike path and because I am an impulsive explorer, I decided to go on it. I enjoyed many gorgeous views before I realized I had biked 2 miles in the opposite direction. It all worked out in the end though, and I would definitely go exploring again if given the opportunity.

As for the Biosensor project, today we met with our faculty mentors and make a list of tasks for the next week.

1. Print and Test Octagon
2. Research "Downstairs Printer" (apparently the highest resolution printer is located downstairs)
3. Make a new part to test the limits of any printer
4. Test using UV lights to cure parts
5. Read up on latest research in the subject matter of "Inertial focusing, Particle focusing, and Microfluidics"

I am optimistic of our progress.

We hope you'll tune in next time,

Aidan

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## Thursday more like thorough is today

 [June 22, 2018](#)  [akidderw](#)

Dear Diary,

Today's Rating: 8



There were many things I enjoyed about my day. For starters, I went to an arcade, something which I have not done in years. Secondly, I increased the depth of my SolidWorks knowledge; I feel competent, if not functional. There are a few things I have seen which I have still do not know how to do, but the rest is there I think. Lastly, there was an interesting and useful luncheon lecture about receiving interviews. I found that it piggy backed well off of some other training I have received as part of Oberlin's PAL program. In the PAL program, there was a whole seminar about giving an introduction. The process is really thorough, but I found my students responded well. Now I have another area to work on; how should I answer the question "tell me about yourself?" Apart from these things, the only other thing I will note is the weather. In the morning I experienced what felt like being misted on by a spray bottle in the sky. Later however, I thought the breeze was amazing and although many might dislike the clouds darkening the sky, I always find stormy days are easier to see in. I hope the weather continues.

We hope you'll tune in next time,

Aidan

 REUJ2018  [Leave a reply](#)

## Wednesday more like We in this day

---

 June 21, 2018  akidderw

Dear Diary,

Today's Rating: 9

I came to a few realizations yesterday. Foremost, that choosing to do a virtual reality deeper dive at a virtual reality application center was an excellent decision. I am really happy with the group so far and I hope every subsequent day is as pleasant as the first. I got to use a lightsaber in VR, it was awesome. Our instructor, Austin, has even offered to show us some extra games at his place in our free time. Hopefully I'll find an opportunity to take advantage of that.

Secondly, dancing with one of my apartment mates made me realize how much I miss it. I cannot recall if I mentioned this before, but a friend from the dance scene at Oberlin lives near here and has mentioned wanted to come over to dance. Sounds fun 😊

Lastly, I've been thinking about the kind of work I want to do for a living and am pondering the possibility of HCI. In my mind, (and in a nutshell) I wanted to create new technology that would improve the standard of living without being expensive. So for example, new technologies for hospitals or firefighters or people with disabilities; that kind of stuff. I want to work for, and eventually lead, a team of smart individuals to make these new technologies. As the days go by, I am wondering if HCI fits that bill. I'll look more into it as the summer goes by.

Although I am a tad worried about graduate school. At the beginning, having faculty writing letters of recommendation were mentioned. But so far, not only has no faculty member been around to see me work, my work leaves little room for going above and beyond, so to speak. I want to make an impression through performance, and as it stands now, I do not see an easy way to do so. Because if my faculty mentors are never around, and my project remains a minuscule task, how am I going to go above and beyond?

We hope you'll tune in next time,

Aidan

 REUJ2018  [1 Reply](#)

## Tuesday more like twos day

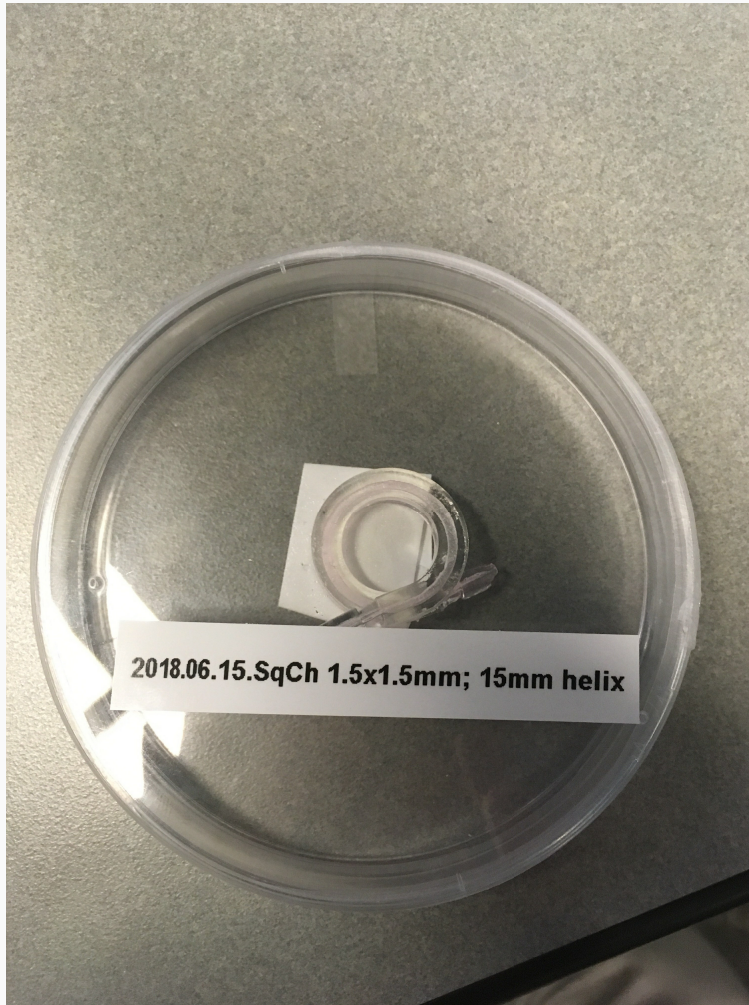
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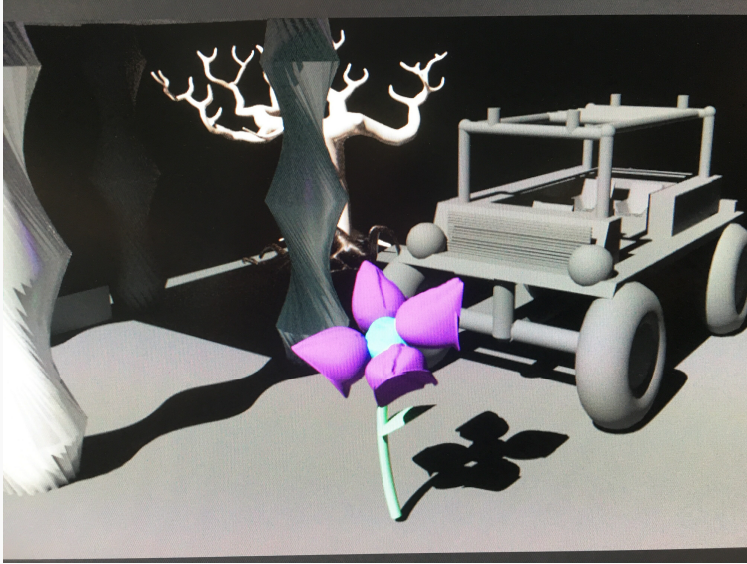
 June 19, 2018  akidderw

Dear diary,

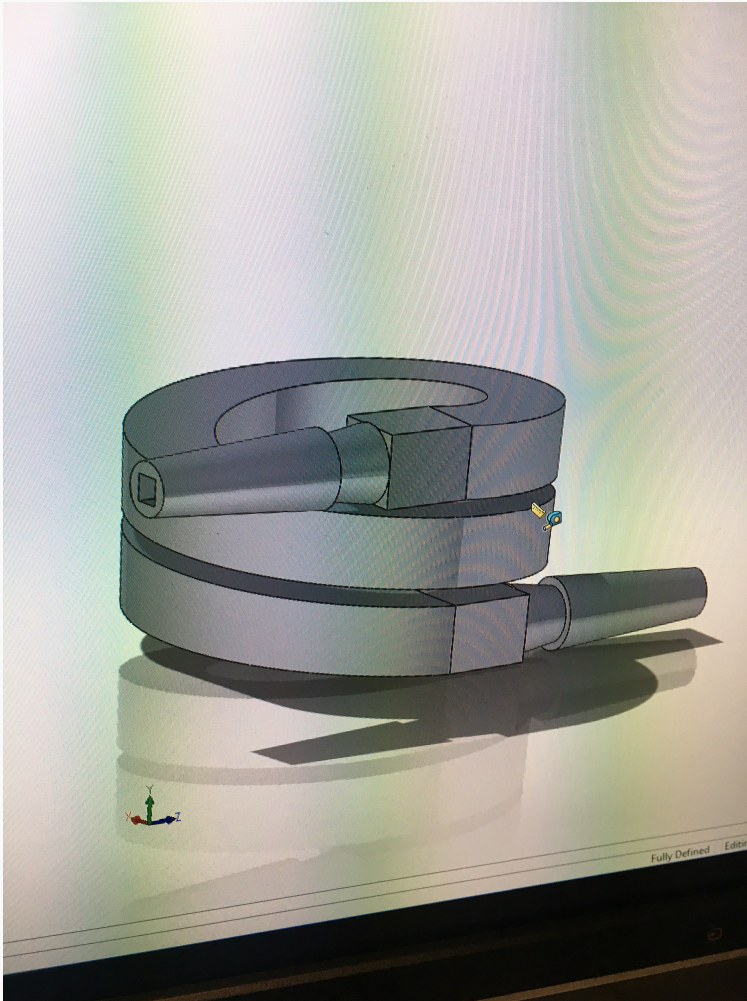
Today's rating: 7

It's official I have now seen both of my faculty mentors at least two times! We also may have solved the problem of the scaffolding. With the next batches of 3D printed things we may have our answer.





Also, look at these things we've done! The first image is of our primary test, which worked completely. The second is of a scene I made in Maya.



This image is the next model we're going to try and print. Hopefully it will be done in a few hours.

Things are looking good!

We hope you'll tune in next time,

Aidan

 REU2018  1 Reply

## Monday more like Wonday

 June 19, 2018  akidderv

Dear Diary

Today's Rating: 7

In an effort to maintain blogging once for each day, if not on the actual day, here is yesterday's blog.

Yesterday our faculty mentors are said to have returned! We only saw one of them though, and I am looking forward to having a meeting with them in the future. Additionally, I've been able to get some nice chats in with Cicero, one of my graduate mentors.

Also, having succeeded with a simple test of our design, we are now going to ramp up somewhat. We'll see how that goes.

We hope you'll tune in next time,

Aidan

## Weak part of my week

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June 18, 2018 [akidderw](#)

Dear Diary,

Today's (Friday + Weekend) Rating: 9

I believe that the majority of my weekend can be surmised into two main categories: general quality of life maintenance, and calling those whose company I enjoy.

The former refers to finishing up my bike and buying groceries. Fixing my bike was quite enjoyable because every time I return I learn something more about bicycles, a field of knowledge I find useful as I aim to build my own next semester. Although I cannot say the experience was something I'd like to repeat. I had forgotten to drink any water at all that day, and so spending a large amount of time in a sauna of a workshop make me feel rather lightheaded numerous times. But now, having put many hours into my bike, Val said that she would keep it for the next interns. Which makes me proud 😊

As for groceries, not much to say. Got food so I can eat. Nice

On Saturday, I was able to have lovely chat with my brother, mother, and father about fathers day. While the call itself was pretty uneventful, I enjoyed it nonetheless. Saturday night I was called out of the blue by an old friend with whom I have not spoken in a very long time. Needless to say we had a jolly conversation until 1am when I was unable to stay awake.

Looking into the week, our grad mentor has assigned us some part assignments to work on in Solidworks so I'm looking forward to getting started.

We hope you'll tune in next time,

Aidan

REUJ2018 [Leave a reply](#)

## Grad, a slice of life

---

June 14, 2018 [akidderw](#)

Dear Diary,

Today's rating: 9

This morning I was awoken at 4am by what sounded like a battle between gods



Thunder, distant yet powerful, accompanied heavy rain filled my ears this morning. It was awesome. I felt so relaxed through the whole thing: it was definitely worth losing some sleep. It did make showering a bit of a worry however.

Today my group completed our problem paragraph! Yay time management. Kudos to our graduate mentor for the assist in finding some nice numbers to put in. Also, we had another luncheon lecture, this time the speaker was a graduate student and we got pizza. Hence my clever title \*chortle\* \*chortle.\* I thought that her research would be closer to what I could expect as a graduate student. It was also nice to talk to someone who had similar motivations as myself, namely those away from academia.

I've received 3 separate flood warnings today and several people are walking about without shoes. Hopefully the rest of this day can be as calming as the beginning.

We hope you'll tune in next time,

Aidan

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## Feelin Solid about Solidworks

---

June 13, 2018 [akidderw](#)

Dear Diary,

Today's Rating: 6

I am almost competent at Solidworks. Just in time for the course to be over. Just as a scientist addressing evaporating water, you will be mist. Next we start Maya! I hope this Maya is as enjoyable as the person I know named Maya. More on that later.

Research Material. The dream team supreme is cruising on 6 articles to read about biosensors so we can try and make informed decisions.



The only reason I've rated this day less than a 7 is because I injured my hip and now walking is somewhat unpleasant.

We hope you'll tune in next time,

Aidan

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## I have taken pictures

 June 12, 2018  akidderw

Dear Diary,

Today's rating: 7.6

Today I've decided to post the pictures I've taken. The reason I have not included them before is because I dislike using my phone in almost all circumstances. Regardless, I've been asked to put them up. As I shall.



This is team biosensor in the first week. Admire the smiles, as hesitant as they are. Perhaps it's due to the headache we shared, perhaps the new team awkwardness. As you can see, Tee has some expertise in posing with glasses.





Here we can see Myself making a serious effort to be socially productive. Even going so far as including myself in the picture, these really earned me my good night sleep. I must admit, the first picture, featuring Stephan, is probably my favorite. His expression conveys doubt which I could never with only words. The second image I find jolly, everybody is smiling because we tried summerfest but forgot we're in Iowa and our expectations were way too high. Instead we ended up in a DQ 30 minutes from our dorm.



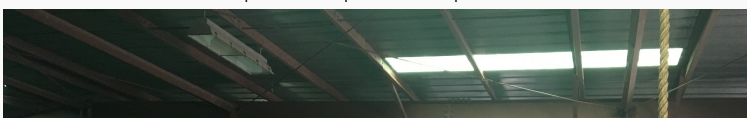
Behold, the result of my procrastination. I needed to be somewhere for some reason, but I impulsively went down a path instead that I though liked pretty. As you can see, time well spent. 3/5 would wander randomly again.



Horse came to say hay. I got to pet two horses, it was great, my life is forever changed. I do hope they get out of there sometime. Life would be boring if all I did was stay in stable to eat and participate in experiments.



ooh. Ahh. flowers. Aesthetic water droplets. I use this photo as an escape from a run on conversation.





the location and subsequent result of my labor where I worked on my bike. Will be back later to fix a few things.

Perhaps there will be more pictures soon. Depends on how willing I am to use the pocket internet box.

We hope you'll tune in next time,

Aidan

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## New week knew weak

[June 12, 2018](#) [akidderw](#)

Dear Diary,

Today's rating: 8

I apologize dear diary for my tardiness. I felt quite exhausted when I got back to the dorm, and so writing to you had to be put off.

Yesterday marked the transition of a great era: the departure of Jodi. May the odd rendition of a beach at paradise accompanied by cake and ice cream send you on your way.

Additionally, we started SolidWorks. I have used a modeling software package before, and I must say my first impression of SW does not compare well to my memory. In Middle School I was able to build houses, pools, anything my itty mind could come up with. Yesterday I spent nearly an hour trying to hollow out a brick. The instructors couldn't figure out why my particular method was not working. But, amusingly, my grad mentor came downstairs and then fixed all my problems in less than two minutes.

Looking ahead, I very much want to start work in the lab soon. I do have a few assignments to work on while the others finish their training, so at least I won't be bored. We'll see how that goes.

On a final note, I help refurbish a bike this weekend! I went in thinking it was going to be a 3 hour workshop, and in return, receive a bike. Instead, it was a nonprofit bike place that gives bikes to homeless or others in need. How rad! I ended up spending most of the three hours helping Val on a project other than my bike. I also chose a bike that needed a bit more work than the others (but it turned out to be a collectible, which is cool). In the end I spend around 6 hours there. I have a fully functional bike now! Though in the last minute Val realized that she had replaced one of the gear shifts with the wrong model so it's a bit of work to change one set of gears.

Eh, I'm pretty happy with it. Also, I may go back next weekend to finish it up, as well as do more helpful volunteer things, which I am excited about.

We hope you'll tune in next time,

Aidan

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## One small module for me, one giant step towards starting the project

[June 8, 2018](#) [akidderw](#)

Dear Diary,

Today's rating: 6

I finished training! Next week I can start in the lab! Also, by the end of this weekend I'll have a bike which I am definitely looking towards. I also finished my first course today. Woo! Hopefully the weather will remain sunny.

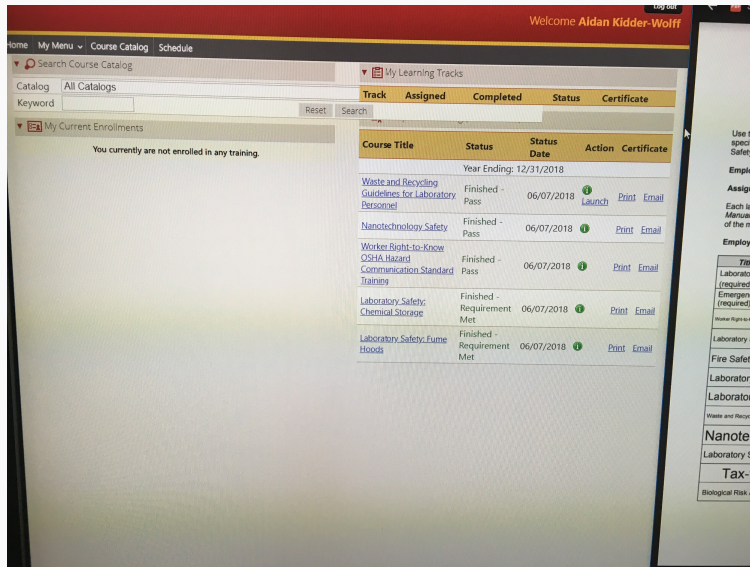
We hope you'll tune in next time,

Aidan

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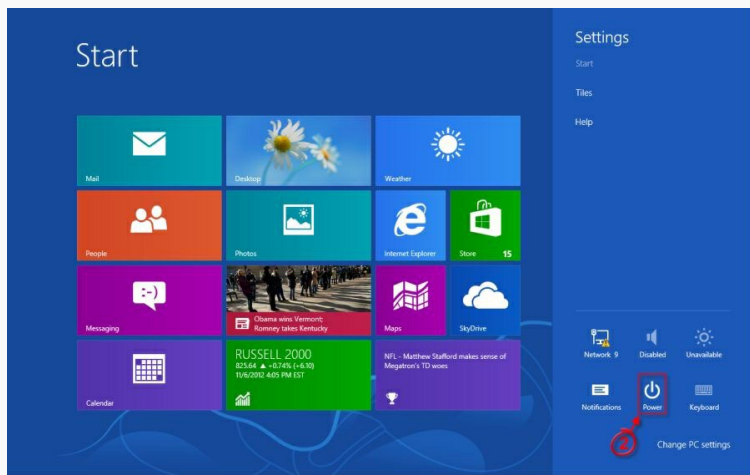
## HCI: Bad interfaces

[June 8, 2018](#) [akidderw](#)



Interface: This is the online interface for my lab training. I wanted to view all the courses I had completed.

Problems: The course search catalog bar extends far beyond where it should to the point where the white block covers another potentially usable part of the screen. Additionally, the part that is being covered up I guessed would be a drop down menu to filter display of the training modules I've completed. (Show last 5, show last 10, show all, etc) Instead, it only toggles visibility of the last 5 completed trainings. So then how do I view all of my completed modules? After some searching, it's My Menu->Reports->Transcript of Completed Training->"click on small eye icon". This was imperceivable and unpredictable.



Interface: This is the Windows 8 interface. My goal was to shut off the computer without using the power button.

Problem: I could not find the power button anywhere where I expected it to be. After searching google I learned that the power button was located in settings. Which is strange in of itself. Furthermore, the only way to bring up the menu where the setting were located in (as I was not using tablet mode on my desktop), you had to move your mouse to an invisible box in the bottom right corner of the screen, and then wave the mouse up and down a bit. For a simple task like shutting off a computer on Windows 8, I had to move my mouse to a special part of the screen I did not know existed, and then go into an interface that I believed was unrelated. Again this was terribly imperceivable and unpredictable.

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## Taco Thursday

[June 7, 2018](#) [akidderw](#)



Dear Diary,

Today's rating: 8

Update! The dream team supreme went to go talk to one of our graduate mentors today and we learned more about our project! Not from the graduate student, but from the co-founder of the organization that commissioned this project. Wild. The computer science related work will involve programming and running Microfluidics simulations of their models. Woo!

As for the rest of the project, most of the work I have is training. There are around 12 online modules that need to be completed before we can enter the lab. Additionally, we ought to turn out attention to our problem paragraph soon. I'm not too worried however. Our project seems quite well defined.

We hope you'll tune in next time

Aidan

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## It did not thunderstorm

 [June 6, 2018](#)  [akidderw](#)

Dear Diary,

Today's Rating: 7

On this day I took classes and got paid. An interesting twist. If only all undergraduate student life was like this.

On a more serious note I am a little concerned about my research now. I had thought that I would be applying my CS skills to my research project. Now, having nearly finished the C++ course, I am not so sure. First of all, my personal project seems more focused in Chemistry or Biology than CS. Additionally, if, in this project, the basics are as far as the computer science applications go, how valuable of an experience can this be? I don't doubt I'll learn many skills quintessential to being a graduate student, as well as have a lovely time with everybody. But if I am asked by a tech corporation, for example, what CS I did on this project, I fear my answer will seem lackluster. I (re)learned and applied basics. I do have Maya, Solidworks, and Unity to look forward too however. I hope that whatever we learn surpasses what I could do on my own.

Not to be too gloomy, I am really enjoying my time here. All of the other students, ISU students included, are really quite pleasant to spend time with. I particularly enjoy my two graduate mentors, as I find their characters and personalities to be fantastic. The other interns and I have already had multiple game nights, movie nights, and excursions to the nearby water park. So if nothing else I will have a fun time this summer.

Today it was supposed to thunderstorm. To my disgruntlement, it has not. Although, like last diary entry, someone has come in to say there is a thunderstorm warning in the county as I write this. So maybe there's hope yet...

We hope you'll tune in next time,

Aidan

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## Start of Something Wild

 [June 5, 2018](#)  [akidderw](#)

Dear Diary,

Today's Rating: 6

I'm quite glad I was able to meet with Eric, my graduate mentor, today. Although my group still has not received approval for training, and thus are unable to do work in the lab, Eric gave us a few articles about biosensors to begin our learning. I have learned that scientists use long words. I will admit my etymology background only got me so far, and that I had to look up many words in hopes of understanding what was going on.

Additionally, we had a rather pleasant talk with a professor here today about bio-fuels. I do not have many specific complements, but rather an overall feeling of goodness.

That may be, in part, due to my lack of sleep recently (not staying up too late but waking up too early). Furthermore, it would seem that the air conditioners in the center are either partially or completely off, making it a little toasty in here. As I write this, someone has come in to tell us that the air handlers are not working!

I am reminded of a scene in *The Muppets Christmas Carol* where many Scrooge's workers (played by Muppet rats) complain about the cold, and when confronted by the mean man himself, suddenly dress in island paradise clothing and sing "Heat wave!! *This is my island in the sun...*"

I need a nap.

We hope you will tune in next time,

Aidan

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## Classes with Classes

 [June 4, 2018](#)  [akidderw](#)

Dear Diary,

Today's rating: 7

Today marks the start of the several classes I will be taking over the summer. The first of which I feel quite optimistic about. The class is about C++, which I have done a little work with. Last semester I completed a course in C, during which we were not allowed an IDE. Therefore, having both an IDE and classes, I feel much better about the whole experience.

As for the weekend, it was a pleasant for the most part. All day Saturday I was just able to relax and organize my things as well as call my brother for nearly 8 hours. On Sunday there was a bit of a dorm emergency that required that I rush to a store, but it all worked out in the end. During the afternoon, myself and a few others went to the nearby water park. It was very wet. I had a lot of fun on the rafts and the slides. One slide in particular was my favorite because of how dark it was. Since I could not wear my sunglasses on the rides, everything was very bright for my light sensitive eyes. There was also a kind of "river" that you could float on and Gabriel had a good time pushing me under waterfalls so that I would get wet.

Looking towards the future I am most excited to meet up with someone I know from college who lives in Iowa. She has promised to spend time with me as well as take me to some dances. As for my project, I hope my group receives training approval soon. Without the approval we cannot get trained for lab equipment and therefore cannot do any work other than reading papers.

We hope you'll tune in next time,

Aidan

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# Inaugural Posting

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 June 1, 2018  akidderw

Dear Diary,

Today's Rating: 9/10

Finally after a few days I feel like I've been able to settle in somewhat. The weather here is quite hot, similar to what I would expect in Ohio, where I go to school. Amusingly, I may actually be rid of my pale vampiric white skin for a few months. As for the facilities, I find myself growing quite comfortable in my living space as well as the bus system. In fact, I 'clicked' more with my roommates than I had expected. We watched a movie together the first night in residence, and occasionally we've cooked breakfast together. As for the restaurants, so far I've not been too excited about many of the options. At my school, there's a restaurant called the Feve which everybody adores because of their excellent food. I had hoped that there would be one *amazing* place that I could try but it seems not. In other food related news, I tried meal prep yesterday. More on that tomorrow once I've actually tasted some of the food I prepared.

As far as the project is concerned, I am quite unsure of what will become of my summer. Yesterday we met with our mentors, both faculty and graduate student, and I must admit that I feel at a loss. I originally thought that I would be working on an affordable biosensor that detected blood sugar or blood pressure levels for people with diabetes. Another person in my group thought we were making simple fitbits. The project is actually on detecting bacteria on food. I am not unhappy with this however, I simply do not yet know the kind of work I will be doing over the next few weeks. After the presentation, we went on a tour of labs. So at least I know *where* I'll be working.

Today in particular I played with some very expensive toys, one of which costed 6 million dollars. I was whelmed. However, I found the evening much more enjoyable! Myself and six others tried going to the art walk, which kind of worked. We did see a few stands, we walked into some galleries, etc. I enjoyed most just walking and talking; which we did for around two and a half hours. We stopped at a Dairy Queen before heading back. I now have a lovely collection of goofy faces of the group. Today was a good day.

We hope you'll tune in next time,

Aidan

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## Hello World

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 May 31, 2018  akidderw

Cliché

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