

## **INTERNSHIPS IN TECH & SOCIAL JUSTICE**

ITP has partnered with a series of non-profit organizations focusing on technology, social justice, youth, education, and people with disabilities. Interesting internship opportunities applying physical computing, web development, game development, sustainable energy, and more are the result of these partnerships.

Students work on specific applications with each organization by registering for two internship credits. Enrolled students also participate in a biweekly seminar. Students are approved by the organizations they will work with through Marianne Petit. This internship program is supported by the Nathan Cummings Foundation and participating students receive a \$1000 stipend.

Below is a brief summary of each organization and areas of internship interest. Following are full organizational and project descriptions. If you are interested, please speak to your advisor during your advisement appointment and add the internship to your 10 choices. Then, contact the organizational contact as well as Marianne Petit. We hope to have everyone registered by the first week of classes, spring 2009.

## **ORGANIZATIONAL PARTNERS & OPPORTUNITIES / AREAS OF INTEREST**

**THE AHRC** is a family governed organization, is dedicated to enhancing the lives of individuals with intellectual and developmental disabilities and their families.

Opportunities: Physical Computing, Video, User Interface Design, Education

**THE ALS ASSOCIATION** is the only national not-for-profit voluntary health organization whose sole mission is to find a cure for amyotrophic lateral sclerosis (Lou Gehrig's disease) and improve living with ALS.

Opportunities: Game Development, Physical Computing, Programming, Assistive Technology

**CHIMES INTERNATIONAL** is a multi-service agency licensed in 6 states, Washington D.C., and Israel that provides a wide range of services and supports to people with developmental disabilities. They are in the process of building the first vocational and social network for people with cognitive disabilities.

Opportunities: Web Development, Networking, Social Software, User Interface Design, Research

**THE LOWER EAST SIDE GIRLS CLUB** is dedicated to providing a place where girls 8-18 can grow, learn, have fun, and develop confidence in themselves and their ability to make a difference in the world. The Girl's Club is looking to developing basic physical computing workshops for girls 10-15.

Opportunities: Physical Computing, Education

## **METROPOLITAN -HEALTH AND HOSPITALS CORPORATION**

This internship will provide an immersive clinical environment for assistive technology developers in an acute inpatient and outpatient adult and pediatric rehabilitation setting.

Opportunities: Physical Computing, Programming, Assistive Technology

## **RUSK INSTITUTE OF REHABILITATIVE MEDICINE & NYU MEDICAL CENTER**

Rusk is the largest university-affiliated center devoted entirely to inpatient/outpatient care, research and training in rehabilitative medicine. There are several projects in development

at RUSK and the NYU Medical Center: Digital Wheel Art, Reach, and Graffiti Wall.  
Opportunities: Physical Computing, Programming, Flash Development, Game Development, Video Tracking, Video, Animation, Music, Education

**SMIT** is a sustainable design start-up company that is developing a new approach to solar and wind power.

Opportunities: Physical Computing, Programming, Sustainable Energy

**VISION EDUCATION & MEDIA** is committed to creative uses of technology as an instrument for educational excellence, student achievement, and school reform. Vision has received an National Science Foundation for "GreenFab: Sustainable Design Through Engineering and Technology After-School and Summer Enrichment Program" as well as a MacArthur Foundation Digital Media and Learning grant to develop an interactive homebrew science website for middle school students.

Opportunities: Education, Web Development, Sustainable Energy, Networking, Physical Computing

**FULL ORGANIZATIONAL AND PROJECT DESCRIPTIONS FOLLOW.**

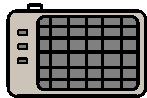


AHRC New York City, a family governed organization, is dedicated to enhancing the lives of individuals with intellectual and developmental disabilities and their families. AHRC contains six schools: four preschools, one elementary school, and one middle/high school. AHRC's schools have a commitment to serve ALL children by embracing maximum integration of children with special needs and typically developing peers.

As an intern for AHRC, you will be supervised by an ITP alumna. She wants to ensure that you have practical applications of your studies that benefit students with special needs.

## **Current internship opportunities with AHRC's Schools:**

### **Assistive Technology Assistant (Programming/ Phys Comp)**



Help non-verbal autistic students communicate their wants, needs, and desires.

Develop assistive technology devices to aid in communication.

### **Assistive Technology Assistant (Designer)**



Help autistic students learn to communicate.

Design symbols (vector graphics and photographs) representing abstract and concrete concepts.

### **Filmmaker**



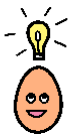
Help autistic students learn how to play and interact with others appropriately. Share your skills to help in the assessment/treatment of play, language, and social skills of students with special needs.

### **Educational Technology Assistant**



Share your tech skills with teachers. Collaborate with teachers and support staff on implementation of classroom technology.

### **Intellitools Designer**



Help teachers incorporate classroom activities into classroom technology. Design templates and activities in Intellitools, which enables teachers to design interactive curricula-relevant activities.

**For more information contact:** Keledy Kenkel [Keledy.Kenkel@ahrcnyc.org](mailto:Keledy.Kenkel@ahrcnyc.org)

## **ALS Association ITP Internship Spring 2009**

The ALS Association is the only national not-for-profit voluntary health organization whose sole mission is to find a cure for amyotrophic lateral sclerosis (Lou Gehrig's disease) and improve living with ALS. ALS is a progressive neuromuscular disease that causes weakness in all voluntary muscles.

In pursuit of our mission, we provide many services to patients with ALS. The service that the intern will be involved in is our assistive technology program.

The assistive technology program serves patients in a variety of ways, including conducting home visits to address different assistive technology needs, providing a wide variety of loan equipment from our loan closets, as well as providing information with regard to every area of assistive technology.

The internship will provide the student with exposure to a variety of areas of assistive technology. Also the intern will observe patient care at our Beth Israel ALS Certified Center, a multidisciplinary ALS clinic.

The intern will have the opportunity to participate in home visits with the assistive technologist as well as work on a special project.

Examples of projects:

1. Reading books. A lot of our patients enjoy reading, and quickly their decrease in physical abilities prevents them from enjoying this leisure activity. There are some page turners on the market, but they do not work well and are expensive. Most patients do not like audio tapes; they want to retain the idea of actually reading text as much as possible. This project would involve designing either a stand alone device or a computer interface that would provide access to physical books to ALS patients. Some work was done on this problem by a previous ITP intern, but much more development and user testing needs to occur to bring this project to prototype status.
2. Build a driving skills screening device. At our ALS Clinics patients are screened for their current physical abilities. Often the issue of driving comes up and we need a way to test basic physical abilities for driving. The project would involve researching required reaction times and other physical/perceptual requirements for driving. Then a physical device would be built to test these abilities and give the patient feedback as to whether they have the basic abilities to continue driving. This is not a driving simulator, but a device to test basic abilities required for safe driving.

For more information, contact Antoinette Verdone: [verdone@als-ny.org](mailto:verdone@als-ny.org)

## **CHIMES**

### **The first-ever Vocational and Social Network for individuals with disabilities**

You will be working with Chimes International, a multi-service agency licensed in 6 states, Washington D.C., and Israel that provides a wide range of services and supports to people with developmental disabilities. There are two initiatives that you will have an opportunity to work on for the Chimes community 1) a universally usable and accessible web site and 2) a Vocational and Social Network to connect participants with job opportunities and with each other. These two, linked projects are exploring some uncharted territory so you will be involved in new creation.

- 1) The Web Site Initiative was borne out of the acknowledgment that compliance to Section 508 and web standards does not produce true accessibility and usability. This project is about addressing:
  - a. User Interface design that is adaptable to various ranges of physical input and cognitive levels
  - b. Providing a range of intuitive output options based on physical and cognitive needs
  - c. Researching new technology and finding new ways to use existing technology

In short this is not your momma's web site. You will be redefining the user's experience for a population often overlooked especially on the Internet. What you discover working with us may have a wider application beyond the Chimes audience.

- 2) The Vocational and Social Network is a completely new project with the focus on connecting the people with disabilities with work resources and with each other. The vocational network's goal is to utilize social networking tools in innovative ways to connect Chimes 12,000+ participants with employment opportunities. This is uncharted waters. The following are some of the areas you will be exploring:
  - a. Design and develop a system that learns about and responds to a user's comprehension preferences through their interactions. (user interaction filtering)  
Some initial ideas:
    - i. Track preference for Avatar, Graphic and Text-based User Interface
    - ii. Design and Track Game play
  - b. Design useful and comfortable user interaction and communication between the individual and their case managers, and other members of the Chimes community
  - c. Researching technology and methodologies to implement the system that will allow easy entry points for users, and grows with the user's usage.

These projects are an exciting opportunity for you to have a positive and empowering impact on a population that is often overlooked. Chimes operates across the Northeast and has satellite facilities in Israel. You will have the opportunity to visit one of the facilities and meet your audience.

We are looking for motivated individuals with the following skills and/or interest:

- Developer/Coding skills: (including but not limited too)
  - o PHP, Java, MySQL, Python
- Front Development:
  - o Javascript, Ajax, xHTML, XML, CSS
- Graphic Design/Information Architecture
- Research :
  - o Find new technologies or find new ways to use existing technologies
  - o Experiment and Test for real world application

For more information, contact Pollie Barden: [paba77@gmail.com](mailto:paba77@gmail.com)

## **THE LOWER EAST SIDE GIRLS CLUB**

The Lower East Side Girl's Club (<http://www.girlsclub.org>) is dedicated to providing a place where girls 8-18 can grow, learn, have fun, and develop confidence in themselves and their ability to make a difference in the world. All Girls Club programs are designed to raise the next generation of Entrepreneurial, Environmental and Ethical Leaders.

We are building a program for the Lower Eastside Girls Club that will be a "Baby ITP" - a basic circuits and physical computing class for girls 10 to 15 years old. We are looking for an intern who can run a minimum of 6 introductory classes with simple circuits including LEDs, solar panels, motors and very basic physical computing and programming concepts. If you have a particular idea for a project, no matter how wacky, that can be the end result of these classes, please pitch it to us. To find out more about the Girls Club, go to [www.girlsclub.org](http://www.girlsclub.org).

For more information, contact Jenny Dembrow: [jenny@girlsclub.org](mailto:jenny@girlsclub.org)

## **Internship at Metropolitan –Health and Hospitals Corporation (Department of Rehabilitation Medicine, Occupational Therapy)**

This internship will provide an immersive clinical environment for assistive technology developers in an acute inpatient and outpatient adult and pediatric rehabilitation setting. Interns will learn to identify clinical needs through in-service/lectures on various diagnoses, supervised patient interactions and observations and collaboration with the rehabilitation team. Once clinical needs are identified, the intern, along with an OT assistive technology developer, will take an active role in the early stages of assistive device development, in direct user testing, and in prototype redevelopment. Interns will also be expected to utilize their background knowledge to improve upon assistive devices currently in use at the facility.

(Required knowledge: Physical computing, programming, interest in assistive technology development a MUST)

(Preferred knowledge: 3D software development, mobile applications)

### **PROJECTS FOR SPRING SEMESTER:**

1. Prototype redevelopment of an upper extremity motor control assessment and treatment device. This device will be used by neurological patients who are regaining lost upper limb function. The device will provide creative visual and auditory feedback in response to movement. The device is required to be wireless, lightweight, easy to don/doff, and not impede movement.
2. Prototype development of a head control attachment for a manual wheelchair (A special case project for a child with cerebral palsy). This project aims to document changes in the child's postural and head control, and to promote improvements of these skills by providing a personalized, motivating, interactive, age-appropriate, non-obtrusive tool that would respond to the child's head movements.

For more information contact Rusalette

## **RUSK MEDICAL CENTER**

**Digital Wheel Art** is an assistive drawing system that encourages people who use wheelchairs to express themselves in artistic ways beyond their physical limitations. Working with the Rusk Institute of Rehabilitation Medicine Pediatric Unit, we will install a system at Rusk and provide the patients the opportunity to utilize this state of the art technology. We are looking for someone who is able to engage and guide children of various ages and abilities in the use of this system. Someone who is good at electronics (XBee, PCB, and Wiimote hacking) and packaging it is preferred or would be most helpful.

## **REACH**

The Reach Project is a collaboration between Interaction Designers and Occupational Therapists in the development of a specialized video tracking and interactive projection environment for use in pediatric rehabilitation. The reactive environment is used to inspire, motivate and track the progress of patients through a series of open ended and playful games.

Current goals:

- Advance the current prototype to a plug and play system that OT's can operate without assistance
- Further develop game environments that meet therapeutic goals
- Create a measurable game for assessment and re-assessment
- Install the trial system hardware and software at NYU Medical Center for evaluation and testing

Interns will collaborate with the project core team to advance and deploy the existing prototype system. User interface and game specification detail will be reviewed at the beginning of the internship along with a detailed project plan outlining milestones and dates that ensure deployment towards the end of the semester at NYU Medical. A test and development environment will be setup on the floor at ITP or frog Design at the beginning of the semester for iterative development and testing.

This internship will be highly collaborative and rewarding to any contributors with the desired skills and interests.

Desired Skills and Interests (must meet one or both):

Required Skills (programming assistance):

- Experience with programming in Flash Actionscript, MAS/MSP, flex and/or Java
- Interest and or experience in video tracking
- Interest in assistive technology

Required Skills (game assistance):

- Experience with animation in flash or other platform
- Interest in immersive game environments
- Interest in assistive technology

## **Overview of Rusk’s “Look What I Can Do!” GRAFFITI WALL, Collaborative Game & Collaborative Art Projects**

**Look What I Can Do!** is an innovative program that uses art and technology to address the attitudinal barriers that children with disabilities can encounter – including their own internal barriers as well as those of others. Quality of life for disabled children can be greatly improved by reducing negative attitudes and stereotypes held by non-disabled children. The **Look What I Can Do!** program will include: a virtual GraffitiWall where children can learn about disabilities and share their experiences in an interactive environment; a web-based video game featuring disabled characters; and a Community Collaborative Arts projects. These are described in the enclosed proposal.

The Rusk Institute of Rehabilitation Medicine is renowned for treating pediatric patients with a wide range of disabilities, providing individualized, integrative care through inpatient and outpatient settings. In the most recent *U.S. News and World Report* survey of hospitals in the U.S., Rusk was ranked the #1 rehabilitation hospital in New York State and one of the top 10 best rehabilitation hospitals in the country.

**Look What I Can Do!** combines three complementary approaches – an interactive GraffitiWall, a video game, and collaborative arts projects. The Rusk Teen/Young Adult Advisory Board is an integral part of all content development and evaluation. Each component is described in further detail below.

### **1. Rusk GraffitiWall**

The Rusk GraffitiWall is a virtual community center where participants can learn about people with disabilities in an interactive environment. The Rusk GraffitiWall provides a safe, interactive hands-on learning experience online for children (ages seven to twelve years old). “Able” children will nurture their understanding and empathy with their disabled counterparts, while disabled children will have the opportunity to share personal stories as well as chat with other disabled and non-disabled children while expressing themselves creatively. Relevant organizations, such as the United Spinal Association, Lincoln Center Program for People with Disabilities, the NYC Parks & Recreation Department, and the Mayor’s Office for People with Disabilities have already been invited to create educational and recreational activities for inclusion on the GraffitiWall. They and other groups will be offered the opportunity to provide links to the GraffitiWall from their websites.

### **2. Video Game**

The Rusk Institute for Rehabilitation will be creating a video game designed with and by people with disabilities for use with the general public. The first such game of its kind, the **Look What I Can Do!** video game will offer a serious message about the capabilities of disabled people. This initiative is part of the “serious games movement” which is receiving national publicity and recognition and is demonstrating a high impact by using enjoyable, interactive tools to play a powerful role in the lives of millions of gamers. Rusk has identified a leading developer in the online games industry, and has outlined the framework for a complex 3D, multi-level game experience. In collaboration with the game developer, the game will be market tested with both disabled and non-disabled children.

### **3. Community Collaborative Arts Projects**

The collaborative arts portion of the **Look What I Can Do!** is called *Creating Connections*. This unique program brings together children with disabilities and those who are typically developing to create art in a collaborative process. Over several weeks the *Creating Connections* participants engage in a creative arts project, which culminates in an exhibition opening at the Children's Museum of the Arts. The exhibition celebrates the children's experience working together and also provides an opportunity for families and community members to share in this partnership.

#### **Internship position #1**

##### **Flash Game Developer**

###### **Role:**

- Develop a healthcare oriented game with the Rusk children's POV (point of view)
- Collaborate with the Rusk kids as a resource for the:
  - Game Play
  - Which game POV (first person, 3<sup>rd</sup> person, etc.)
  - Assets (photos, drawings, audio, video, etc.)
- Create a roadmap so the kids and the Rusk staff know when different milestones will be reached
- Roadmap will include:
  - Periodic "interviews/feedback sessions" with Rusk kids
  - Storyboards with screen mock ups of characters (if apropos), backgrounds, description of game play sequence
  - Running beta version for the kids to test
  - QA time with the kids
  - Help write the game's "help" screens
  - Assist launching game within GraffitiWall
- Provide weekly updates to Color, Light & Shadow folks
- Try to make the flash game no more than 10mg and design so that it'll fit nicely within the GraffitiWall visible area
- Simple is fine especially since the semester is short
- Be vigilant to design a:
  - fun game with the Rusk kid POV
  - simple user interface
  - bug-free and smooth running game

###### **Skills:**

- People person who loves to collaborate in a team atmosphere
- Willing to listen to the Rusk kids for their feedback
- Thinks outside of the box
- Knows Flash Actionscript 3
- Has an understanding of Flash Media Server 3
- Understanding of .net if possible
- Design flare (if possible would love to see portfolio of links and hardcopy versions of past projects)
- Facile with design software (photoshop, illustrator, flash, dreamweaver, etc)

## **RUSK GRAFFITI WALL (CONT)**

### **Internship position #2**

#### **Videographer**

##### **Role:**

The Rusk kids LOVE video and they LOVE celebrating their accomplishments with others. To that end, the Videographer will act as the Director and Producer of short videos for and about the Rusk kids.

Consideration should be taken re: the following:

- Develop videos with the Rusk children POV
- In the past Rusk kids enjoyed making video interviews and they also discussed creating PSAs
- Collaborate with the Rusk kids as a resource for:
  - Storyline and video's objective
  - Needed assets (photos, drawings, audio, video, etc. if apropos)
  - NOTE: make sure the kids sign off Rusk's permission forms if their image will be included in the video
- Create a roadmap so the kids and the Rusk staff know when different milestones will be reached
- Roadmap will include:
  - Periodic "interviews/feedback sessions" with Rusk kids
  - Storyboards
  - Editing videos, recording audio, saving as a flv (no bigger than 25mgs) and uploading onto the GraffitiWall
- Provide weekly updates to Color, Light & Shadow folks

##### **Skills:**

- People person who loves to collaborate in a team atmosphere
- Willing to listen to the Rusk kids for their feedback
- Thinks outside of the box
- Video editing software like AfterAffects. If they prefer a different package then make sure the final product is saved as a flv.
- Understanding of Flash Media Streaming Server 3
- Design flare (if possible would love to see portfolio of links and hardcopy versions of past projects)
- Facile with design software (photoshop, illustrator, flash, dreamweaver) if videographer wishes to include graphics, credits, title screens, etc.

## **RUSK GRAFFITI WALL (CONT)**

### **Internship position #3**

#### **Digital Designer/Composer (this is probably 2 individuals)**

##### **Role:**

- Develop folders containing an archive of still and animated graphics as well as audio fx and tunes (all being copyright-free) for the Rusk patients to use on the public and private Walls.
- This person will also incorporate Rusk kids' feedback and hopefully engage the kids to collaborate with them in creating the following:
  - A folder containing background images (photos and drawings to reskin Wall backgrounds)
  - A folder of images (gifs, pngs, swfs, and jpgs) and a folder of audio (mp3s) so both the Designer/Composer and the kids can easily assemble fun multimedia NotePads and BillBoards as well as have an archive of avatar images
- This person should create a roadmap so the kids and the Rusk staff know when different milestones will be reached
- Roadmap will include:
  - Periodic "interviews/feedback sessions" with Rusk kids
  - Sample mock ups of the images and audio snippets
  - Help kids upload the assets into the proper folders (folders could be labeled: avatar images, graphics, animated swfs, audio, pdfs, etc.)
- Provide weekly updates to Color, Light & Shadow folks

##### **Skills:**

- People person who loves to collaborate in a team atmosphere
- Willing to listen to the Rusk kids for their feedback
- Thinks outside of the box
- Design and or Composing flare (if possible would love to see portfolio of links and hardcopy versions of past projects)
- Facile with design software (photoshop, illustrator, flash, dreamweaver) and audio software (garageband, etc.)

## **Sustainably Minded Interactive Technology (SMIT)**

SMIT requires interns for prototyping and programming of a hybrid solar and wind generator design. This project will require some electronics know-how, as well as at least a cursory knowledge of programming data-logging (Processing/Java, php or python is fine). You will be working to help engineer a prototype of a new-to-market sustainable design product with the SMIT team (including ITP alum Raphael Zollinger '08)

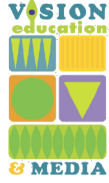
SMIT - Sustainably Minded Interactive Technology, LLC was founded by Teresita Cochran (ITP '05) and Samuel Cochran (Pratt BID '05) in the spring of 2005.

SMIT is a sustainable design start-up company that is developing a new approach to solar and wind power. We were honored to exhibit our first product GROW, a hybrid energy delivery system inspired by ivy, at the Museum of Modern Art in the exhibition Design and the Elastic Mind (Feb 19th - May 12th, 2008). The prototype has since been acquired by the MoMA for their permanent collection.

Our mission is to create Sustainably Minded Interactive Technology.  
We provide a sustainable relationship between our clients, our products, and the environment.

SMIT's work connects and provides for people in pursuit of a zero footprint lifestyle by creating a rich portfolio of products and a dense network of relationships.

For more information please contact Teresita Cochran: [sita@s-m-i-t.com](mailto:sita@s-m-i-t.com)



## Vision Education & Media Internship Program

Vision Education & Media is committed creative uses of technology as an instrument for educational excellence, student achievement, and school reform. Our mission is to empower youth to use technology (computers, video, electronic music, Internet, robotics & beyond) in creative, project-based ways. Our goal is to provide youth with enriching educational opportunities in school and beyond school that empower them as creators, designers, authors and producers of content and original works.

Vision Education & Media founder Laura Allen has worked with teachers and students and technology for over twenty five years, creating some of the field's most effective solutions for using technology as a tool for learning and teaching. An early interest in LOGO programming led Laura to the Harvard Graduate School of Education where she collaborated on projects with the MIT Media Laboratory and the mathematician and educator, Dr. Seymour Papert, the founder of LOGO programming and one of the world's foremost expert on instructional technologies. Laura developed the concept and curriculum for the YWCA's TechGYRLS program, a national program for girls ages 9 - 13 that is currently running in over 80 YWCA's across the country.

### Internship Opportunities:

#### **Ohmwork: Networking Homebrew Science: Social Media Intern**

Vision Education & Media was recently awarded a MacArthur Foundation Digital Media and Learning grant to develop an interactive homebrew science website for middle school students. Ohmwork is a social networking site that focuses on creative exploration, hands on learning and tinkering in the spirit of the D.I.Y. movement. Our goal is to create rich digital learning experiences through a series of video podcasts that are supported by blueprints, PDF instructions, and teacher resources for projects that cost \$35 and under. We hope to create a community of educators, students, parents, and D.I.Yers to challenge, grow and help one another.

We are looking for creative passionate interns with any of the following skills:

- Online marketing
- Web 2.0 skills
- Educational experience in Science, Physics, Technology, and Mechanics

## **GreenFab: Sustainable Design Through Engineering and Technology: After-School and Summer Enrichment Intern**

GreenFab, funded through the National Science Foundation is a in school and after school curriculum designed for first and second year High School students to help develop crucial analytical and creative skills in the fields of sustainability, life sciences, engineering and prototyping/design. Partnering with Sustainable South Bronx, ITP, MIT and Bronx Guild High School, students in the Hunt's Point community will be exposed to STEM fields as well as have access to the South Bronx Fablab, a work space equipped with computer assisted machinery to help develop and build projects that tackle local environmental issues.

We are looking for creative passionate interns with any of the following skills to assist with our after school and summer enrichment classes:

- Physical computing
- Networking
- Sustainable design
- Biology and Environmental Sciences
- Rapid cardboard prototyping
- Engineering
- Educational experience to help develop and implement this program.

Interns will assist with the creation and implementation of the GreenFab curriculum in the South Bronx, and will provide instructional support during the after-school and summer enrichment sessions with high school students.

For more information about Vision Education & Media or to apply for the above internships, please email a cover letter and resume to Adriana Pentz, Senior Director of Operations at [Adriana@vemny.org](mailto:Adriana@vemny.org)