

Amanda Foster Pealger
Research Scientist II
Center for Advanced Communications Policy

CURRENT FIELDS OF INTEREST:

- **User Centered Design**
- **Patient Centered Design**
- **Public Health**

I. MASTERY OF A COMPLEX FIELD

A. Thesis/Dissertation

Foster, Amanda L. "Lost To Lucrative: A Study of the Atlanta Beltline." Master's Thesis, Georgia Institute of Technology, 2017.

B. Conference Presentations without Proceedings

1. Farmer, Sarah, **Foster, Amanda**. "Don't Forget About Human Factors – Lessons from COVID 19 Point-of-Care Diagnostic Testing." Children's Healthcare of Atlanta's COVID Seminar Series, virtual format, March 5, 2021.
2. **Foster, A.**, Bartlett, C., Baranak, A., Fain, B., Shultz, S., Denham, M. Design and Evaluation of the Usability and Utility of an MRI Training System for Children with Autism Spectrum Disorder, poster presented at Southeastern Pediatric Research Conference: Precision Medicine, in Atlanta, GA, June 8, 2018.
3. Gonzalez, E., Fausset, C.B., **Foster, A.**, Cha, G. & Fain, W. B. (2015). Moving in, out, and around the home: solutions from older adults with long-term mobility impairment. In Rehabilitation Engineering Society of North America (RESNA) Annual Conference 2015

C. Published Research Papers

1. Frediani JK, Levy JM, Rao A, Bassit L, Figueroa J, Vos MB, Wood A, Jerris R, Leung-Pineda V, Gonzalez MD, Rogers BB, Mavigner M, Schinazi RF, Schoof N, Waggoner JJ, Kempker RR, Rebolledo PA, O'Neal JW, Stone C, Chahroudi A, Morris CR, Suessmith A, Sullivan J, Farmer S, **Foster A**, Roback JD, Ramachandra T, Washington C, Le K, Cordero MC, Esper A, Nehl EJ, Wang YF, Tyburski EA, Martin GS, Lam WA. Multidisciplinary Assessment of the Abbott BinaxNOW SARS-CoV-2 Point-of-Care Antigen Test in the Context of Emerging Viral Variants and Self-Administration. *Sci Rep* (2021) In press.
2. Farmer, S., V. Razin, A. F. Peagler, S. Strickler, W. B. Fain, G. L. Damhorst, R. R. Kempker, N. R. Pollock, O. Brand, B. Seitter, S. S. Heilman, E. J. Nehl, J. M. Levy, D. S. Gottfried, G. S. Martin, M. Greenleaf, D. N. Ku, J. J. Waggoner, E. Iffrig, R. G. Mannino, F. W. Y, E. Ortlund, J. Sullivan, P. A. Rebolledo, V. Claveria, J. D. Roback, M. Benoit, C. Stone, A. Esper, F. Frank and W. A. Lam (2022). "Don't forget about human factors: Lessons learned from COVID-19 point-of-care testing." Cell Rep Methods 2(5): 100222.

3. Waggoner, J. J., M. B. Vos, E. A. Tyburski, P. V. Nguyen, J. M. Ingersoll, C. Miller, J. Sullivan, M. Griffiths, C. Stone, M. Benoit, L. Bénédict, B. Seitter, R. Jerris, J. M. Levy, C. S. Kraft, S. Farmer, A. Peagler, A. Wood, A. L. Westbrook, C. R. Morris, U. N. Sathian, W. Heetderks, L. Li, K. Roth, M. Barcus, T. Stenzel, G. S. Martin and W. A. Lam (2022). "Concordance of SARS-CoV-2 Results in Self-collected Nasal Swabs vs Swabs Collected by Health Care Workers in Children and Adolescents." JAMA 328(10): 935-940.

D. Awards and Achievements

1. **Outstanding Achievement in Research Program Development 2022** award as part of the Georgia Tech RADx Team. (April 29, 2022)

E. Key Delivered Products

1. Rapid Acceleration of Diagnostics (RADx)

Sponsor/ To Whom Delivered: National Institutes of Health

Date range for work performed by the candidate: April 2020 – Present

RADx is an initiative to help bring new and existing technologies to help bring COVID-19 testing to the public. The Atlanta center is a collaboration between Emory University, Children's Healthcare of Atlanta, and Georgia Tech to evaluate these devices. As a part of the Atlanta center, the Georgia Tech HomeLab group evaluated usability.

Candidate's specific technical contributions: Peagler has assisted in conducting over 40 usability evaluations for point of care and home test devices. These evaluations include internal evaluations, observations, user testing, and reporting.

2. FASI Incorporated Assessments for Waiver Programs

Sponsor/ To Whom Delivered: Georgia Department of Community Health

Date range for work performed by the candidate: Aug. 2018 - April 2019

To better report on the functional status of Medicare waver applicants, the FASI (Functional Analysis Standardized Items) tool was developed. However, adding such an intensive tool to Georgia's waiver application process deemed impractical due to time constraints as well as the mental and physical fatigue of the applicants being reviewed. The FASI Incorporated Assessments were developed to address these problems. These assessments incorporated the current application tools used with many FASI items. Assessments for two waiver programs were developed, with a subset of questions in each assessment being interchangeable to help expediate transition of members from one waiver to another.

In addition to the reporting benefits of these assessments, these tools were developed into a fillable PDF format. This simple format matches reporting systems at DCH as well as allows the assessors to gather data electronically in places without access to internet. Eliminating the need for re-entering data reduces time and possibility for data entry errors.

Currently one of the waiver programs use the tool, and the other is transitioning their process to use it in the future.

Candidate's specific technical contributions: As de facto task lead, Foster collected materials, interviewed stakeholders, designed the assessment content, and trained the DCH staff on use of the tools.

3. Quick Wins MRI Training Device

Sponsor/ To Whom Delivered: Marcus Autism Center

Date range for work performed by the candidate: 05/01/2017 - 09/01/2018

While the use of simulation devices has shown promising results with typically developing children, there is little available research on children with developmental disorders, including ASD. The Marcus Autism Center is equipped with a MRI simulator that they pair with an Adaptive Behavior Approach (ABA) to work with study participants (children with ASD) to familiarize them with the scanner, reducing their anxiety, and teaching them to lie still for a designated amount of time. A major challenge to this approach is that children with ASD often lack the ability to generalize experiences from one situation to the next. This means that while they may become comfortable with the mock scanner environment, when moved to the actual MRI scanner they encounter an entirely new experience.

There are two primary goals for this project. The first is to update the current mock scanner so that it is a close approximation of Marcus's new Siemens Prisma scanner. The second goal of this project is to develop a "façade" for both the mock MRI and actual MRI scanner.

Along with updating the mockup scanner for a closer simulated experience for practicing, the GTRI team found that a façade to the machines were not the answer to making the children feel more comfortable in during the MRI experience. The GTRI team found through interviews with children with ASD and their families that the best way to comfort these children during this uncomfortable experience was to provide a level of control to the children. Therefore, the team designed an ambient lighting solution to allow the children to control the light in the room, therefore simulating control over the room.

Candidate's specific technical contributions: As a contributor, Foster conducted user interviews with ASD children and their families, pulled together reporting documents, and contributed to the design of the ambient lighting solution.

4. Airline Cushion Design

Sponsor/ To Whom Delivered: Custom Products Inc.

Date range for work performed by the candidate: 11/01/2016 - 03/01/2017

The purpose of this project was to develop a more comfortable airplane seat cushion for domestic airlines. Custom Products Inc. challenged the GTRI team to increase comfort under the constraints of width, thickness, and weight. Then, the team was tasked to user test the design against current seat cushion designs.

The GTRI team, consisting of individuals with Industrial Design, Mechanical Engineering, and Human Factors backgrounds, experimented with materials and shapes to develop a soft, yet supportive design for the airline cushion. The design

was force tested as well as user tested, where the team measured users' fidgets and micro-movements during an extended, double blind study.

Candidate's specific technical contributions: Ms. Foster contributed to the design iteration process by way of sketching, prototyping, force testing, and material sourcing. She also led the user testing effort by recruiting and running each user test.

II. PROJECT LEADERSHIP AND SUPERVISION

A. Leadership in Funded Research

Externally Sponsored Programs for which the Candidate served in a Leadership Role (PD/PI, Task Leader)

1.	Title:	RADx Usability
	Sponsor:	NIH
	P.I.:	Farmer, Sarah
	Role:	Task Lead
	Amount Funded for Project:	\$1,254,090
	Period of Performance (Project):	5/1/2020 – 9/29/2022
	Contributions:	Peagler has assisted in conducting over 40 usability evaluations for point of care and home test devices. These evaluations include internal evaluations, observations, user testing, and reporting.
2.	Title:	Cox Smart Home Study
	Sponsor:	Cox Communications
	P.I.:	Farmer, Sarah
	Role:	Task Lead
	Amount Funded for Project:	\$93,023
	Period of Performance (Project):	11/1/2021 – 9/30/2022
	Contributions:	Peagler assisted in documentation, data collection, and reporting.
3.	Title:	MagTrack Usability Testing
	Sponsor:	Georgia Research Alliance (Grant)
	P.I.:	Inan, Omer
	Role:	Contributor
	Amount Funded for Project:	
	Period of Performance (Project):	
	Contributions:	Peagler assisted in creating the IRB and interview materials for user testing of the MagTrack technology.
4.	Title:	Click Safe – DFCS Knowledge Transfer
	Sponsor:	Department of Human Services – Division of Family & Children Services
	P.I.:	Parise, Brian

	Role:	Contributor
	Amount Funded for Project:	\$328,000
	Period of Performance (Project):	7/1/2021 – 3/31/2022
	Contributions:	Peagler conducted project management tasks such as reporting, scheduling, and note taking. Additionally, she completed the internal app testing and documentation.
5.	Title:	Design Support and Evaluation of the Therapy Smart System
	Sponsor:	LVHS
	P.I.:	Fain, Brad
	Role:	Contributor
	Amount Funded for Project:	\$38,500
	Period of Performance (Project):	6/1/2021 – 8/31/2021
	Contributions:	Peagler assisted in the evaluation of the software, evaluation of the medication dispenser device, and reporting.
6.	Title:	ACDS TOOL FOR DEATH REPORTING
	Sponsor:	DHHS/NIOSH
	P.I.:	Duke, Jon D
	Role:	Contributor
	Amount Funded for Project:	\$358,810.00
	Period of Performance (Project):	09/28/2018 - 06/30/2020
	Contributions:	Foster performed a task analysis, stakeholder interviews, provided status updates to the sponsor, and contributed to the final report.
7.	Title:	COVID-19 TESTING TASK FORCE
	Sponsor:	GA BD OF REGENTS
	P.I.:	Liu, Brian T
	Role:	Contributor
	Amount Funded for Project:	\$229,482
	Period of Performance (Project):	4/1/2020 - 9/30/2020
	Contributions:	Foster assisted in task analysis and storyboarding to communicate the functionality of the app developed.
8.	Title:	RICOH ACCESSIBILITY
	Sponsor:	RICOH CORPORATION LTD
	P.I.:	Fain, Walter B
	Role:	Contributor
	Amount Funded for Project:	\$1,045,769.87
	Period of Performance (Project):	6/15/2010 - 3/31/2021
	Contributions:	Foster contributes to the ongoing relationship between GTRI and Ricoh by conducting usability interviews and contributing to

		usability reports.
9.	Title:	DBHDD WAVIER PROGRAM ASSESSMENT
	Sponsor:	GA DEPT OF BEHAVIORAL HLT
	P.I.:	Denham, Megan E
	Role:	Task Leader
	Amount Funded for Project:	\$217,134.00
	Period of Performance (Project):	05/01/2019 - 12/31/2019
	Contributions:	Primary contact for sponsor involvement, task delegation, and organized planning for Phase 2.
10.	Title:	SMARTMATIC 2019 - W FAIN
	Sponsor:	SMARTMATIC INTERNATIONAL
	P.I.:	Fain, Walter B
	Role:	Contributor
	Amount Funded for Project:	\$57,498.81
	Period of Performance (Project):	2/11/2019 - 12/10/2019
	Contributions:	Foster conducted usability interviews and contributed to the usability report.
11.	Title:	CMS TEFT PLANNING GRANT
	Sponsor:	GA DEPT OF COMM. HEALTH
	P.I.:	Gonzalez, Margarita G
	Role:	Contributor
	Amount Funded for Project:	\$5,592,312
	Period of Performance (Project):	4/1/2014 - 3/31/2019
	Contributions:	De facto task lead for stakeholder research, content, and design of the FASI Incorporated Assessments.
12.	Title:	HOMELAB COX COMMUNICATIONS
	Sponsor:	COX COMMUNICATIONS
	P.I.:	Fain, Walter B
	Role:	Contributor
	Amount Funded for Project:	\$315,237.07
	Period of Performance (Project):	4/1/2017 - 8/13/2019
	Contributions:	Foster installed, provided trouble shooting, and maintained participant contact during a longitudinal study of personal emergency systems in older adults' homes. She also assisted in reporting.
13.	Title:	FISKARS ERGONOMIC MAPPING
	Sponsor:	FISKARS BRANDS INC
	P.I.:	Fain, Walter B
	Role:	Contributor
	Amount Funded for Project:	\$418,000
	Period of Performance	3/28/2014 - 4/30/2019

	(Project):	
	Contributions:	Foster traveled to participants' homes, interviewed, and documented their experience with the product.
14.	Title:	REQUIREMENTS AND DESIGN FOR CDS FOR DIABETES AND WORK
	Sponsor:	DHHS/NIOSH
	P.I.:	Fain, Walter B
	Role:	Contributor
	Amount Funded for Project:	\$149,873.10
	Period of Performance (Project):	9/7/2017 - 9/6/2018
	Contributions:	Foster gathered requirements to create a clinical decision support (CDS) tool to identify when a diabetic patient have jobs that impact the management of their diabetes. She also assisted in creating templates for educational materials for those diabetic patients.
15.	Title:	DBHDD ASSESSMENT TECH
	Sponsor:	GA DEPT OF BEHAVIORAL HLT
	P.I.:	Owens, Michael Shane
	Role:	Contributor
	Amount Funded for Project:	\$65,000
	Period of Performance (Project):	8/1/2017 - 9/30/2018
	Contributions:	Foster assisted in creating a technology roadmap for DBHDD to strategize inducting waiver program participants and becoming a resource to the community.
16.	Title:	AIRLINE SEAT CUSHION DESIGN
	Sponsor:	CUSTOM PRODUCTS INC
	P.I.:	Baranak, Andrew
	Role:	Contributor
	Amount Funded for Project:	\$170,000
	Period of Performance (Project):	3/10/2016 - 4/10/2017
	Contributions:	Ms. Foster contributed to the design iteration process by way of sketching, prototyping, force testing, and material sourcing. She also led the user testing effort by recruiting and running each user test.
17.	Title:	GE KITCHEN HOMELAB STUDY
	Sponsor:	GE CO/GA
	P.I.:	Fain, Walter B
	Role:	Contributor
	Amount Funded for Project:	\$45,000
	Period of Performance (Project):	7/29/2015 - 6/30/2016
	Contributions:	Foster traveled to participants' homes, interviewed, and documented their experience while cooking a meal as part of an exploratory study to understand how older adults use their

		kitchens.
18.	Title:	AARP CATALYST
	Sponsor:	AARP ANDRUS
	P.I.:	Fain, Walter B
	Role:	Contributor
	Amount Funded for Project:	\$180,000
	Period of Performance (Project):	4/1/2015 - 4/30/2016
	Contributions:	Foster traveled to participants' homes, interviewed, and documented their experience while using activity trackers as part of a longitudinal study to understand how active older adults are during their everyday routines.

Internally Funded Programs (GT or GTRI) for which the Candidate served in a Leadership Role (PD/PI, Task Leader, etc.)

1.	Title:	CORP IRAD
	Sponsor:	GTRI
	P.I.:	Medda, Alessio
	Role:	Contributor
	Amount Funded for Project:	\$55,000
	Period of Performance (Project):	7/1/2019 – 6/1/2021
	Contributions:	Foster contributed to the overall design and color scheme of the app.
2.	Title:	CHOA QUICK WINS
	Sponsor:	GA TECH FOUNDATION
	P.I.:	Denham, Megan E
	Role:	Contributor
	Amount Funded for Project:	\$337,750.05
	Period of Performance (Project):	5/1/2015 - 6/30/2021
	Contributions:	As a contributor, Foster conducted user interviews with ASD children and their families, pulled together reporting documents, and contributed to the design of the ambient lighting solution.

III. SPONSORED PROGRAM DEVELOPMENT

B. Research Proposals

External Proposals to Sponsors

List the following information for each proposal:

1.	Title:	NOW/COMP WAIVER ASSESSMENT VALIDATION
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		AND TECHNOLOGY SUPPORT
	Sponsor:	Department of Behavioral Health and Developmental Disabilities
	PI:	Denham, Megan E.; Foster, Amanda L.
	Role:	Co-PI
	Date Submitted:	9/17/2019
	Amount Requested:	\$1,543,900
	Result:	Not Funded
	Contribution to Proposal:	With information gathered with the technical lead and potential co-PI, Foster composed the background of the project, scope of work, deliverables, and budget sections. This project proposal has two parts: technical solutions and assessment validation, so each section of the proposal was broken out into the details pertaining to each part.
2.	Title:	Digital Access Inequality In Rural Areas: Impact on Health and Service Availability
	Sponsor:	Facebook
	PI:	Denham, Megan E.; Foster, Amanda L.
	Role:	Co-PI
	Date Submitted:	8/19/19
	Amount Requested:	\$50,000
	Result:	Not Funded
	Contribution to Proposal:	Composed background, milestones, and budget sections with feedback from Denham, and adjusting as needed.

Internal Proposals (GT and/or GTRI)

1.	Title:	Longitudinal Study of COVID Smart App with Cognitively Impaired Individuals
	Sponsor:	Georgia Tech and Emory Brain Health Center
	PI:	Foster, Amanda L.
	Role:	Principle Investigator
	Date Submitted:	8/12/2020
	Amount Requested:	\$50,000
	Result:	Not Funded
	Contribution to Proposal:	Foster created this pre-proposal to further develop and test a monitoring app for COVID-19 for higher risk populations, specifically for cognitively impaired individuals.
2.	Title:	Automated Personal Nutrition Tracking System
	Sponsor:	Georgia Tech and Emory Brain Health Center
	PI:	Foster, Amanda L.
	Role:	Principle Investigator
	Date Submitted:	8/29/2019
	Amount Requested:	\$50,000
	Result:	Not Funded
	Contribution to Proposal:	Foster consulted with the key contributor to develop a study plan. She edited and submitted the pre-proposal.

