G.I.R.L. TECH UPCOMING EVENTS

Hello interns (and parents)! Welcome to the first G.I.R.L. Tech internship newsletter.

We're excited to announce our upcoming internship events. Most of these special meetings and visits will take place during our normal Monday and Wednesday sessions. For meetings in locations other than the Entertainment Technology Center, we will send out driving directions closer to the meeting date. The ETC Soft Opening event does not fall within our usual meeting times but you are encouraged to attend if possible. Please don't hesitate to contact Laura Lantz at [redacted] if you have any questions.

WEDNESDAY, MARCH 18TH (I.E. TOMORROW!)

The core G.I.R.L. Tech members are presenting an overview of our project to the rest of the Entertainment Technology Center community. We would love to have you there—please arrive at the ETC promptly at 3:40 (or earlier if possible) to ensure that you're able to catch our presentation from the beginning.

After our presentation, robotic toy makers **Bossa Nova Concepts** (www.bnconcepts.com) will join us to talk about robotics in the toy industry and lead a brainstorming session about robotic toy designs that appeal specifically to girls.

WEDNESDAY, APRIL 1ST

BeatBots (www.beatbots.org) is visiting to demonstrate Keepon, a small yellow robot designed to study social development by interacting with children. We'll get to interact with Keepon (he dances!) and talk with Marek Michalowski about BeatBots' work creating robots for research, therapy, and entertainment.

MONDAY, APRIL 13TH

Instead of our usual meeting place at the Entertainment Technology Center, we will meet up at **Disney Research Pittsburgh** (www.disneyresearch.com) to see their motion capture lab, participate in a demonstration, and talk about how researchers are working to create life-like robotic movement for animatronics.

FRIDAY, APRIL 24TH

Soft Opening! This is an all-day (9am-4pm), open-house-type event in which all student project teams at the Entertainment Technology Center show off their completed (or nearly-complete) projects. You're welcome to join us in demonstrating the robotic painter exhibit to visitors and talking about your work on the project. There will also be a ton of other ETC projects you can check out—visit www.etc.cmu.edu/projects/ to get a sneak peek at what they're working on!

MONDAY, APRIL 27TH

We will meet up at the Entertainment Technology Center and travel to the workspace for **Mechanimal** (www.mechanimal.net), which develops robots for museum exhibits, research, and commercial use.

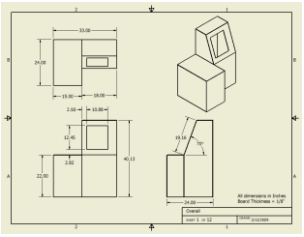
WEDNESDAY, APRIL 29TH

Instead of our usual meeting place at the Entertainment Technology Center, we will meet up at the **National Robotics Engineering Center** (www.rec.ri.cmu.edu) for a tour of the NERC and multimedia presentation about a variety of their past and current projects.

G.I.R.L. TECH NEWSLETTER #2

Hello interns and parents! This is the second of our weekly newsletters to keep you up-to-date with what is going on in the G.I.R.L. Tech internship program. Starting next week we will begin sending out these email updates regularly on Friday afternoons so you have time to read them over the weekend. If you are not currently receiving our newsletter and would like to be added to the distribution list, contact Laura Lantz at [redacted].

PREVIOUS WEEK IN RECAP



Last Monday our interns built a full sized cardboard mock-up of the Children's Museum exhibit to get a sense of how big the finished exhibit will be and to help prepare for building the real thing. Each of us was responsible for measuring and cutting out a different piece of the exhibit cabinet based on a set of blueprints. When all the pieces were cut, reinforced, and labelled, we joined them together using duct tape. All our measured pieces matched up pretty well in the end! The core team used the mock-up in our ½ semester presentation as a visual aid to show other ETC students and faculty the Children's Museum exhibit's planned size and layout.

On Wednesday, we met with robotic toy makers **Bossa Nova Concepts** (www.bnconcepts.com) to talk about robotics in the toy industry. Bossa Nova Concepts' David Palmer gave a presentation about the process of adapting research robotics for consumer-level applications and spoke about different careers involved in creating and marketing robotic toys. We then got to see Penbo, a robotic penguin toy that is not yet available on the market. Our interns brainstormed different concepts for future robotic toys to appeal to young girls and rated a variety of potential toy characters on their cuteness. Bossa Nova Concepts will be drawing on our ideas and opinions as they work to develop future robotic toys for girls!

COMING UP THIS WEEK

It's the week you've been waiting for! Tomorrow we start getting our hands dirty with actual programming and mechanical engineering.

For interns who want to get involved in programming, we will introduce the programming language Python (http://www.python.org/) and begin learning how to use it with the free open source game and simulation engine Panda 3D (http://panda3d.org/). After getting comfortable with these tools we'll use Python to write programs for the Children's Museum robotic painting arm and test the programs with a virtual robotic arm in Panda 3D.

For interns interested in mechanical engineering, we will introduce the Robotis Bioloids Kit, a hobbyist and educational robot kit, and begin learning how to put together robotic arms similar to the one used in the Children's Museum exhibit. After getting comfortable with the kit we will experiment with circuits and sensors and figure out what sensors we need to incorporate into the Children's Museum exhibit.

GENERAL ANNOUNCEMENTS

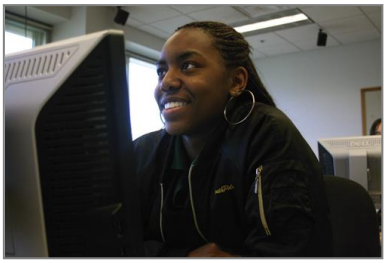
We are planning a congratulatory ice cream social for the final day of the G.I.R.L. Tech internship program, on May 6th. In order to participate in the ice cream social you need to attend at least nine out of the twelve regular Monday/Wednesday G.I.R.L. Tech sessions between tomorrow (Monday March 23rd) and May 6th. In addition, you need to document your internship experience by writing a journal entry and posting a blog entry for every session you attend. We look forward to celebrating with you!

Friday, March 27, 2009

G.I.R.L. TECH NEWSLETTER #3

Hello interns and parents, and welcome to newsletter #3! We send these updates every Friday to let you know what's going on in the G.I.R.L. Tech internship program. If you would like to be added to the distribution list, contact Laura Lantz at [redacted].

PREVIOUS WEEK IN RECAP



A lot of our activities thus far have focused on brainstorming and design, but this past Monday (March 23rd) the interns began programming and mechanical engineering in earnest. Interns on the programming track began learning how to code in Python with introductory exercises and examples, and interns on the mechanical engineering track used the Robotis Bioloids Expert Kit to build and test two robotic arms.

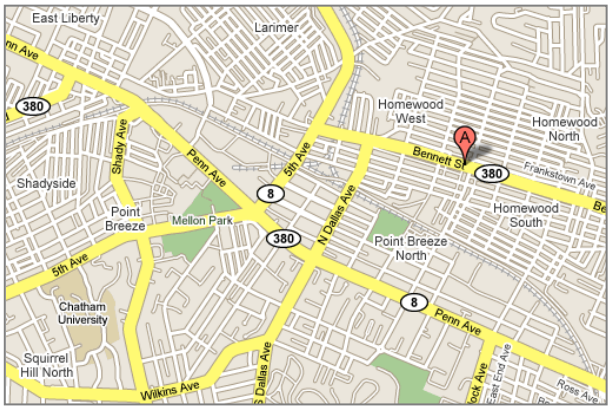
On Wednesday, March 25th, we talked about the definition of a robot and went over specific systems of robotic motion: forward kinematics and inverse kinematics. Then we broke out into our programming and mechanical engineering groups to build further on our learning from Monday. Programmers deconstructed a hangman computer game and wrote their own hangman classes in Python. Mechanical engineers modified the robotic arms to better replicate the arm we are using in the Children's Museum robotic painter exhibit, and then learned first-hand how difficult it is to control robot motion using forward kinematics!

COMING UP THIS WEEK

Now that our interns have had a chance to focus on either programming or mechanical engineering, it's time to branch out. This coming Monday (March 30th) we're reuniting to work on activities that require both sets of skills to cooperate together. We'll continue to improve our robotic arms and use Python and inverse kinematics to make them do cool things.

On Wednesday (April 1st) Marek Michalowski of BeatBots (http://beatbots.org) is coming to demo Keepon, a small yellow robot used to help children, especially those with developmental disorders such as autism. Keepon exhibits simple social behaviors and has cameras in his eyes and a microphone in his nose that collect information. He has also made appearances on NPR and Entertainment Weekly and starred in his own music video dancing to a song by Spoon. We'll get to interact with Keepon and talk with Marek about BeatBots' work creating robots for research, therapy, and entertainment.

GENERAL ANNOUNCEMENTS



Congratulations to our intern bloggers of the week, Sasha and Erin! You can see their blog posts featured on the G.I.R.L. Tech website's News page at http://www.etc.cmu.edu/projects/girl-tech/. Check out all interns' posts at http://www.etc.cmu.edu/projects/girl-tech/?q=intern-blogs.

This Thursday, April 2nd, at 5:30pm, the YWCA is having a mandatory parents' meeting to talk about structure and evaluation tools for this program. As part of the meeting we will be there to talk about the G.I.R.L. Tech internship program and answer any questions you may have. Please join us at the YWCA Greater Pittsburgh Homewood-Brushton Center at 7140 Bennett St, Pittsburgh, PA 15208.

Friday, April 03, 2009

G.I.R.L. TECH NEWSLETTER #4

Hello interns and parents, and welcome to newsletter #4! We send these updates every Friday to let you know what's going on in the G.I.R.L. Tech internship program. If you would like to be added to the distribution list, contact Laura Lantz at [redacted].

THIS WEEK IN RECAP

After a week of separate programming and mechanical engineering learning activities, it was time to bring all the G.I.R.L. Tech interns together again to begin focusing on a single goal: teaching their Robotis Bioloid robot arms to play tic-tac-toe. This is a complex project with many steps, and after Monday's work we're off to a really good start! The programming interns used inverse kinematics to control where the robot arm would place its pen and learned how to write a program in Python to play tic-tac-toe. The mechanical engineering interns created a tic-tac-toe board for the robot and experimented with different types of grippers to enable the robot to hold a paint marker.

On Wednesday, April 1st, Marek Michalowski of BeatBots (http://beatbots.org) came and introduced us to Keepon. Child development researchers use Keepon to observe and interact with children indirectly. Because of his very simple appearance and behaviour, Keepon is especially helpful for autistic children—he does not overwhelm them and can help them learn social behavior. Our interns had a chance to control Keepon using a Nintendo Wii remote and check out the inner workings that drive his dancing skills!

COMING UP NEXT WEEK

It's time for Spring Break! The G.I.R.L. Tech internship program will not be meeting at our usual Monday/Wednesday after-school times this upcoming week.

On Monday morning, April 6th, from 11:30-12:30, you're invited to join us for a free tour of the Children's Museum, the future site of our robotic painter exhibit. We'll check out many different exhibits including the art studio where children paint, the water play area on the 3rd floor, the slanted perception room, and the hands-on garage, which is where our exhibit will live once it is complete.

Enjoy your time off! If you want to continue familiarizing yourself with the tools we've been using, check out the Python programming language official website at http://www.python.org/, or take a look at the website of Robotis, the creators of the kit we used to make our robot arms, at http://www.robotis.com/zbxe/main.

GENERAL ANNOUNCEMENTS

We had some great blogs this week, and our latest intern bloggers of the week are Auriel and Samantha! We've featured their posts on the main News page of the G.I.R.L. Tech website—check them out at http://www.etc.cmu.edu/projects/girl-tech/. You can read all our interns' blog posts at http://www.etc.cmu.edu/projects/girl-tech/?q=intern-blogs.

And interns, your blogs don't have to be text-only—you're also welcome to include images from your digital cameras and camera phones. Feel free to take photos of your G.I.R.L. Tech visits and post them to the website. We would love to showcase your internship work and experiences as presented by you! You can find a whole lot of newly-uploaded internship photos at http://www.etc.cmu.edu/projects/girl-tech/?q=internships

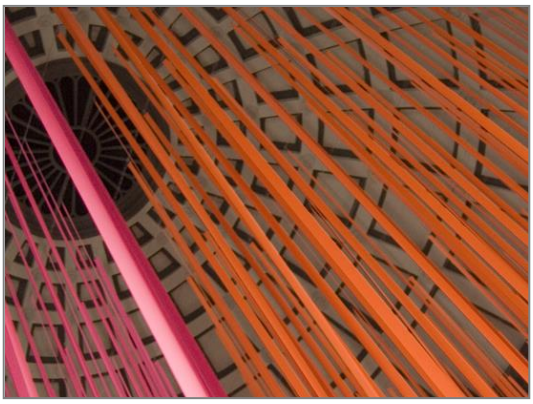
Friday, April 10, 2009

G.I.R.L. TECH NEWSLETTER #5

Hello interns and parents, and welcome to newsletter #5! We send these updates every Friday to let you know what's going on in the G.I.R.L. Tech internship program. If you would like to be added to the distribution list, contact Laura Lantz at [redacted].

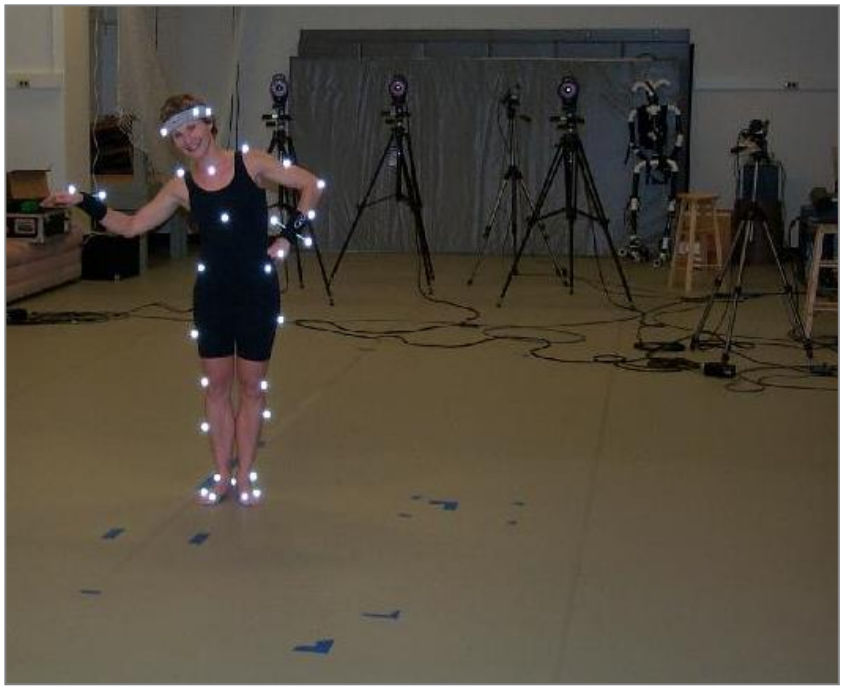
THIS WEEK IN RECAP

This past Monday, a bunch of us took a morning tour of the Children's Museum of Pittsburgh, where our robotic painter exhibit will open to the public next month. Because it was the first day of Spring Break, the museum was packed with children. We were able to see how kids interact with the Children's Museum's many hands-on exhibits in addition to exploring the displays and activities for ourselves. Other than this optional trip, we did not meet this week. We hope you all had a wonderful Spring Break!



COMING UP NEXT WEEK

We'll start our week off with a visit to the motion capture lab used by Disney Research Pittsburgh. We will meet on Carnegie Mellon University's main campus, at Wean Hall, the location of the CMU motion capture lab. Join us for a live demonstration of motion capture techniques!



Due to the Pirates game some of you are attending on Wednesday, we will not be holding our usual Wednesday meeting next week. Instead, we'll meet back up at 3:40pm on Thursday. This will be a photo and video day, so come ready to be videorecorded and photographed! We will work with the robotic arms we've constructed and programmed and talk about robots and our experiences with the project. Let's get the robotic arms to do some fun tricks for the camera. We also want your help in playtesting the robotic arm for the Children's Museum exhibit—our completion date for the exhibit is coming up fast!

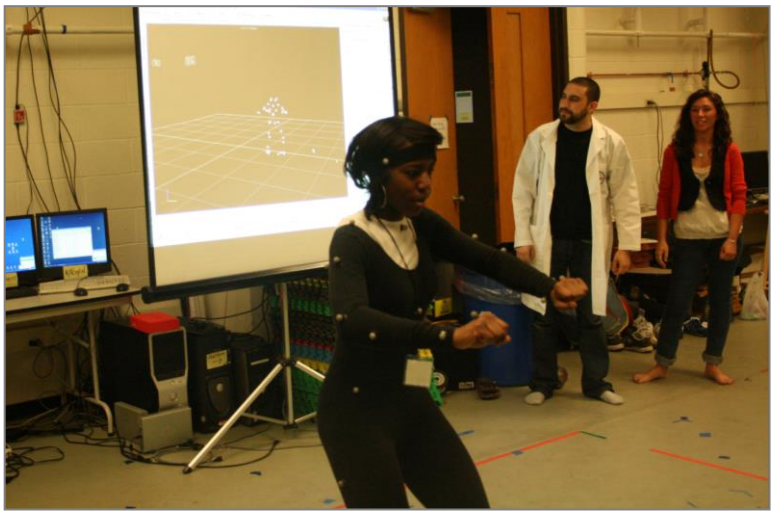
GENERAL ANNOUNCEMENTS

Do you have a younger brother or sister between the ages of three and seven who would like to help us test out our interactive exhibit for the Children's Museum of Pittsburgh? If you know of any kids who can come to the Entertainment Technology Center to try our robotic painter exhibit, please encourage their parents to schedule a time for their child to visit late next week. Play-testing will take about 10 minutes per child, and they will also receive a gift for helping us out. Please contact Laura Lantz by email at [redacted] or phone at [redacted] to schedule a time or to ask any questions you may have. Prospective visitors can check out the G.I.R.L. Tech website at http://www.etc.cmu.edu/projects/girl-tech/ to find out more about our work!

G.I.R.L. TECH NEWSLETTER #6

Hello interns and parents, and welcome to newsletter #6, the latest of our weekly updates to let you know what's going on in the G.I.R.L. Tech internship program. If you would like to be added to the distribution list, contact Laura Lantz at [redacted].

THIS WEEK IN RECAP



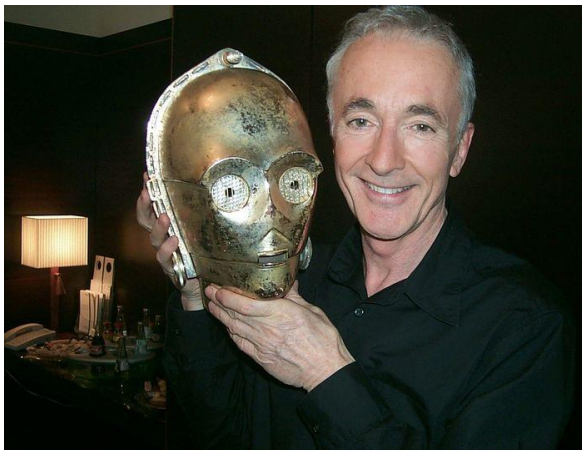
On Monday we travelled to Carnegie Mellon University's Motion Capture Lab to meet with members of Disney Research Pittsburgh. They explained how motion capture works and how these techniques are used to create animation in movies, video games, and robotics. We also got to see a live demonstration of full-body motion capture, thanks to our brave volunteer Tahlar!

On Thursday our programming and mechanical engineering intern groups continued their work on enabling the two Robotis Bioloids arms to play tic-tac-toe. Thursday was also video day—we interviewed everyone about their internship experiences, what they think about the program, and what they've learned about robotics during our time together.

COMING UP NEXT WEEK

We only have a couple weeks left! Next week is all hands-on activity working with the robotic arms. We'll bring the different components we've been working on together and get those two arms playing tic-tac-toe! We'll also take a look at the Children's Museum robotic painter exhibit, talk about everything that's gone into creating it, try out the exhibit and do some testing and troubleshooting.

Also coming up next week… English actor Anthony Daniels, known for his role as the droid C-3PO in the *Star Wars* series of films, is coming to the Entertainment Technology Center! He'll stop in during one of our sessions to talk about entertainment technology and see the project work that we've been doing.



GENERAL ANNOUNCEMENTS

We're still looking for playtesters! If you have a younger brother or sister or know of any kids between the ages of three and seven who can come to the Entertainment Technology Center to try our robotic painter exhibit, please encourage their parents to schedule a time for their child to visit late next week. Play-testing will take about 10 minutes per child, and they will also receive a gift for helping us out. Please contact Laura Lantz by email at [redacted] or phone at [redacted] to schedule a time or to ask any questions you may have. Prospective visitors can check out the G.I.R.L. Tech website at http://www.etc.cmu.edu/projects/girl-tech/ to find out more about our project.

Congratulations to our bloggers of the week, Samantha and Katie! You can check out their blog entries on our main News page. We also welcome you to upload your internship photographs to the website—go to http://www.etc.cmu.edu/projects/girl-tech/?q=node/add/image to add your photos!

G.I.R.L. TECH NEWSLETTER #7

Hello interns and parents, and welcome to newsletter #7, the latest of our weekly updates to let you know what's going on in the G.I.R.L. Tech internship program. If you would like to be added to the distribution list, contact Laura Lantz at [redacted].

LAST WEEK IN RECAP

Last week was our final hands-on activity week. Our programmers coded a tic-tac-toe game, set it up so that our robotic arms could play it, and implemented a basic artificial intelligence algorithm so people could choose to play games against a computer opponent as well as against another person. Our mechanical engineers learned how to use Google Sketch-Up to model their ideas, mounted the mechanical arms and tic-tac-toe board, and decorated the board to reflect their chosen theme of "girls versus boys." Everyone's work came together to create a great final product!

We also got to meet English actor Anthony Daniels, known for his role as the droid C-3PO in the *Star Wars* series of films. We talked with him about robotics and entertainment technology, and showed him our project work.

On Friday we had our Soft Opening, where we showed off our semester's work to the Entertainment Technology Center community. The robotic painter exhibit was very well received, and the tic-tac-toe game was a big hit! Samantha joined us and did a great job representing as an intern member of the team. Thank you Sam!

COMING UP THIS WEEK

It's our second-to-last week, with back-to-back robotics visits. On Monday, we'll meet up with Jason Bannister at the Entertainment Technology Center to talk about and show our project work. Then we'll travel to the workspace for his company, **Mechanimal** (www.mechanimal.net), which develops robots for museum exhibits, research, and commercial use.

On Wednesday, instead of our usual meeting place at the Entertainment Technology Center, we will meet up at the **National Robotics Engineering Center** (www.rec.ri.cmu.edu) for a tour of the NERC and multimedia presentation about a variety of their past and current projects.

GENERAL ANNOUNCEMENTS

Thanks for bringing in playtesters to try out our robotic painter exhibit for the Children's Museum. We keep making changes and improvements, and so we can still use your playtesting help! If you have a younger brother or sister or know of any kids between the ages of three and seven who can come to the Entertainment Technology Center to try our robotic painter exhibit, please encourage their parents to schedule a time for their child to visit. Play-testing will take about 10 minutes per child, and they will also receive a gift for helping us out. Please contact Laura Lantz by email at [redacted] or phone at [redacted] to schedule a time or to ask any questions you may have. Prospective visitors can check out the G.I.R.L. Tech website at http://www.etc.cmu.edu/projects/girl-tech/ to find out more about our project.

We're nearing the end of our eight-week program—keep an eye out for updates about our upcoming completion party and soft opening at the Children's Museum. We look forward to celebrating with you!

G.I.R.L. TECH NEWSLETTER #8

Hello interns and parents, and welcome to newsletter #8, the last of our weekly updates to let you know what's going on in the G.I.R.L. Tech internship program. It's been great working and learning with you and we thank you for being a part of our program.

SEND YOUR GOOD WISHES TO MONIQUE!

Our YWCA coordinator, Monique McIntosh, was rushed to the hospital last week due to a sudden health emergency. She's been diagnosed with shingles but is out of the hospital now and doing ok. Please send good thoughts her way for a speedy recovery!

LAST WEEK IN RECAP

This past week we visited Mechanimal, a group that works on a variety of robotics projects for museums, toy companies, and more. We also toured the National Robotics Engineering Center where we saw enormous robots that are used in different environments.

THE FINAL WEEK OF G.I.R.L. TECH

This is the eighth and final week of the G.I.R.L. Tech internship program. We've really enjoyed getting to know you guys and having you be a part of our project. Now we have a couple of events coming up to wrap up the program and celebrate everything we've accomplished together this semester.

We will not be meeting on Monday, May 4th—our project team will be busy watching other ETC groups give their final presentations. This Wednesday, May 6th, is the last day of our program and two special events in one. We will meet you at the Children's Museum of Pittsburgh for our Soft Opening of the robotic painter exhibit, when we'll make our exhibit publicly available at the museum for the very first time. We'll also have a completion ceremony and ice cream social to celebrate the conclusion of your internships. We'll show off the tic-tac-toe game that you created, hand out certificates of completion, and eat ice cream. Parents, please join us to see what our interns have been working on over these past weeks!

EXHIBIT GRAND OPENING

The official grand opening of our exhibit, Lynxie's Art Studio, takes place on Saturday, May 9th, at 1pm. You are welcome to join us, and we encourage you to spread the word—we'd love to have lots of kids there to try out the exhibit on its opening day!

THE FUTURE OF G.I.R.L. TECH

We hope that you've enjoyed our program this semester. You've helped us to create the Children's Museum exhibit and also completed some really cool projects of your own—especially the tic-tac-toe game, which we hope to put on display and make available to visitors at the ETC after this semester is over. You've also visited with groups in the Pittsburgh area who use robotics to encourage kids' play, to help with psychology research and social development, to create lifelike animation, to entertain and communicate ideas, and to aid in tasks that are dangerous or difficult for humans to do. With any luck these experiences have gotten you thinking about programming, mechanical engineering, and robotics in a new way. There are a ton of different applications for robotics out there, and now you know a little more about the behind-the-scenes skills that go into so many of the technologies that surround you in your daily life.

The ETC is currently in discussion about the possibility of having more projects based around girls and robotics in future semesters. If you would like to see additional programs like this one, or if you have recommendations for future programs, please email me at [redacted] and let me know your thoughts so I can pass them on to the people making this decision. Thanks again for your participation—we couldn't have done it without you!