

January 23, 2024

Perspectives of Stanford Students and Faculty with a Disability



ENGR110/210

Perspectives in Assistive Technology



Patty White



Sydney Barta



Sheri D. Sheppard



Bhavya Shah



Patty White



Patty White is a recent Stanford Distinguished Career Institute fellow and mother of a child with Down Syndrome. She and her husband Jim have four children. Their youngest daughter opened their world to include individuals with cognitive challenges and the many who support them, ultimately inspiring them to co-found the LuMind Foundation and initiate work around community housing solutions for adults with IDD (intellectual or developmental disabilities).



Raising a Daughter Who Has Down Syndrome

Coming Home with Amy



The Early Years

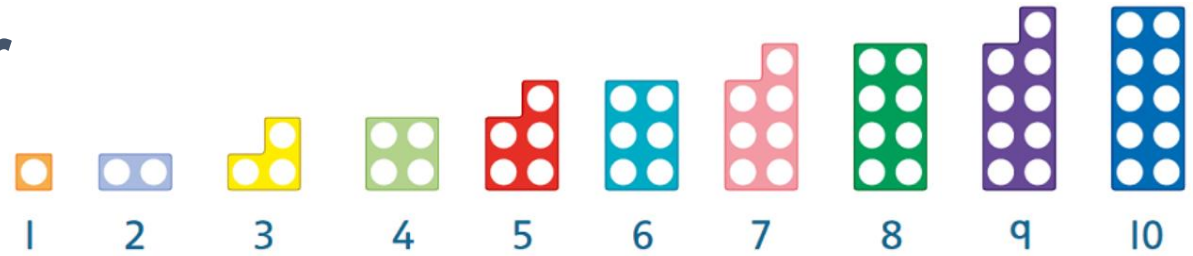
- Early intervention
 - Physical Therapy
 - Occupational Therapy
 - Speech Therapy
 - Social Skills
- Assistive technology
 - High chair
 - Glasses
 - Everyday objects
 - Velcro / Snaps



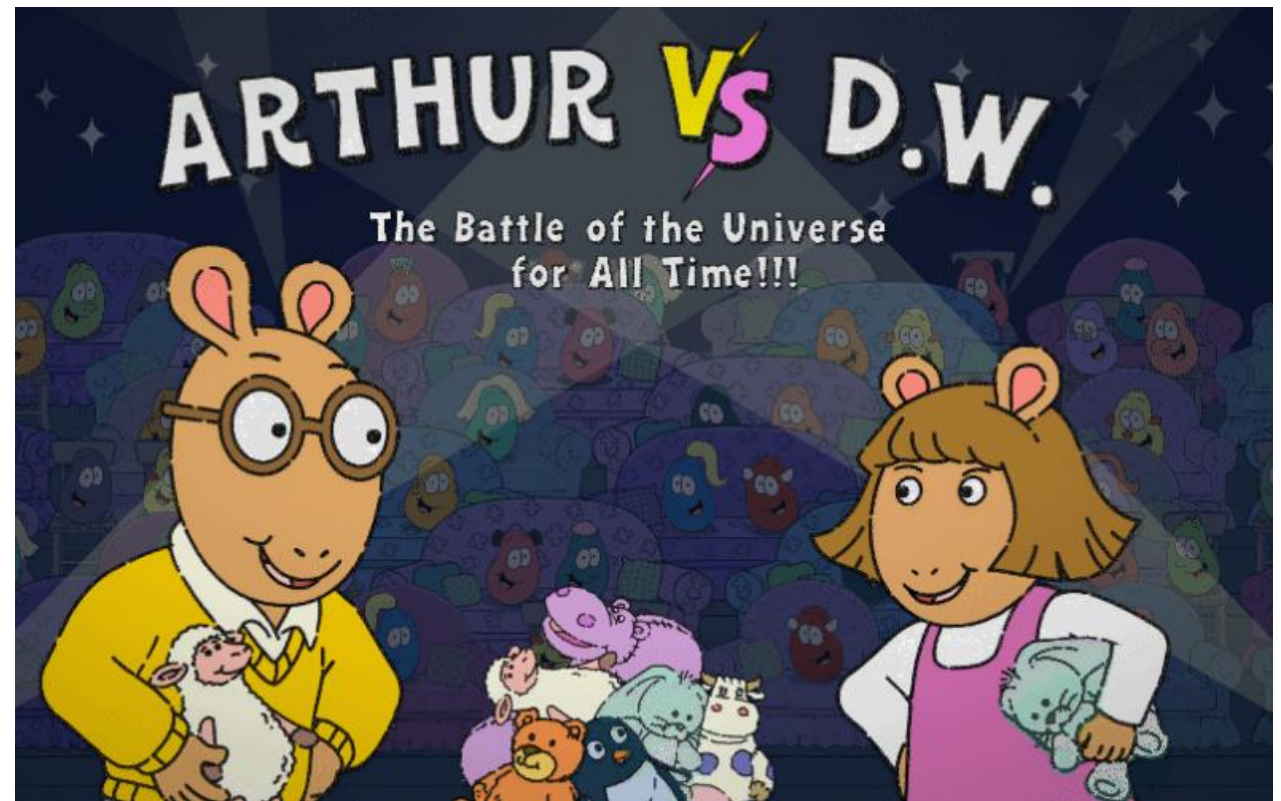
Amy as a Stanford Student - In the Two's Program at Bing Nursery School



Assistive Technology for Learning



Unintentional Assistive Technology







Frequently Used Assistive Technology

- iPhone
- Siri
- Google
- YouTube
- Uber / Lyft

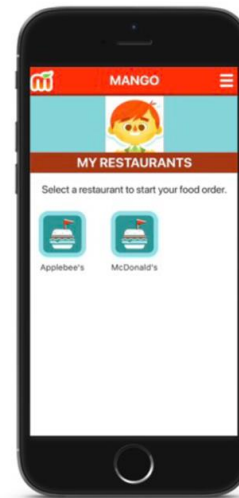
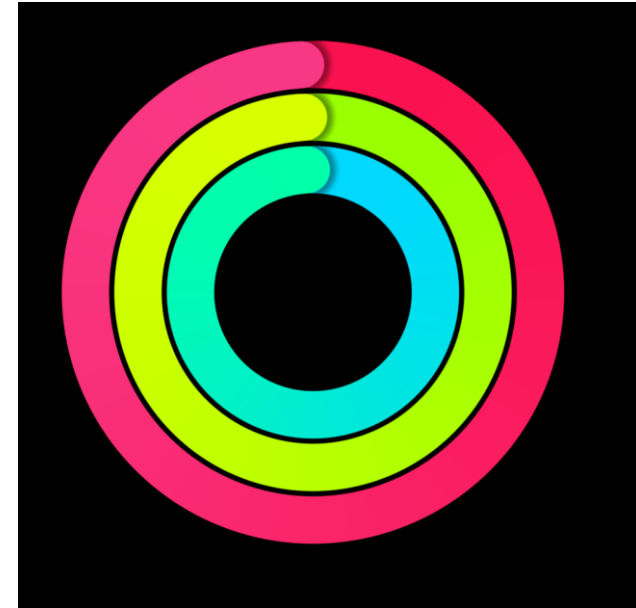


**But, useful
technologies
can have a
dark side...**

HOW TO FIX ANY CRACKED CELLPHONE SCREEN FAST AND EASY!*



Health-related Assistive Technologies



Eating at restaurants can be healthy.

But sometimes ordering food that tastes good and is good for your body is hard—for everyone.

The MANGO Nutrition app helps you plan a healthy meal at your favorite restaurant. Just show the server your meal choices on your iPhone. And order. All by yourself.

Questions?



Work with Diligence

- Time is your team's most precious resource
- 6 weeks of class left to work on your projects
- Mid-term presentations in 3 weeks!



Class Length

- Class ends at 5:50pm
- Instructor & Guest Lecturers available after class
- Classroom open after class for team meetings and meetings with Instructor



Students working on a Team Project



- Meet with team members
- Decide on a cool team name
- Connect with your project suggestor
- Understand the problem with your project suggestor
- Search the web for information on the user group, disability condition, existing products / solutions
- Schedule weekly updates alternating between in-person meetings and emailed progress reports with photos
- **Sign up for PRL Safety Orientation**
- Do not hesitate to ask questions



Students working on an Individual Project



- Decide on a topic - to be approved
 - Assume the identity of an Investigative Reporter
- Schedule weekly updates alternating between in-person meetings and emailed progress reports with photos
- Do not hesitate to ask questions



Students not working on a project

- Attend and reflect on class sessions
- Do not hesitate to ask questions



Age-related Disabilities

What you **missed** because you were “Born Too Late”

- Music: Elvis, Beatles, Rolling Stones, Motown, Classic Rock
- Media: Vinyl records, 8-Tracks, Cassettes
- People: JFK, MLK (“I have a dream”)
- Events: Woodstock, The Summer of Love, Moon Landing
- Sports: “The Catch”
- Introduction of Transistor Radios, Color TVs, TouchTone Telephones, Personal Computers



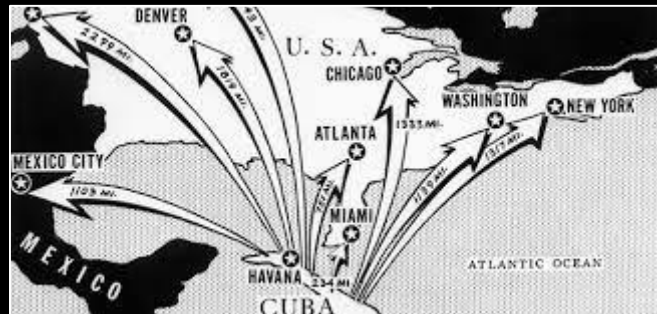
**BORN
TOO
LATE**



Age-related Disabilities

What you **avoided** because you were “Born Too Late”

- War in Vietnam
- The draft
- Political unrest
- Nixon
- The Cuban Missile Crisis
- Disco



Attendance Sheet, Evaluation Form, and Meet with Dave Signup



For all students:

- Sign Attendance Sheet - important to verify your attendance
- Sign up to meet with Dave (Zoom or in-person) for lecture makeup and project update discussions



For everyone:

- Fill out Class Session Evaluation Form - this provides feedback to guest lecturer



Project Purchases



- **PRL** - Account created for ENGR110/210 students working on Team Projects
- **Online** - Brittany will order for you (Amazon), pick up at Front Desk with Loran
- **Reimbursement** - Save receipts



Titanium



What part of an iPhone is made from titanium?

Entire case, back, band, a brick off titanium

Just the band - 1mm of titanium cladding aluminum

Titanium
iPhone 15 Pro



Titanium



What is the function of the titanium part?

“Hardness”, protect internal parts, stability, rigidity, lightweight, heat transfer, durability, impact resistance, damage prevention

Clout, aesthetics, marketing, illusion of innovation

Reduces fingerprints, marketing & advertising

iPhone 15 Pro

Titanium



Social Model - Help the Able Bodied



[Play video](#)

Thursday, January 25th - by Zoom



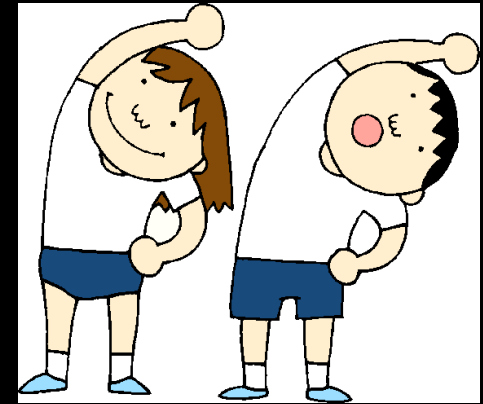
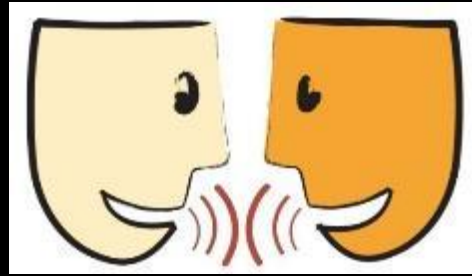
Exoskeletons in Rehabilitation and Industry

Joanna Weakley, MS, PT

Ekso Bionics - Clinical Experience Manager

Break Activities

- Attendance sheet
- Stand up and stretch
- Take a bio-break
- Text message
- Web-surf
- Respond to email
- Talk with classmates
- Reflect on what was presented in class





SOCIAL
MEDIA
BREAK



Today

Perspectives of Stanford Students and Faculty with a Disability



Patty White



Sydney Barta



Sheri D. Sheppard



Bhavya Shah



Sydney Barta



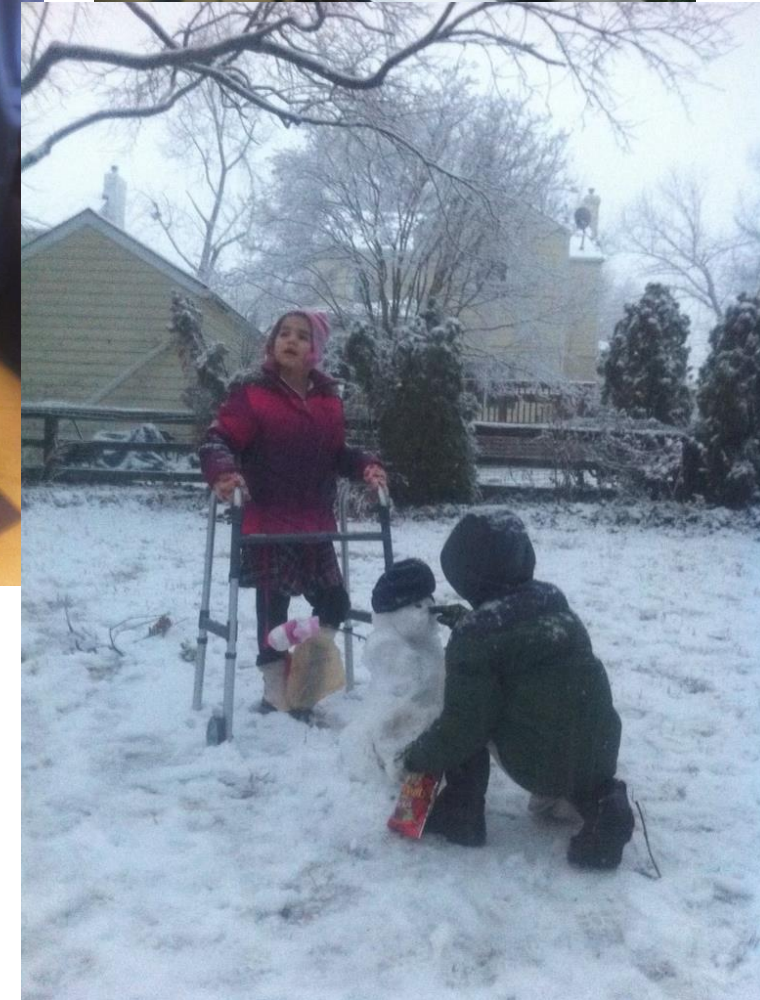
Sydney Barta is a sophomore studying bioengineering and an amputee since 6. She is a Pi Beta Phi, Stanford Counterpoint, and HPL member, the Director of Disability Advocacy for Stanford ASSU, a CME tutor, and a Team USA Paralympian and National Team member. Sydney recently won the 2023 Parapan American Games and set the Games Record for the women's 200m t64. She is one of four women with a blade to ever run sub 27 for 200m and is the 200m National Champion and Americas Record Holder. She is currently training for Paris 2024 Paralympics this summer.

Sydney + Disability

Sydney 🤗 🤗 🤗 ❤️ ❤️ 🗳️ 🗳️ 🗳️

Villain Origin Story

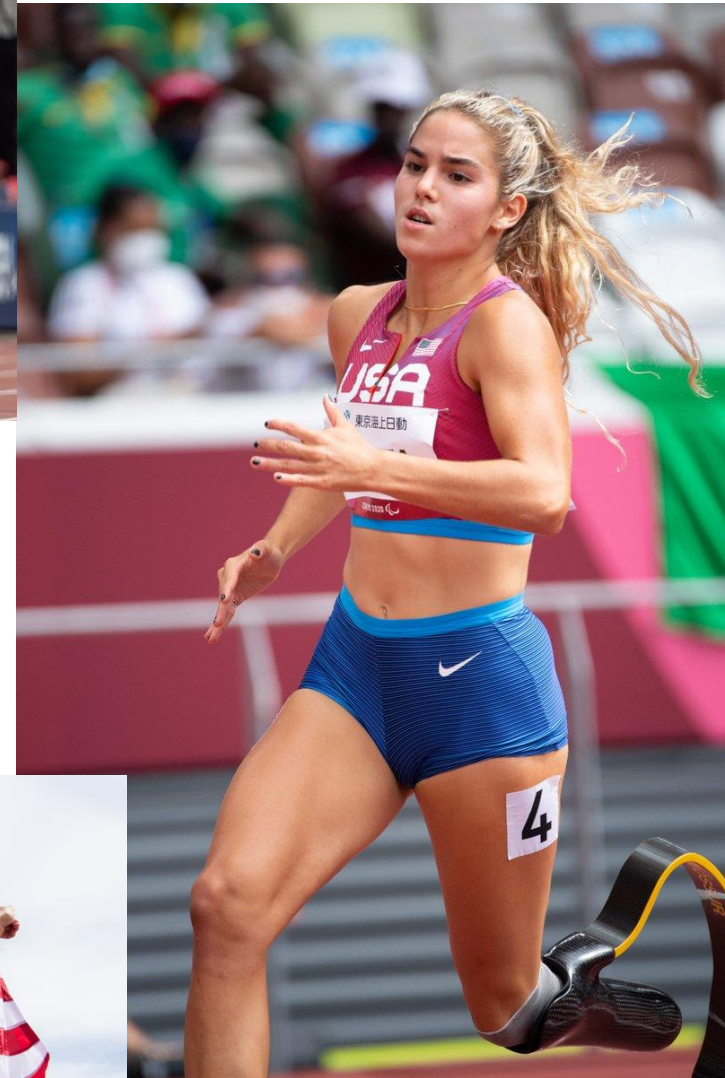
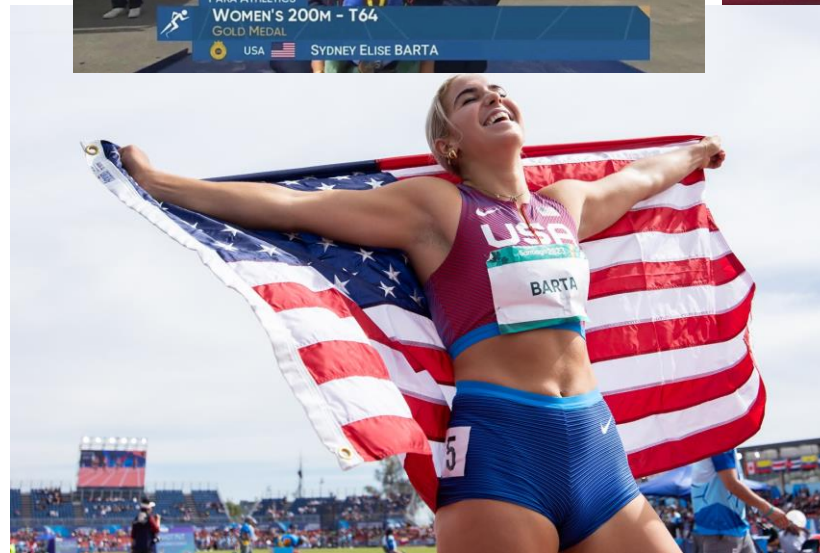
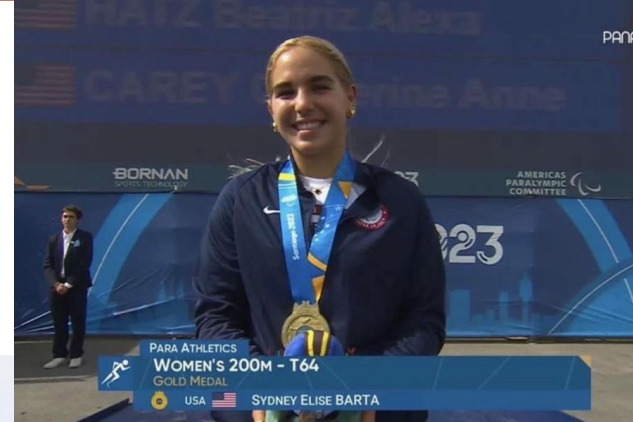
- Comminuted fracture
- Compartment syndrome
- Septic
- Serial Amputations



What I Have Done

Like every sport
Paralympic Stuff

- National Team x5 years
- Americas Record Holder 200m t64
- X2 Para Pan American Champion 200m t64
- Para Pan American 100m Silver Medalist t64
- U17 400m, 200m, 100m t64 Champion



More



Challenges

- Inclusion:
 - Rec sports → Stanford
- Equipment



Collegiate Partnerships: Collegiate Partnerships Collegiate Advisory Council Think Tank Thought Leadership

Media Center | 2/16/2023 6:15:00 PM

USOPC/NCAA PARA-COLLEGE INCLUSION PROJECT

U.S. Olympic & Paralympic Committee and NCAA Office of Inclusion announce first-of-its-kind Paralympic sport advancements across three sports

The USOPC/NCAA Para-College Inclusion Project launched in 2021 to engage schools offering adaptive sport to collectively increase Paralympic sport understanding, awareness and connection across the collegiate landscape. This work evolved into an awareness subcommittee and three sport tactical teams: wheelchair basketball, wheelchair tennis, and Para track and field. Each of these teams identified a need to strengthen the college development infrastructure through shared resources. Formed



Challenges p2

"The collegiate landscape is critically important to the current and future health of Olympic and Paralympic sport, and we're thrilled to welcome Bernard Muir as chair and new member Jamie Pollard to our Collegiate Advisory Council to help us advance this work," said USOPC CEO Sarah Hirshland. "From launching the USOPC Collegiate Think Tank, to working with the NCAA to update legislation, to supporting athletes competing in both systems, the council has already accomplished a great deal since its inception – and we are focused on continuing our efforts in support of Team USA student-athletes."

With the Olympic and Paralympic Games Paris 2024 on the horizon, the CAC will continue carrying out its mission of strengthening and leading collaborative efforts to align our country's unique collegiate athletic landscape and the Olympic and Paralympic movements to support Team USA's collegiate athletes.

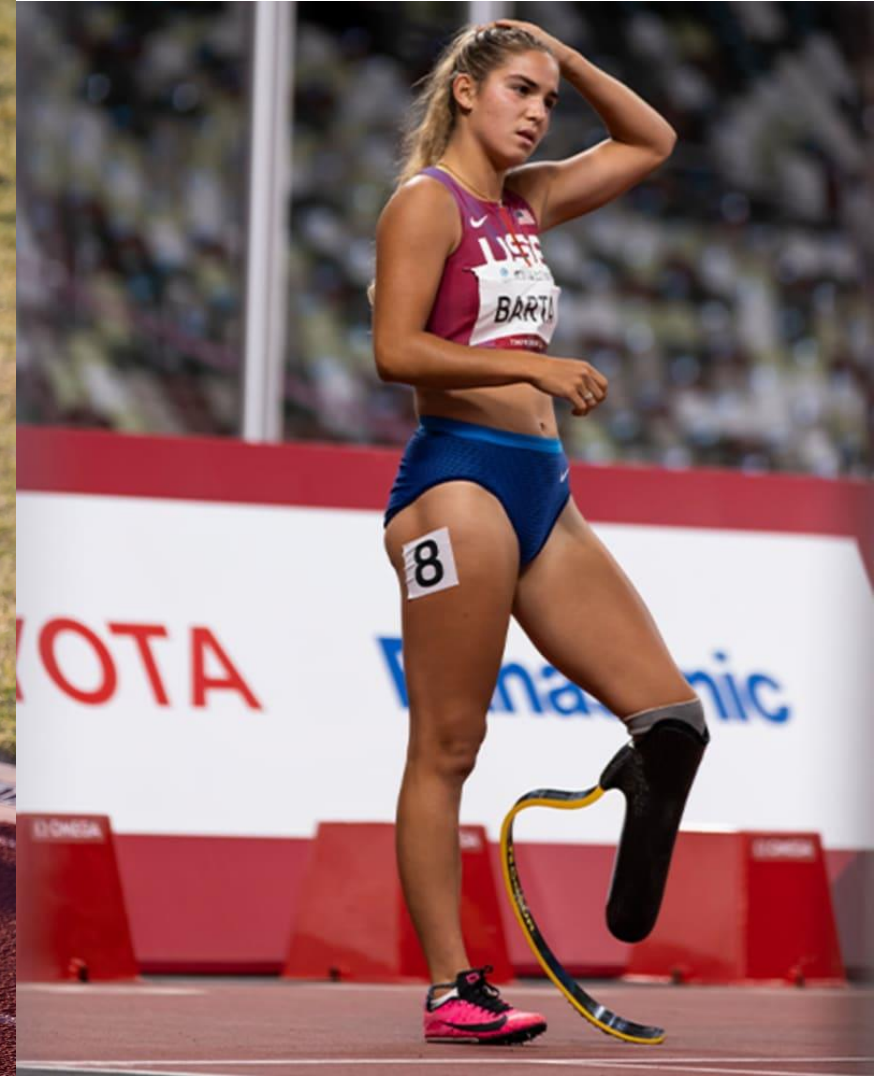
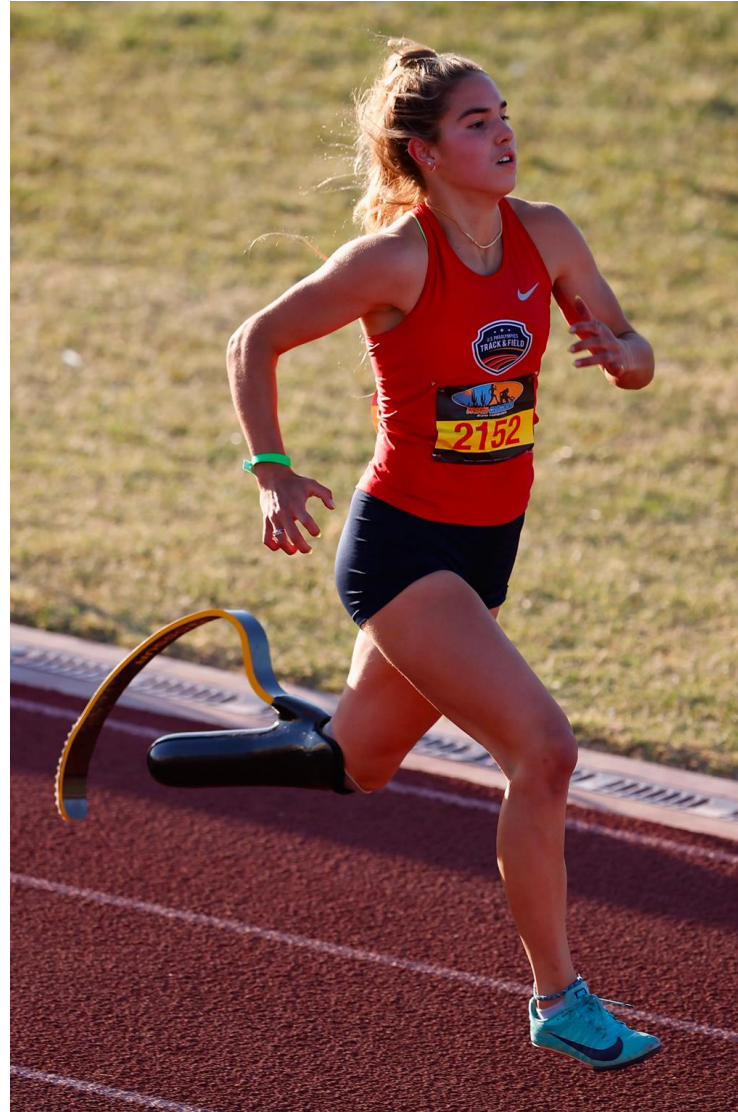
The 12-member council is comprised of:

- ★ Bernard Muir (Stanford University/USOPC CAC chair)



Technologies

- My walking leg
- My sprinting legs
- (swimming / beach leg)
- accommodations



Technologies

AllPro with Posterior Mount

The AllPro foot from Fillauer crosses all boundaries, combining high flexibility and dynamic performance into a foot that allows the user to work and play like a pro. Whether walking on a flat surface or traversing steep hills, the AllPro performs to meet the amputee's multiaxial needs. If exercise or sports are on the activity list, this "do-it-all" foot easily transitions from the gym to the tennis and basketball courts, as well as the soccer, football, and lacrosse fields.



Cheetah Xcel is the next generation sprinting foot from Össur that is specifically designed for explosive short-distance sprints. The Cheetah's curve compresses at impact, storing energy and absorbing high levels of stress that would otherwise be absorbed by the athlete's knee, hip and lower back. The carbon blade features a more extreme curve and the dynamic shape allows for the foot to flex and give a powerful energy kick. A long toe provides better ground contact, while the plantar-flexed pylon handles forward progression. The Cheetah Xcel is an estimated one-third as powerful as a native ankle, returning approximately 90 -95% of its energy when the athlete is running.

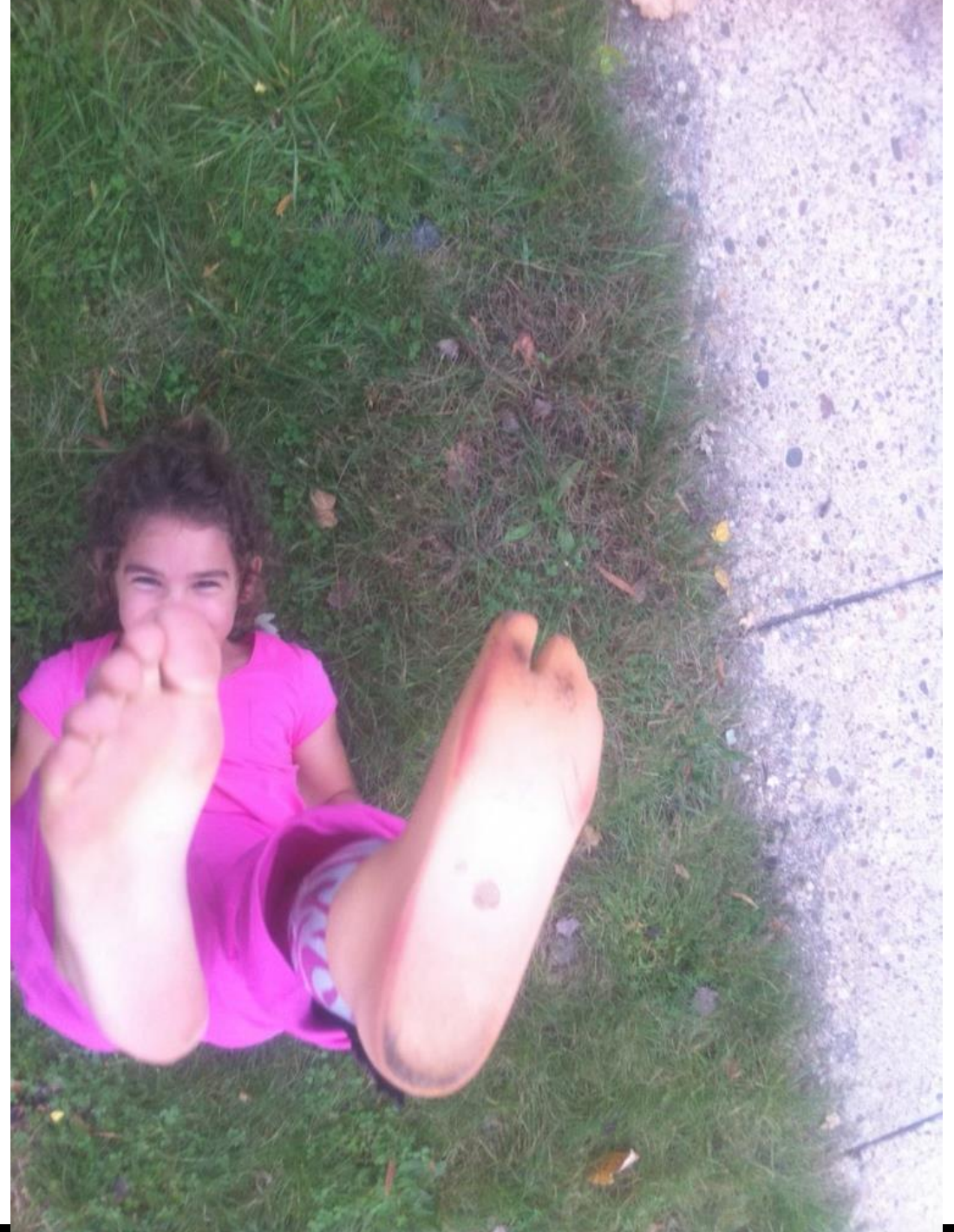
Career Goals

- Medical School
- Paris 2024?



THANK YOU

QUESTIONS?





Sheri D. Sheppard



Sheri Sheppard taught both undergraduate and graduate design-related classes and conducted research on fracture mechanics and applied finite element analysis, and on how people become engineers. She is the longtime faculty founder of and adviser to the graduate student group MEwomen.



Bavya Shah

Bhavya Ashush Shah is a Junior studying Mathematical and Computational Science with interests in education, disability studies, and oral communication. He is an active member of Stanford's Debate Society and Ethics Bowl teams. Outside of academics, he enjoys watching Indian standup comedy, having meaningful conversations, and eating spicy food.



That's all Folks!

