2015 Pediatric Research Conference
June 22, 2015

Emory Conference Center and Hotel


Children's
Healthcare of Atlanta
100th ANNIVERSARY


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Egleston Children's
Share Your Story: choa.org/100years
This display represents a snapshot of our 100-year history. Visit our website to learn more about the stories, moments and milestones that make up our journey.
"Every child we help has the potential to make a difference in our future, to be a hero to the next generation. We have the opportunity to make a difference all around the world, to give a future to those less fortunate and make dreams come true to those who have never thought it possible."
The story of Children's Healthcare of Atlanta began in 1913, with 20 hospital beds in two small cottages in Decatur. A century of chapters later, Children's has evolved to three hospitals, 24 neighborhood locations, 60 pediatric specialties and programs, 850,000 patient visits annually, and recognition as one of the top pediatric health care institutions in the country.
Our story is one of hope and will. The hope for a better future for children and the will to make it happen.


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MEDICAL BREAKTHROUGHS
RESEARCH AND TEACHING


A-F
Georgia Institute of Technology


RESTROOMS


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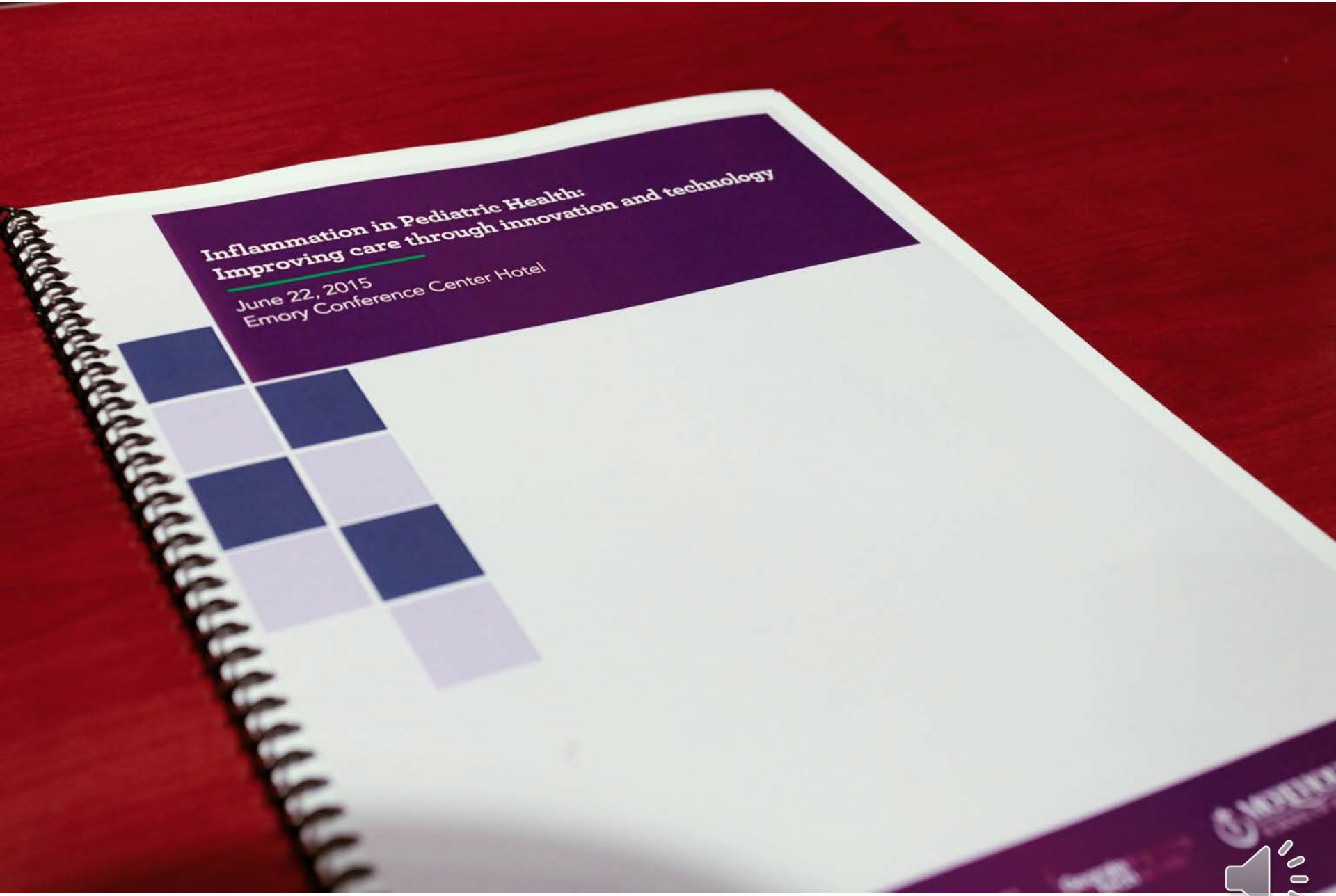
Inflammation in Pediatric Health:
Improving care through innovation and technology
June 22, 2015
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Children's
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100TH ANNIVERSARY
RESEARCH
AND TEACHING

Children's Healthcare of Atlanta
Dedicated to All Better

Center for Clinical Outcomes Research and Public Health

Paul Spearman, M.D., Acting Center Director

EMORY

ABOUT CORPH

The CORPH centralizes and coordinates outcomes and epidemiologic research throughout the child healthcare system, emphasizing strong ties to the Rollins School of Public Health at Emory University and to the Centers for Disease Control and Prevention. The Center synergizes with Children's Healthcare of Atlanta's plans for new wellness initiatives impacting the health of Georgia's children. Researchers in this center focus on identifying new methods to measure and improve pediatric healthcare outcomes. Emphasis is placed upon evaluating comparative effectiveness in a variety of clinical areas including birth and neonatal outcomes, neurodevelopmental outcomes and transition of care from the teenage years into adulthood for those populations who suffer from chronic illnesses. Important current focus areas include asthma, cardiac, surgical, neonatal outcomes and on wellness including health promotion and obesity prevention.

EPIC AND DATA WAREHOUSE REQUESTS

Thinking about CORPH related research, we are here to help!

For all your data needs, we have simplified the process of requesting data.

- If you are a CHOA faculty, there are three ways you can contact us:
  - Just send us an e-mail to: data@choa.org, *especially if you are a non-CHOA faculty.*
  - If you are a CHOA faculty and your data needs are 'Routine' (please see below for what is 'Routine' request) you can access and fill out the Report request form, after logging into CareForce.

    Routine Requests and Report Portal

    Path: Careforce> Departments> Outcomes Center> Report Requests

    URL: http://apps/reportrequests/Pages/Home.aspx

    "Routine Requests" will be answered within 24 hours!

    "Routine Requests" must meet the following criteria:
    - Data exists and is available
    - Data has been validated
    - Report exists but needs modification
    - Break fix
    - Work effort is equal or less than 24 hours
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- If you are a CHOA faculty and if your request is for a more complicated data set (e.g. multiple data sources), or you require Outcome Center or BI resources such as REDCap form development and data collection, statistical or economic analysis support, or data abstraction / data entry, you can access and fill out the 'Care Transformation Prioritization Request' form, after logging into CareForce.

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DATA REQUEST WORKFLOW

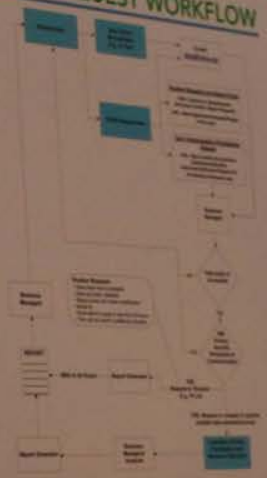

Figure 1: Epic and Data Warehouse Data Request, Reporting and Management

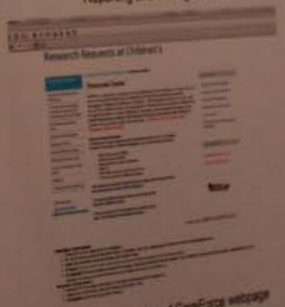

Figure 2: Screen shot of CareForce webpage

USEFUL CONTACTS

For more information about CORPH:
Paul Spearman, MD
Acting Center Director

Karen Kennedy, PhD


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Research and Public Health
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epilepsy


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NEUROPHYSIOLOGY CORE
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STRATEGIES
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NEW RECRUITS


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Pediatric Research Center


Pediatric HIV cure: a rhesus macaque model
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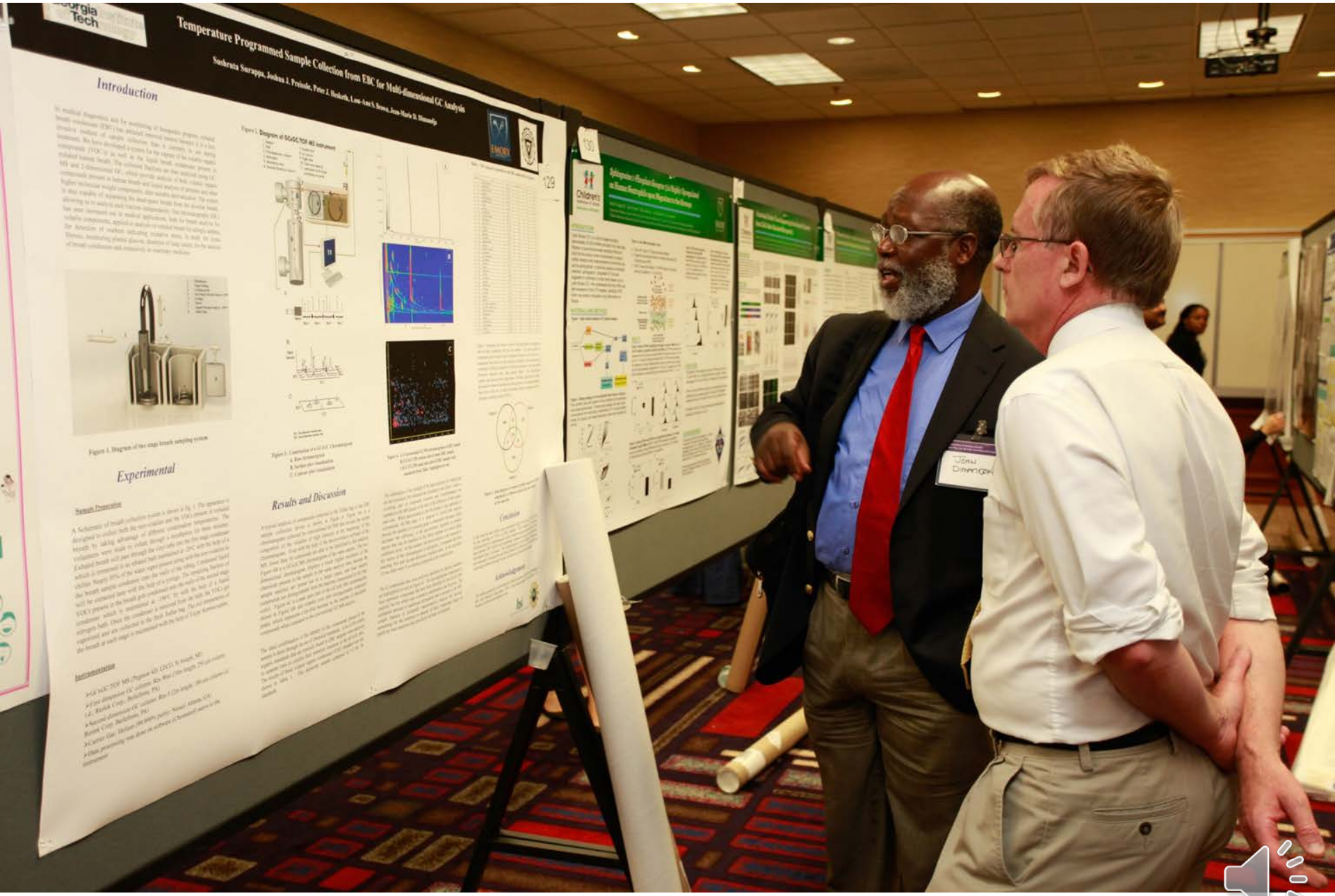
Temperature Programmed Sample Collection from EBC for Multi-dimensional GC Analysis
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The Role of Stress Echocardiography in a Large Pediatric Cardiology Program: A Programmatic Perspective
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KIDS Georgia
Kids and Families Impacting Disease through Science
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Junior Board: Hampton Woods, Jake Heygood, Abbey Kochman
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Experience using hospital services
Chronic medical conditions and/or take medication regularly
Interest in medicine and/or research
Current KIDS Georgia Chapter:
>50 active members + their families
60% with medical condition
40% healthy with interest in medicine/research/science
Membership requires attendance to 60% of chapter meetings. 80% if on executive board
OBJECTIVES
Learn, teach and advocate for medicine, research and innovation that improves the health and well-being of children
Engage in the process through projects and consultation activities with hospitals, researchers, and other partners in the public and private sectors
Provide input on research ideas, innovative solutions, unmet pediatric needs and priorities
Contribute to the design and implementation of clinical studies for children
Serve as a critical voice for children and families in the medical, research and innovation process
Kids using their voice to advance medicine
KiDS Georgia
iCAN
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Pediatric input on research projects during any stage of development by our KIDS Georgia panel
Feedback request can be pushed out to other KIDS chapters and iCAN network
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iCAN: www.icanresearch.org
Email: KidsGeorgia@icanresearch.org


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Innovation in Pediatric Health:
Improving care through innovation and technology


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2015 Pediatric Research Conference
Poster Award
1st Place
2015 Pediatric Research Conference
1st Place
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2013 Pediatric
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2015 Pediatric Research Conference
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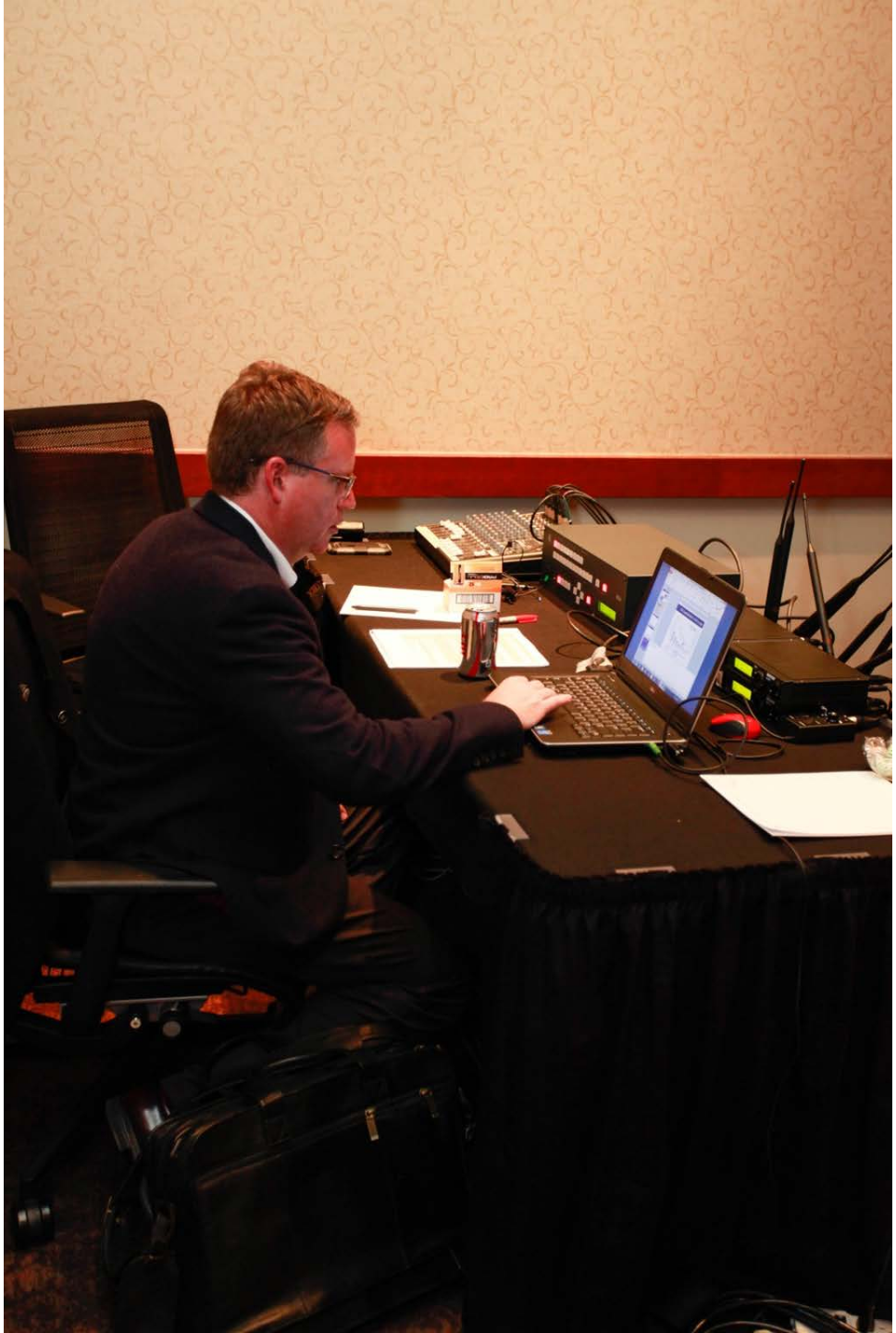

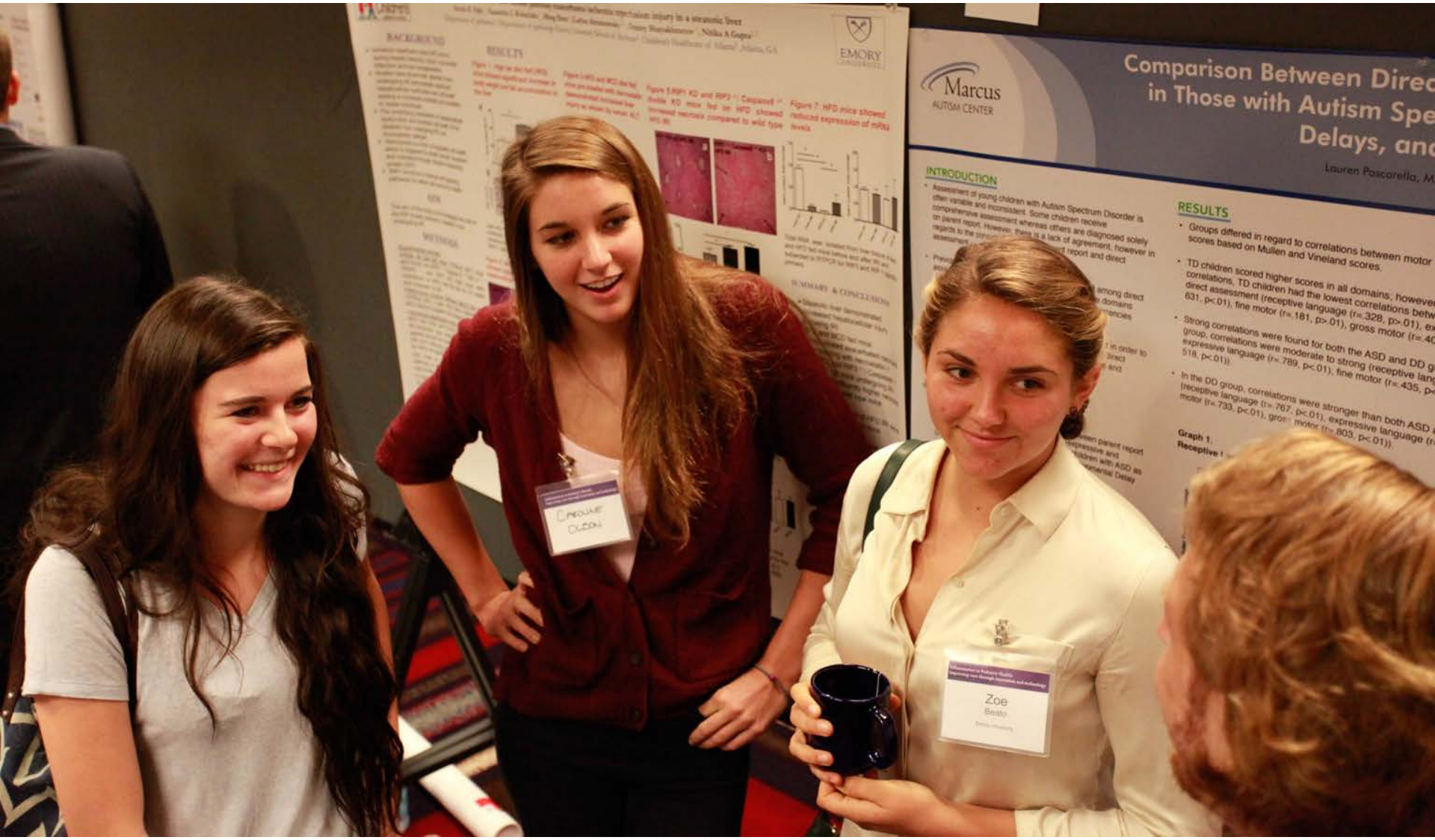
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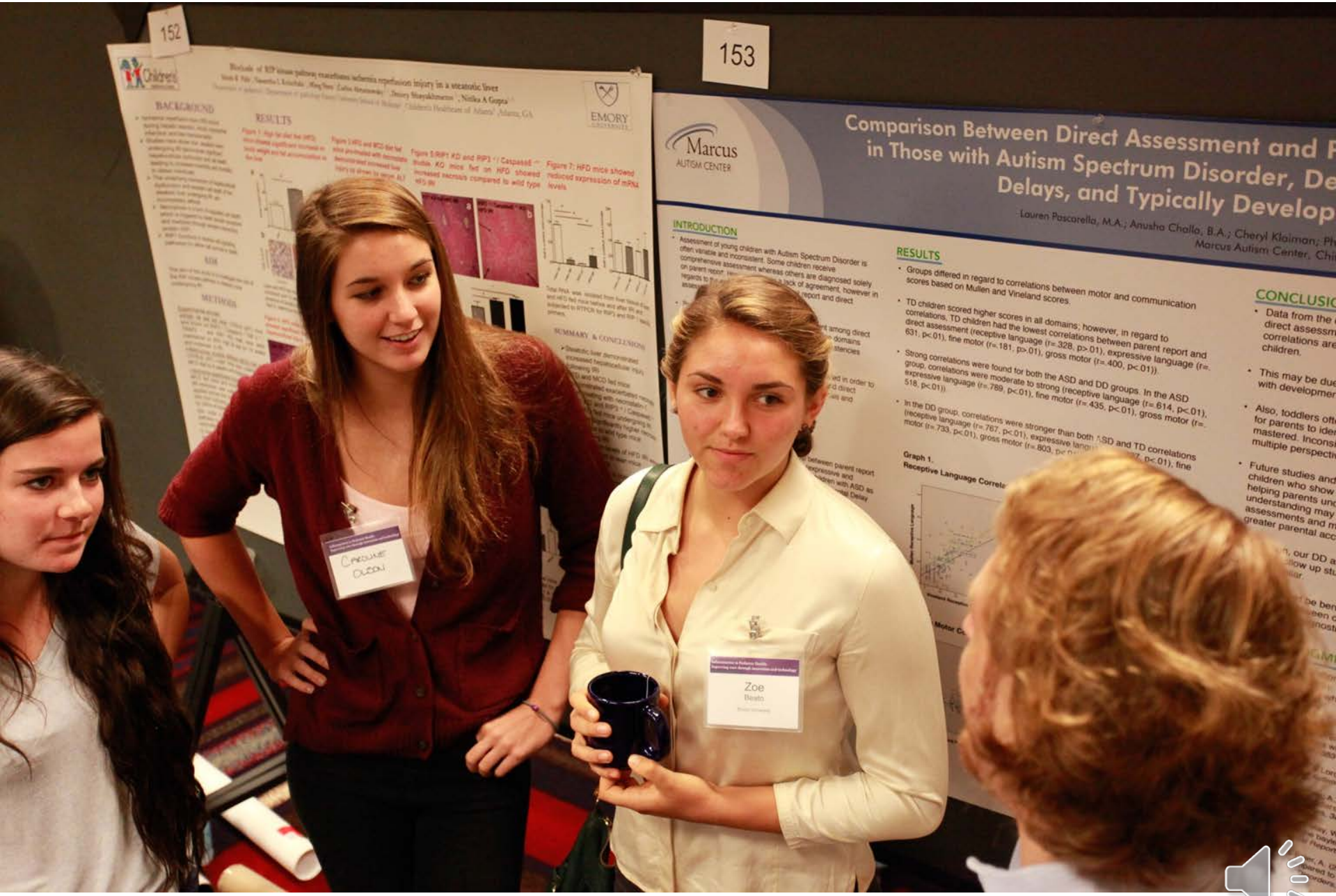
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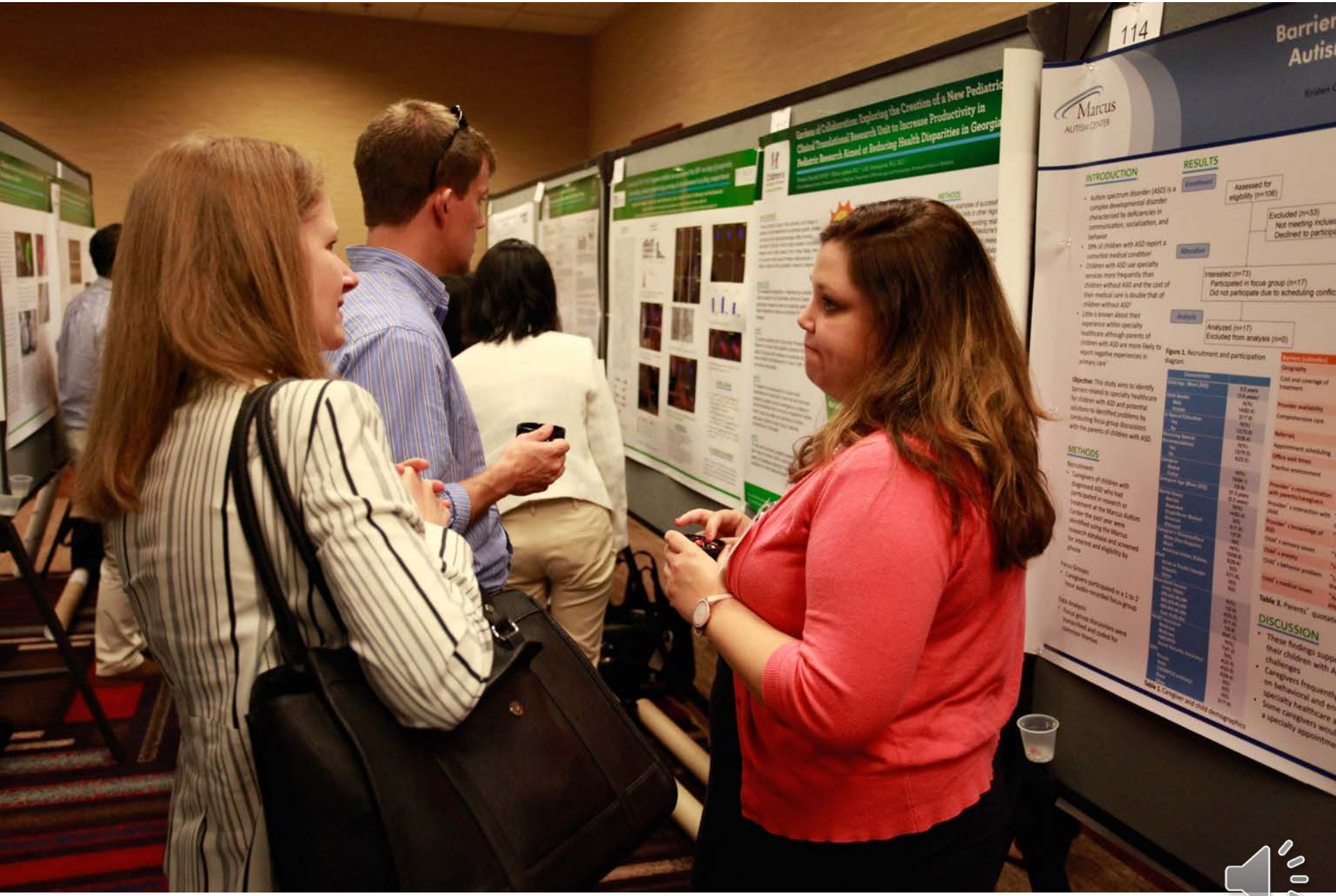
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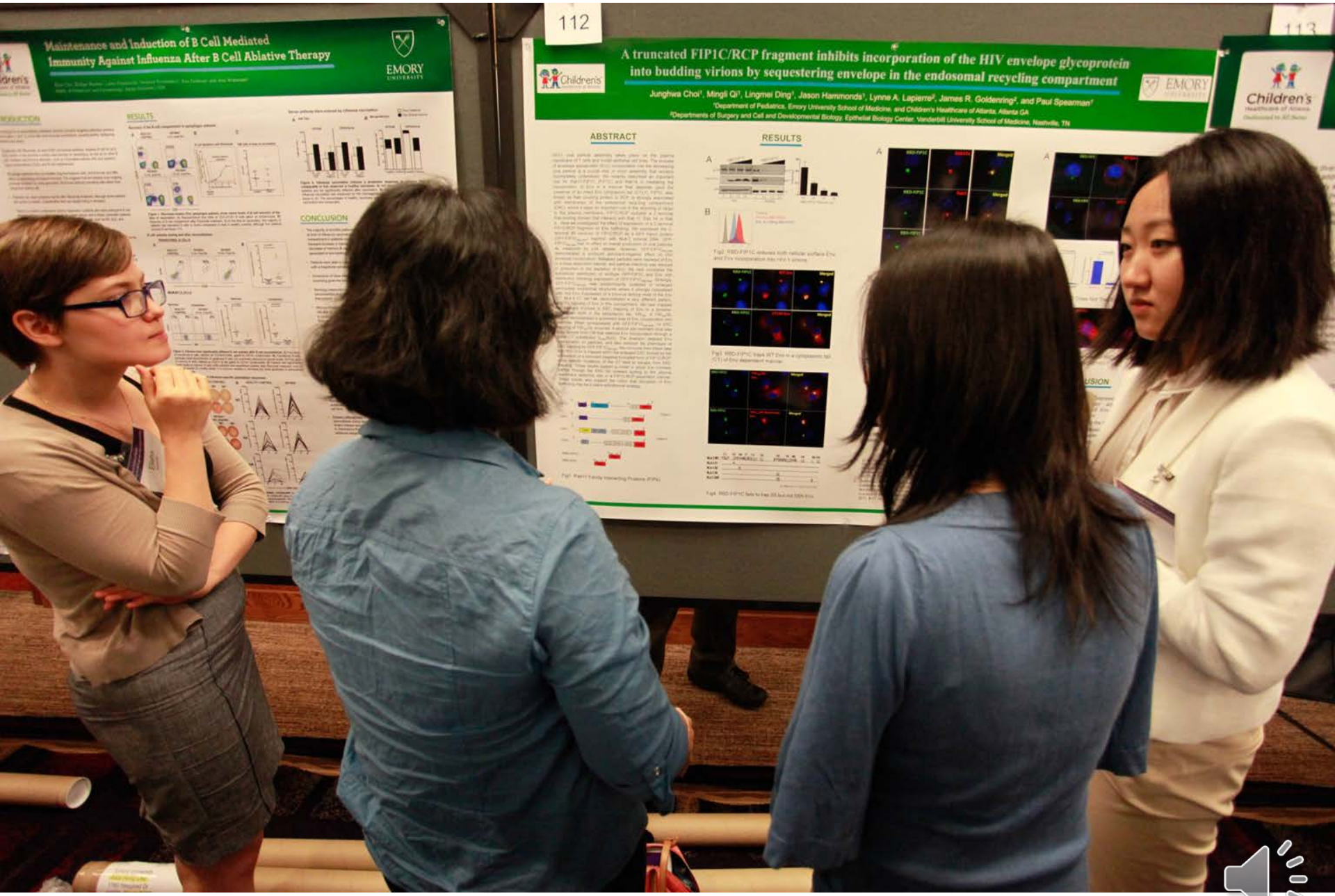
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Maintenance and Induction of B Cell Mediated Immunity Against Influenza After B Cell Ablative Therapy
EMORY UNIVERSITY
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A truncated FIP1C/RCP fragment inhibits incorporation of the HIV envelope glycoprotein into budding virions by sequestering envelope in the endosomal recycling compartment
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[1]Department of Pediatrics, Emory University School of Medicine, and Children's Healthcare of Atlanta, Atlanta GA
[2]Departments of Surgery and Cell and Developmental Biology, Epithelial Biology Center, Vanderbilt University School of Medicine, Nashville, TN
ABSTRACT
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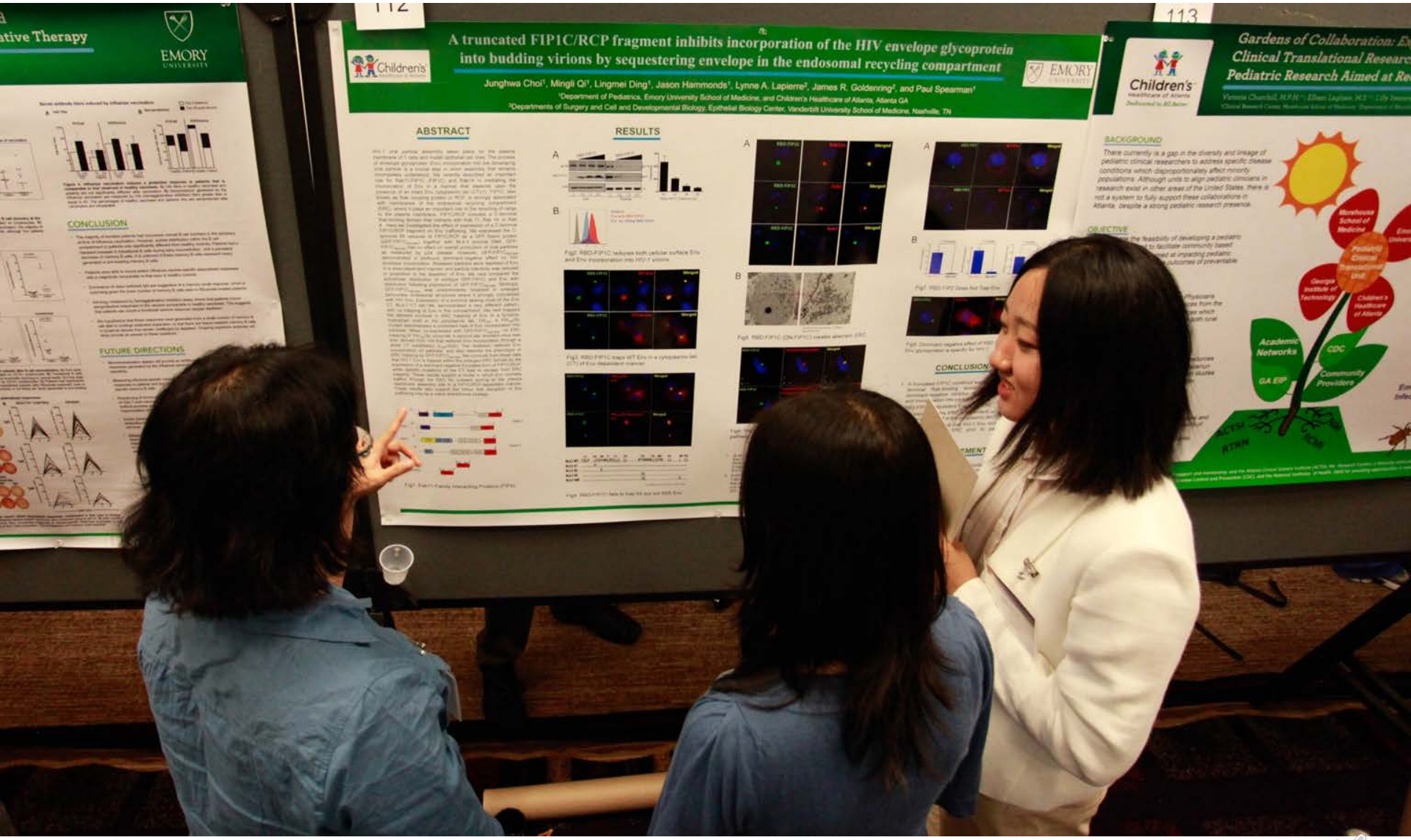
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Pediatric Clinical Translational Unit
Georgia Institute of Technology
Children's Healthcare of Atlanta
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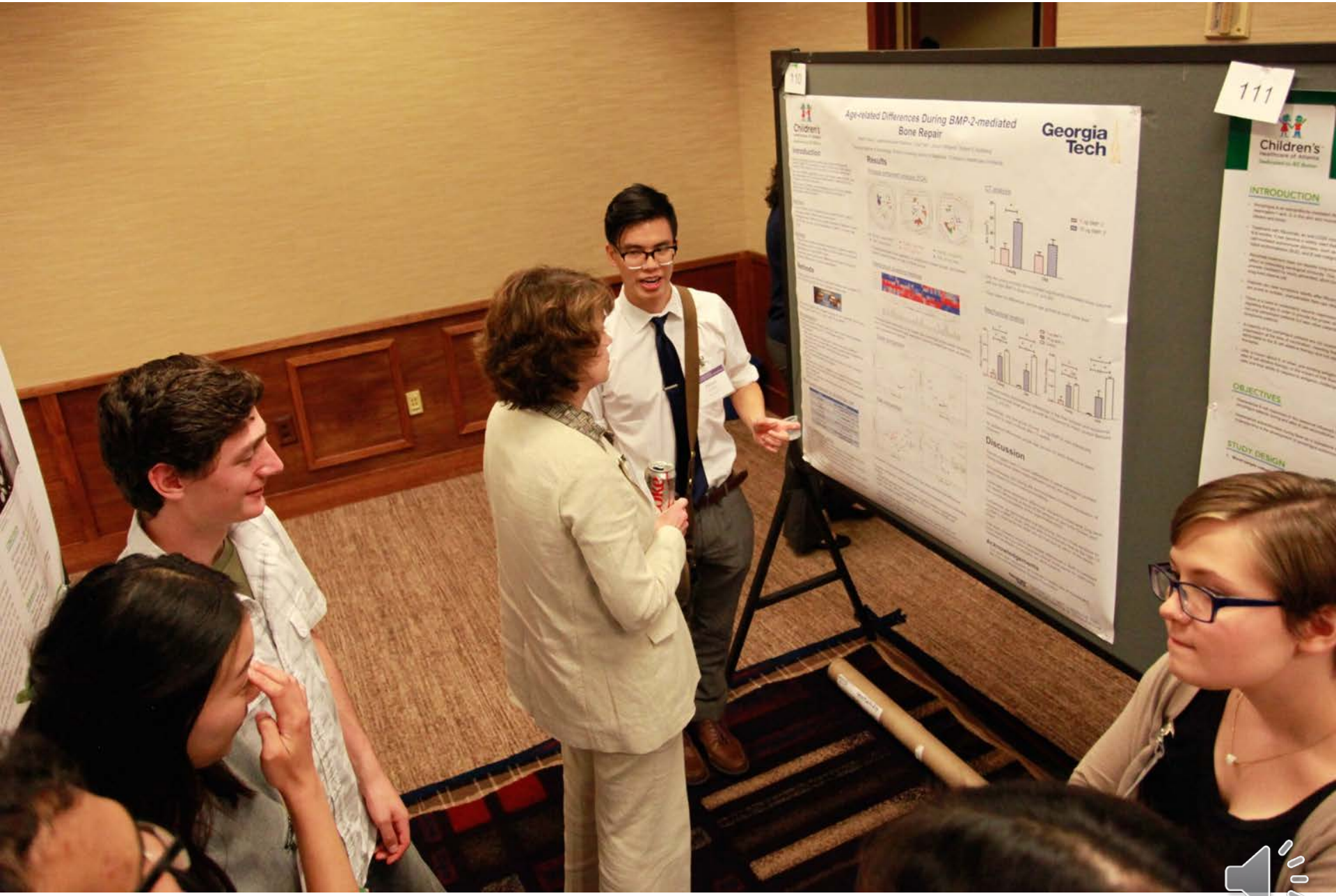
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Age-related Differences During BMP-2-mediated Bone Repair
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Helps fulfill patient-centered outcome requirements many grant applications now request
HOW TO ACCESS
KIDS Georgia: www.kidsgeorgia.org
iCAN: www.icanresearch.org
Email: KidsGeorgia@icanresearch.org
KiDS


Brush Up


d by the
Medicine
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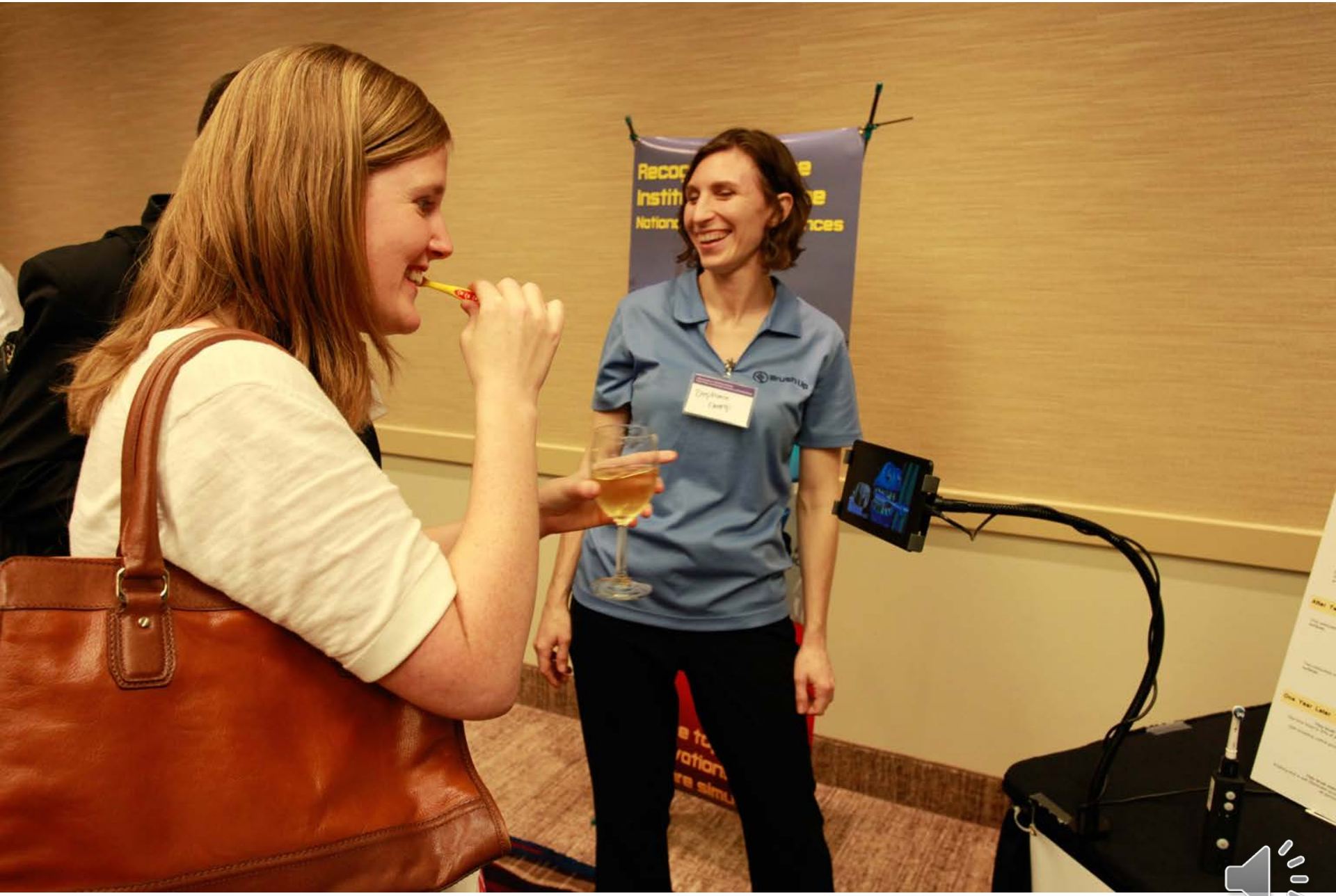
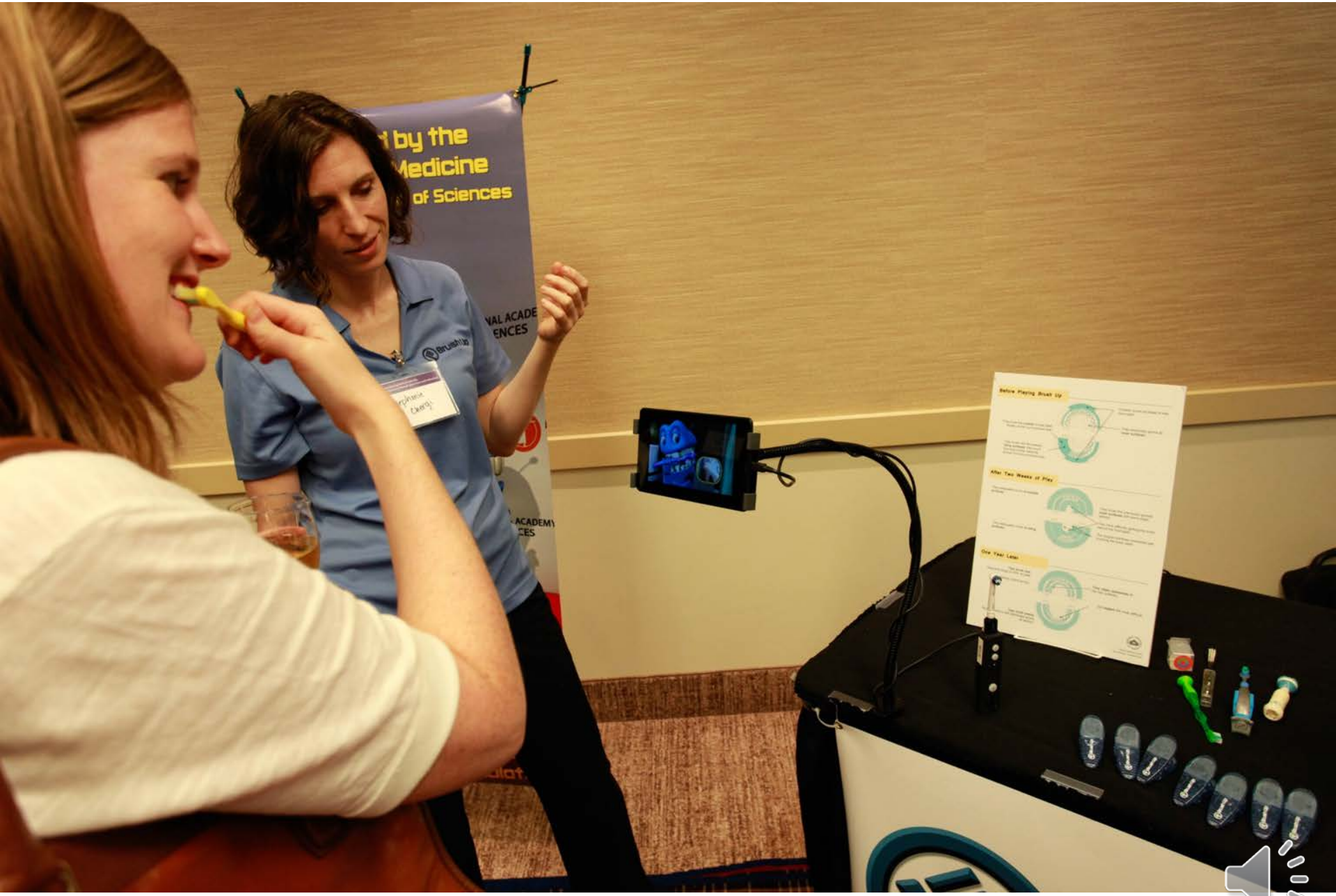
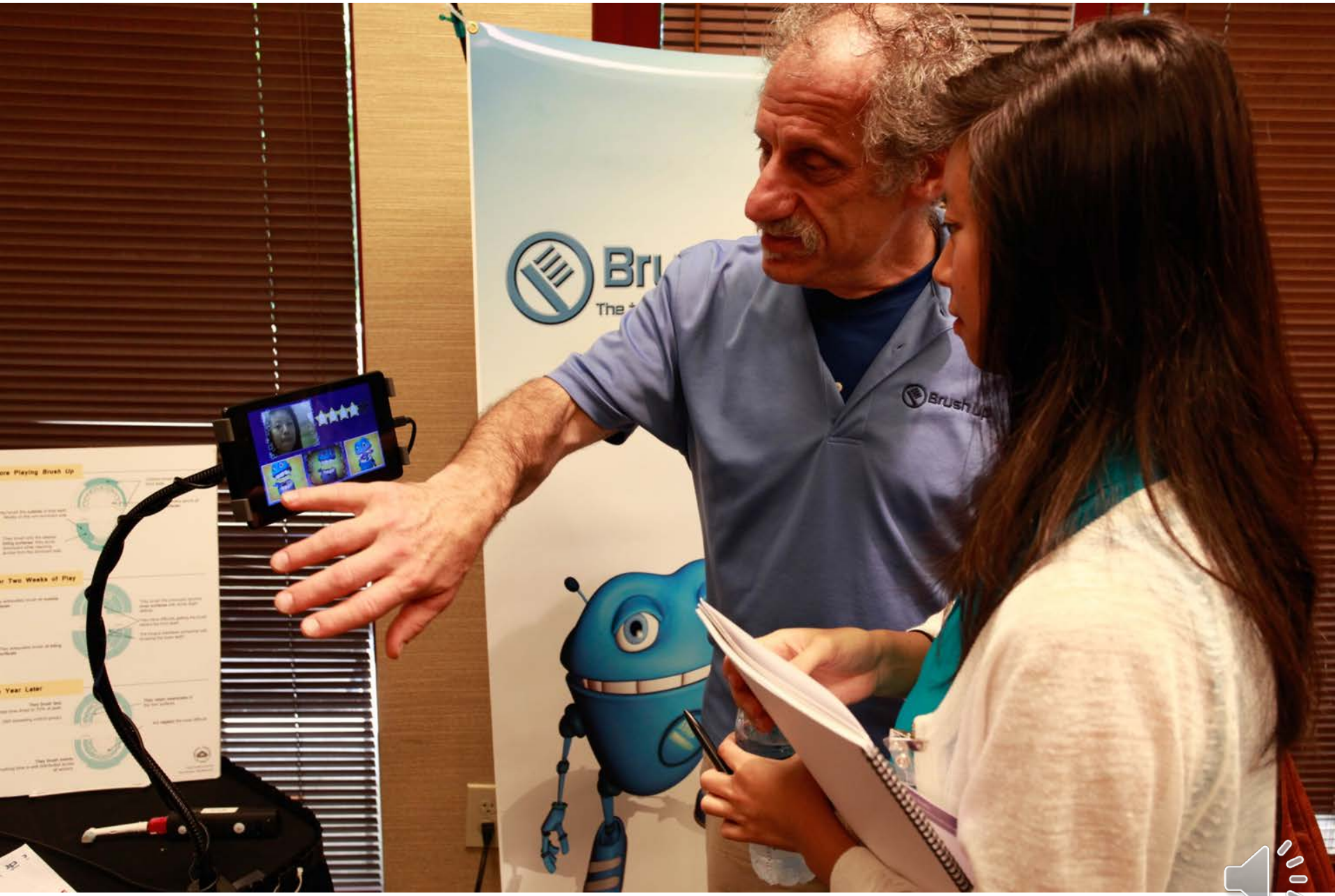



Brush Up

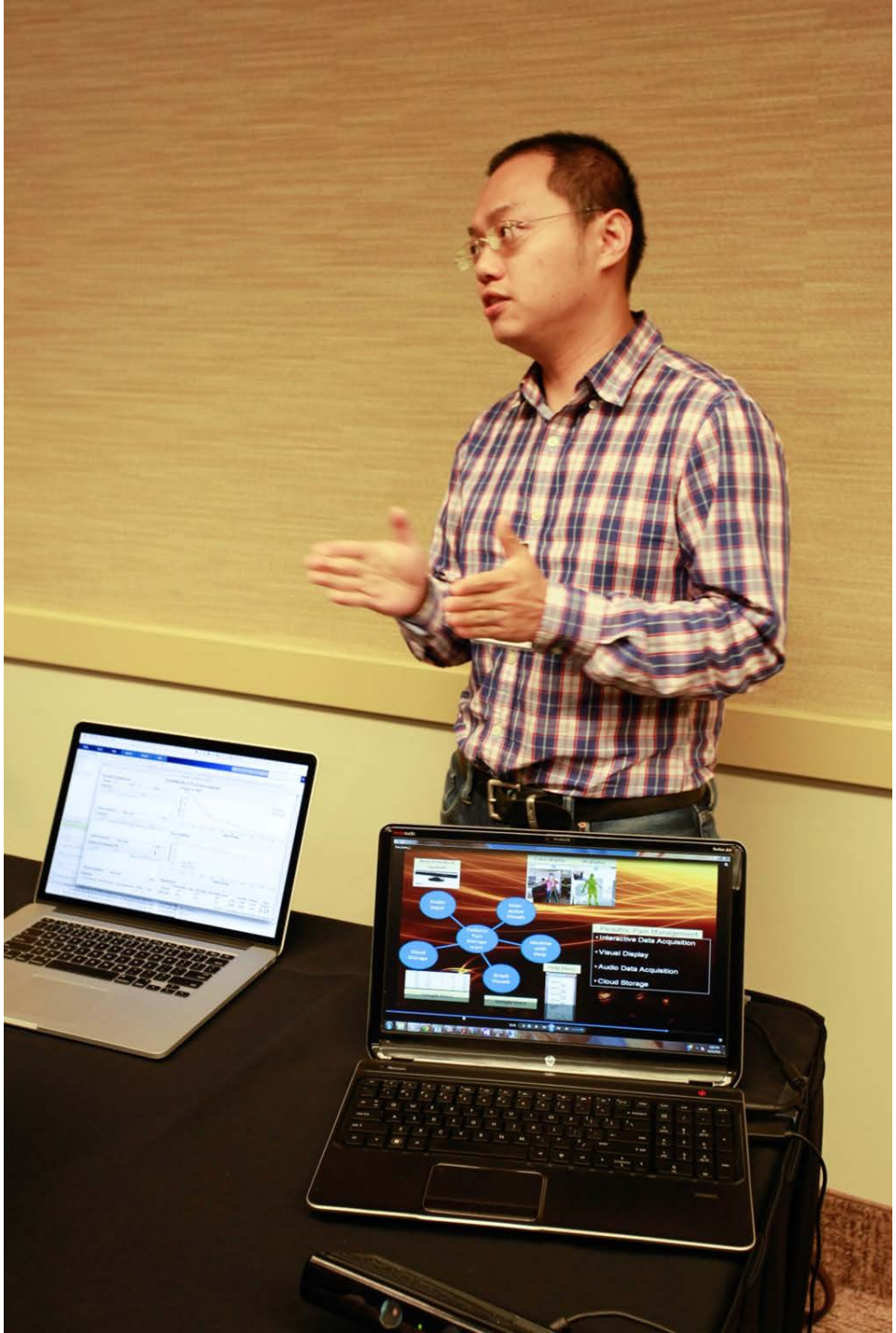

by the
Medicine
of Sciences
Before Playing Brush Up
After Two Weeks of Play
One Year Later

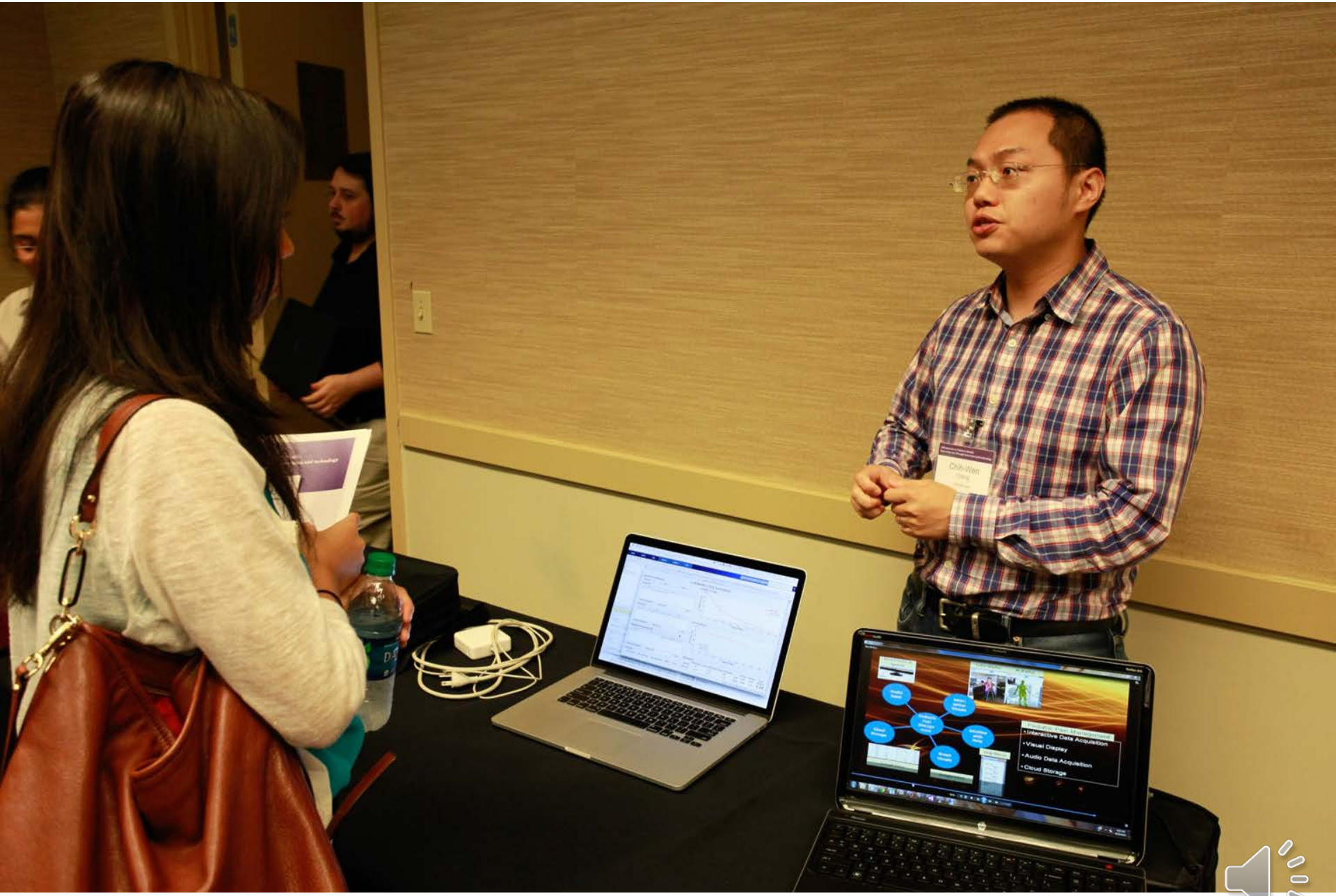

Brush Up


Before Playing Brush Up
After Two Weeks
One Year Later


SAPLING: PEDIATRIC SPINAL CAGE
a solution for children with cancer
PEDIATRIC SPINAL FUSIONS
INTRODUCING THE SAPLING CAGE
TARGETED PROGRESSION OF DEGRADATION
THE FUTURE OF FUSION


iEAT:
There's an App for that


• Interactive Data Acquisition
• Visual Display
• Audio Data Acquisition
• Cloud Storage


Chih-Wen
•Interactive Data Acquisition
•Visual Display
•Audio Data Acquisition
•Cloud Storage


KIDS Georgia
Kids and Families Impacting Disease through Science
EMORY
Children's
Kids using their voice to enhance medicine
KiDS
Georgia
iCAN
Michelle Grimes


Emory Conference Center Hotel
Inflammation in Pediatric Health:
Improving care through innovation and technology
June 22, 2015
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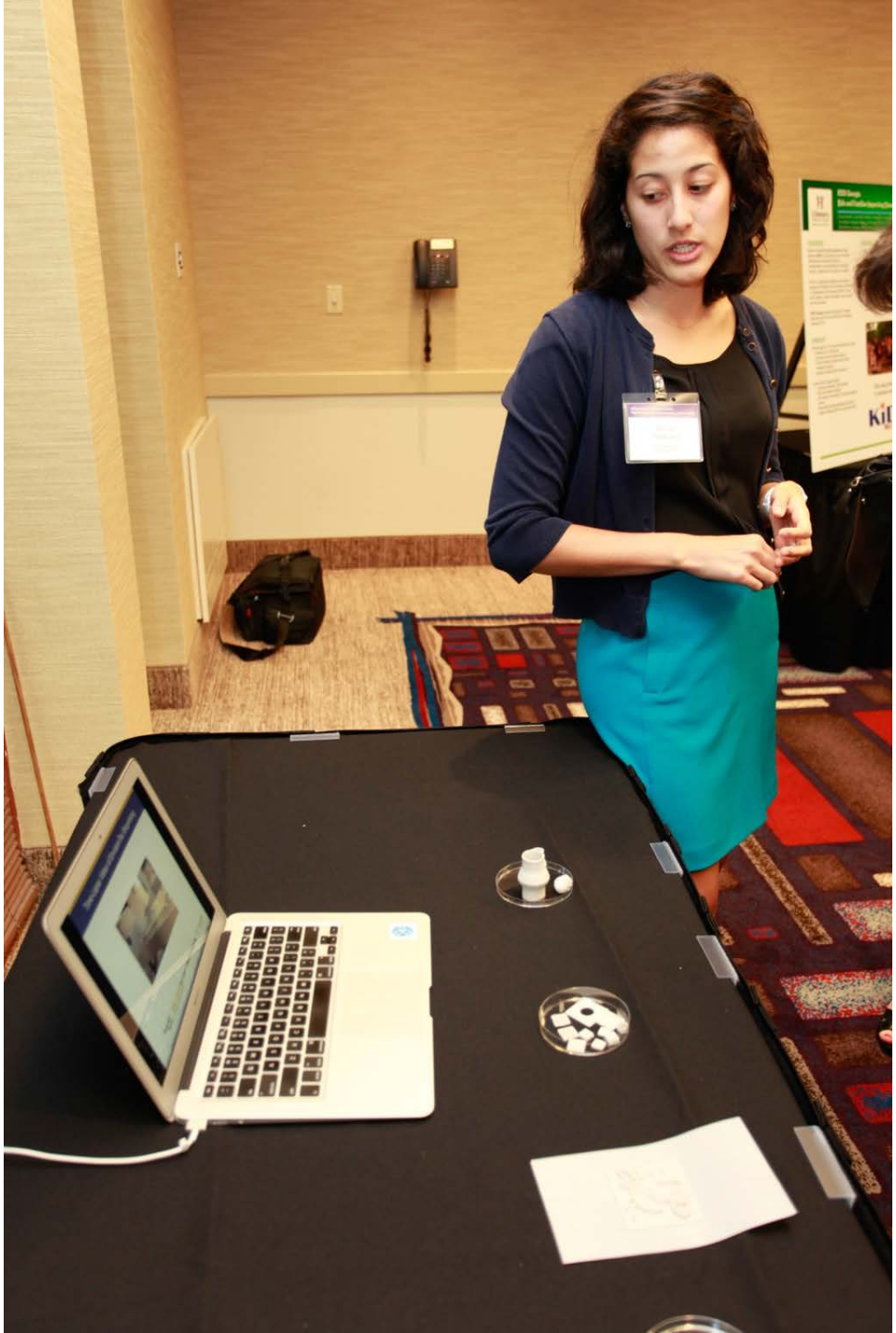
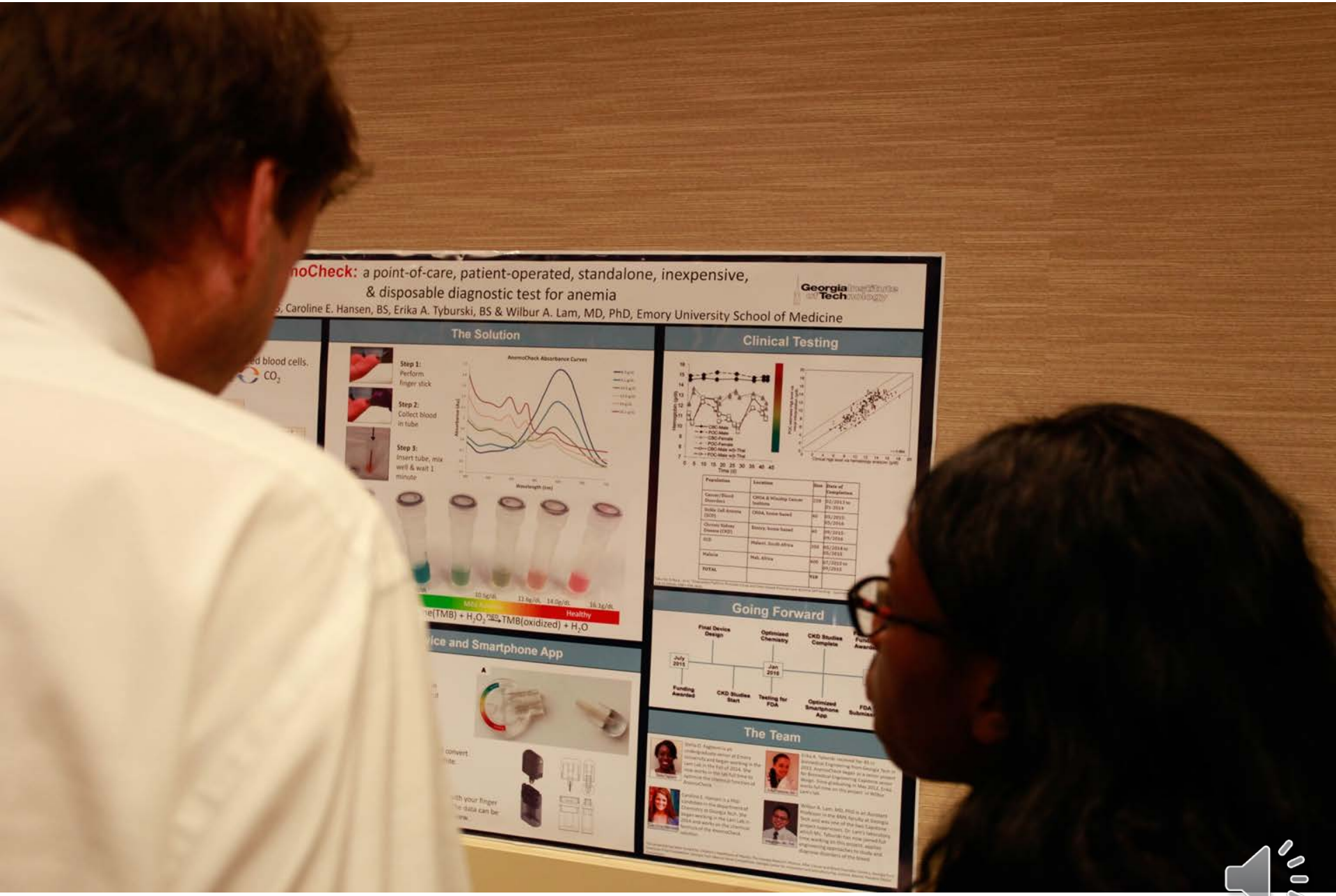
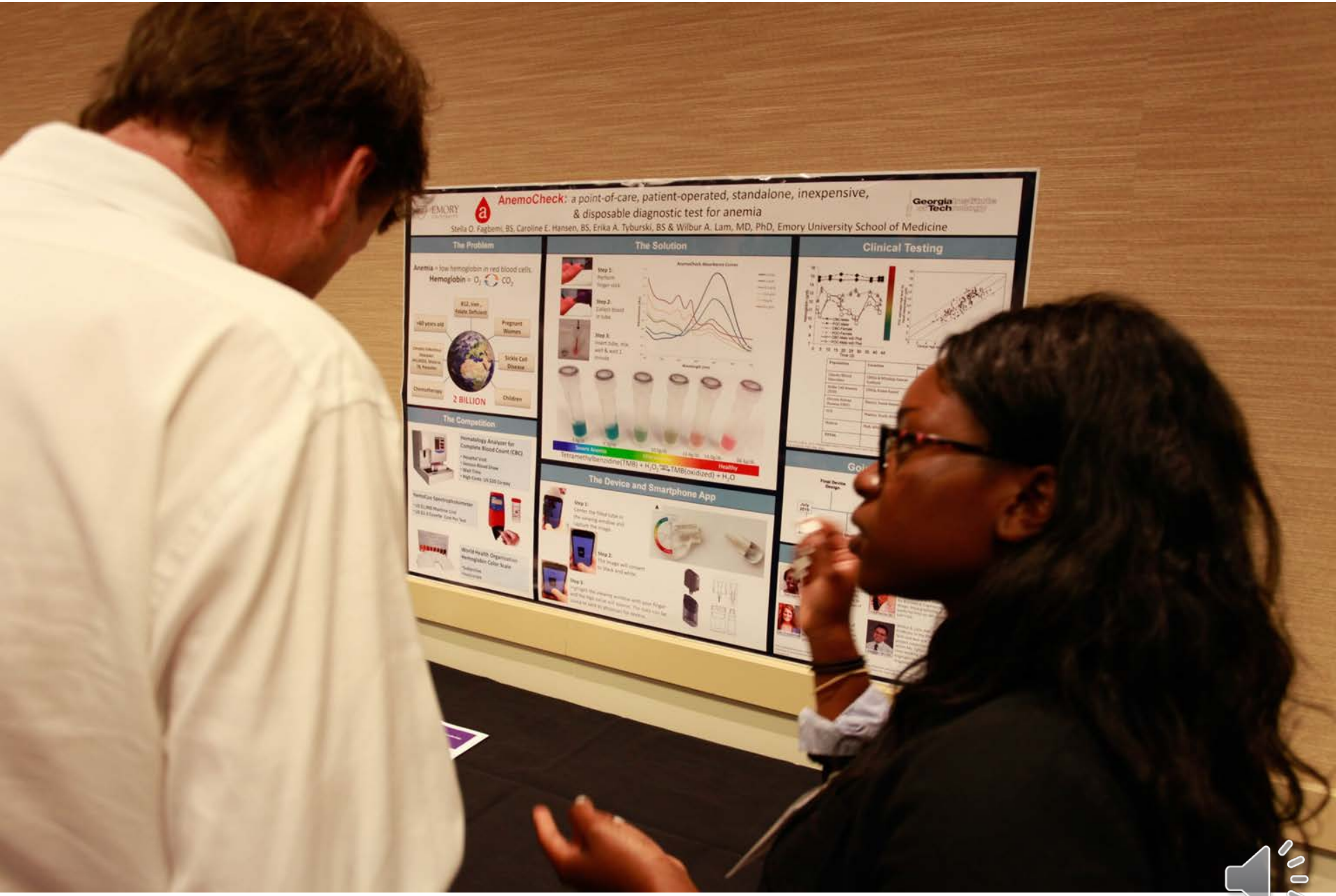



noCheck: a point-of-care, patient-operated, standalone, inexpensive, & disposable diagnostic test for anemia
Georgia Tech
S, Caroline E. Hansen, BS, Erika A. Tyburski, BS & Wilbur A. Lam, MD, PhD, Emory University School of Medicine
The Solution
Step 1: Perform finger stick
Step 2: Collect blood in tube
Step 3: Insert tube, mix well & wait 1 minute
AnemoCheck Absorbance Curves
Healthy
Clinical Testing
Going Forward
Final Device Design
Optimized Chemistry
CKD Studies Complete
July 2015
Jan 2016
Funding Awarded
CKD Studies Start
Testing for FDA
Optimized Smartphone App
The Team


AnemoCheck: a point-of-care, patient-operated, standalone, inexpensive, & disposable diagnostic test for anemia
Stella O. Fagbemi, BS, Caroline E. Hansen, BS, Erika A. Tyburski, BS & Wilbur A. Lam, MD, PhD, Emory University School of Medicine
The Problem
Anemia = low hemoglobin in red blood cells.
Hemoglobin = O_2 CO_2
2 BILLION
The Solution
The Competition
The Device and Smartphone App
Clinical Testing

AnemoCheck: a point-of-care, patient-operated, standalone, inexpensive, & disposable diagnostic test for anemia

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EMORY UNIVERSITY

Georgia Tech

The Problem

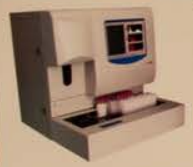
Anemia = low hemoglobin in red blood cells.

Hemoglobin = O_2 CO_2

- B12, Iron , Folate Deficient
- Pregnant Women
- Sickle Cell Disease
- Children
- Chemotherapy
- Chronic Infectious Diseases: HIV/AIDS, Malaria, TB, Parasites
- >60 years old

2 BILLION

The Competition



Hematology Analyzer for Complete Blood Count (CBC)

- Hospital Visit
- Venous Blood Draw
- Wait Time
- High Costs: US $20 Co-pay

HemoCue Spectrophotometer

- US $1,000 Machine Cost
- US $1-2 Cuvette Cost Per Test

World Health Organization Hemoglobin Color Scale

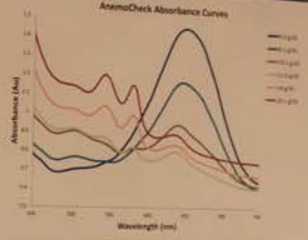
- Subjective
- Inaccurate

The Solution

Step 1: Perform finger stick

Step 2: Collect blood in tube

Step 3: Insert tube, mix well & wait 1 minute



Tetramethylbenzidine(TMB) + $H_2O_2 \xrightarrow{HRP}$ TMB(oxidized) + H_2O

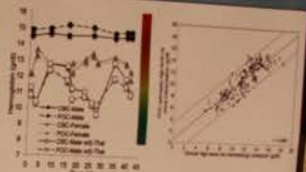
The Device and Smartphone App

Step 1: Center the filled tube in the viewing window and capture the image.

Step 2: The image will convert to black and white.

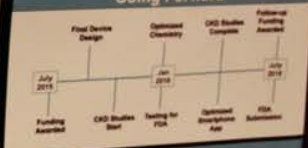
Step 3: Highlight the viewing window with your finger and the Hgb value will appear. The data can be saved or sent to physician for review.

Clinical Testing

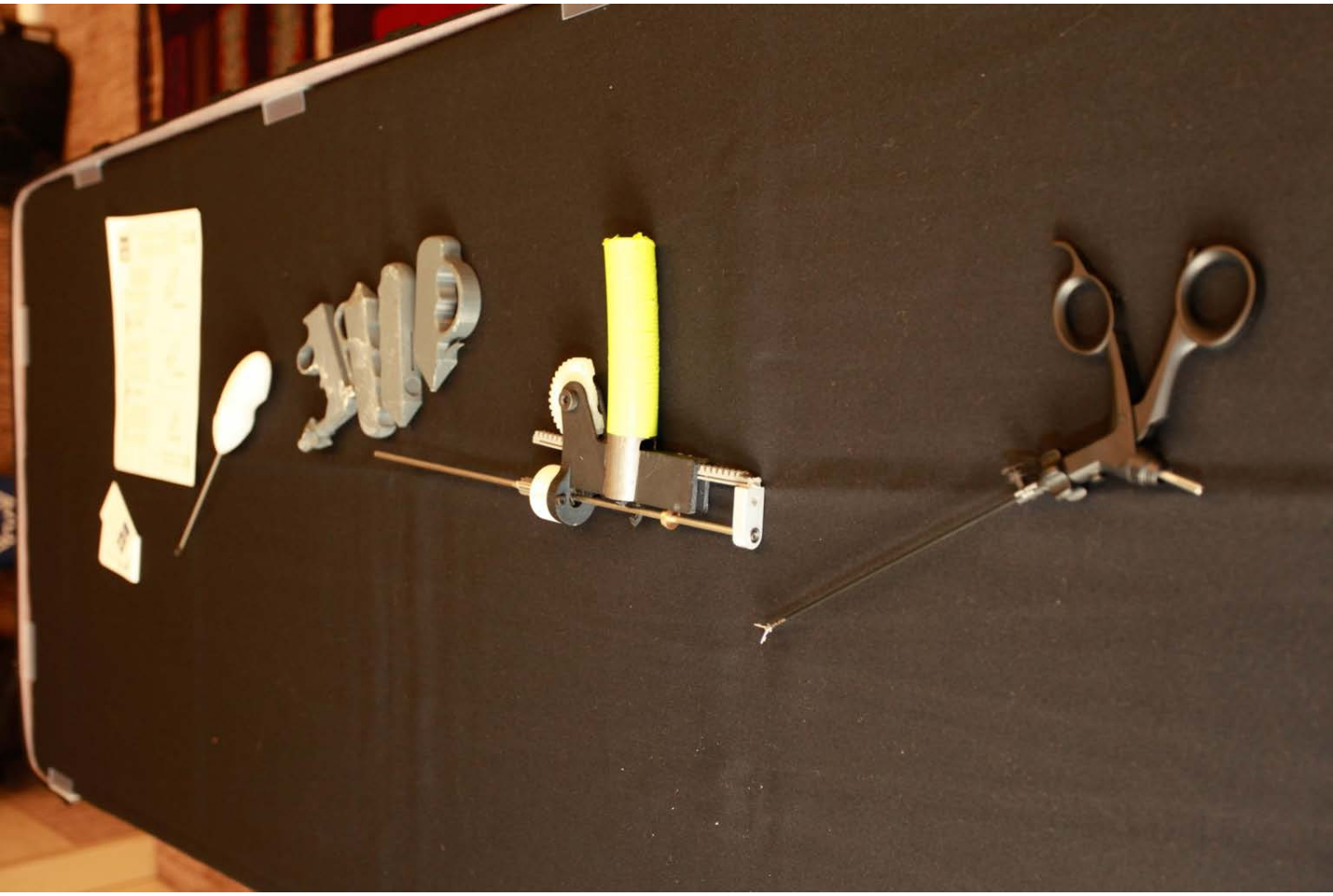


Population	Location	Size	Date of Enrollment
Cancer/Blood Disorders	UNMC & Nebraska Cancer Institute	119	Dec 2013 to Jan 2014
Sickle Cell Anemia (SCD)	CRHA, Accra Ghana	80	Jan 2015 to Feb 2015
Chronic Kidney Disease (CKD)	Korle-Bu, Accra Ghana	80	Jan 2015 to Feb 2015
ACD	Malawi, South Africa	200	Jan 2015 to Feb 2015
Malaria	Mali, Africa	600	Jan 2015 to Feb 2015
TOTAL		968	

Going Forward



The Team




THE FUTURE OF FUSION
supporting the solution
ELIZABETH CARPENTER, NASER IBRAHIM, KAVYA MUDDUKUMAR, KARTHIK NATHAN
Georgia Tech
Department of Biomedical Engineering
COALESCE
VIABILITY
DIFFERENTIATION
MIGRATION
MECHANICAL TESTING
COMPRESSION
FATIGUE
TORSIONAL
CONCLUSION
FUTURE DIRECTIONS
ACKNOWLEDGEMENTS
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Children's


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