

Meredith McQuerry, Ph.D.

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EDUCATION

- Ph.D. August 2016 North Carolina State University
Major: Textile Technology Management
Dissertation: McQuerry, M. (2016). Clothing modifications for heat strain reduction in structural firefighter protective clothing systems. *North Carolina State University*. (p. 1-363).
- M.S. December 2013 University of Kentucky
Major: Merchandising, Apparel and Textiles (Textile Science)
Thesis: Cinnamon, M. (2013). Post use analysis of firefighter turnout gear: phase III. *University of Kentucky*. (p. 1-202).
- B.S. May 2012 University of Kentucky
Major: Merchandising, Apparel and Textiles
- B.S. May 2012 University of Kentucky
Major: Career and Technical Education (Family and Consumer Sciences)

EXPERIENCE

- Fall 2016-Present Assistant Professor, Tenure-Track
Retail, Merchandising, and Product Development Department
Florida State University, Tallahassee, FL
- Spring 2014-
Summer 2016 Graduate Research Assistant, Full-Time (12 month)
Textile Protection and Comfort Center (TPACC)
North Carolina State University, Raleigh, NC
- Fall 2015-
Spring 2016 Adjunct Professor
Human Environmental Sciences Department
Meredith College, Raleigh, NC
- Fall 2013 Primary Instructor/Graduate Teaching Assistant
Retailing, Tourism and Management Department
University of Kentucky, Lexington, KY
- Spring 2010-
Fall 2013 Research Assistant/Lab Supervisor, Full-Time (12 month),
Textile Testing Laboratory
University of Kentucky, Lexington, KY

RESEARCH

Grants

External Contracts & Research Grants Funded:

McQuerry, M. (PI). (10/1/2017-4/1/2018). Evaluation of the performance of station wear while worn with an NFPA 1971 protective ensemble. *National Fire Protection Association Research Foundation*. (**\$5,000**).

McQuerry, M. (PI), Schofield, S. (Co-PI), Ormsbee, M. (Co-PI). (1/1/2017-3/31/2018). Development of novel turnout suit pattern for improved mobility and comfort. *Lion Apparel Firefighter Turnout Research Grant Program*. (**\$94,603**).

Hogans, K.* (PI). & McQuerry, M. (Co-PI). (1/2017-1/2018). Assessment of laser perforated athletic uniforms for improved thermal comfort and human performance. *ASTM Student Project Grant Program*. **Faculty Advisor**. (**\$500**).

McQuerry, M (PI). (1/2016-1/2017). Heat transfer model for validation of a heat loss test method in isothermal conditions. *ASTM Student Project Grant Program*. (**\$500**).

McQuerry, M (PI). (1/2016-1/2017). Heat transfer model for validation of a heat loss test method in isothermal conditions. *AATCC Foundation Student Research Support*. (**\$800**).

McQuerry, M (PI). (1/2015-1/2016). Evaluating localized ventilation of firefighter turnout gear: a validation between test methods. *AATCC Foundation Student Research Support*. (**\$500**).

External Contracts & Research Grants Pending:

McQuerry, M. (PI) & Ormsbee, M. (Co-PI). (10/2017). Physiological comfort assessment of a novel lightweight turnout composite. *Fire-Dex Firefighter Research Grant Program*. (**\$27,263**).

McQuerry, M. (PI). (10/1/2017-10/31/2019). Body armor integration for ballistic, slash, and stab protection in structural firefighting and emergency medical service applications. *Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA), Assistance to Firefighters Grant Program*. (**\$991,151**).

External Contracts & Research Grants Denied:

McQuerry, M. (PI), Jur, J. (Co-PI), Dulebenets, M. (Co-PI). (6/1/2017-5/31/2017). Integrated wearable technology communication system: technical basis for designing a multifaceted advanced sensor platform for wildland firefighters. *NIST Public Safety Innovation Accelerator Program*. (**\$1,025,597**).

McQuerry, M. (PI). Body Armor Integration in Structural Firefighter Turnouts for Ballistic Protection. *Defense Advanced Research Projects Agency (DARPA) Young Faculty Award (YFA)*. (**\$485,000**).

Internal Contracts & Grants Funded:

McQuerry, M. (PI). (5/8/17-8/4/17). Assessment of Female Firefighter User Needs for Improved Fit and Ergonomics. *First Year Assistant Professor Grant Program, Florida State University*. (\$20,000).

McQuerry, M. (Fall 2016). Faculty Travel Grant. *Florida State University*. (\$1500).

Internal Contracts & Grants Pending:

McQuerry, M., Hao, A., & Walsh, R. (Fall 2017). Acquisition of a tensile testing instrument for textile strength and durability assessment. *Equipment and Infrastructure Enhancement Grant, Florida State University*. (\$46,479). (originally submitted Spring 2017; recommended for resubmission).

Publications

*denotes undergraduate or graduate student co-authorship

Refereed Journal Articles:

McQuerry, M. & Hogans, K.* (under review). Assessment of ventilated athletic uniforms for improved thermal comfort and human performance. *Clothing and Textiles Research Journal*.

McQuerry, M., DenHartog, E., Barker, R. (under review). Impact of reinforcements on heat stress in structural firefighter turnout suits. *Journal of the Textile Institute*.

McQuerry, M., Barker, R., DenHartog, E. (in revision). Functional design of structural firefighter turnout suits for improved thermal comfort: thermal manikin and physiological modeling evaluation. *Clothing and Textiles Research Journal*.

McQuerry, M. (in press). Validation of a clothing heat transfer model in non-isothermal test conditions. *ASTM Journal of Testing and Evaluation*.

McQuerry, M., DenHartog, E., Barker, R. (2017, online). Analysis of air gap volume in structural firefighter turnout constructions in relation to heat loss. *Textile Research Journal*. DOI: 10.1177/0040517517723024

McQuerry, M., DenHartog, E., Barker, R. (2017). Effect of self-contained breathing apparatus (SCBA) on heat loss in structural firefighter turnout suits. *AATCC Journal of Research*, 4(5), 1-5, DOI: 10.14504/ajr.4.5.1.

McQuerry, M., DenHartog, E., Barker, R. (2017). Evaluating turnout composite layering strategies for reducing thermal burden in structural firefighter protective clothing systems. *Textile Research Journal*. 87(10), 1217-1225, DOI: 10.1177/0040517516651101.

McQuerry, M., Barker, R., DenHartog, E., Hummel, A. (2016). Alternative methodologies for determining the impact of clothing ventilation in structural firefighter turnout suits. *Performance*

of Protective Clothing and Equipment: 10th Volume, Risk Reduction through Research and Testing, ASTM STP1593, pp. 313-330, DOI: 10.1520/STP159320160003.

McQuerry, M., DenHartog, E., Barker, R. (2016). Garment ventilation strategies for improving heat loss in structural firefighter clothing ensembles. *AATCC Journal of Research*, 3(3), 9-14, DOI: 10.14504/ajr.3.3.2. [AATCC J. W. Weaver Paper of the Year Award]

McQuerry, M., DenHartog, E., Barker, R., Ross, K. (2016). A review of garment ventilation strategies for structural firefighter protective clothing. *Textile Research Journal*, 86(7), 727-742, DOI: 10.1177/0040517515595029.

McQuerry, M., Klausling, S., Cotterill, D., Easter, E. (2015). A post-use evaluation of turnout gear using NFPA 1971 standard on protective ensembles for structural fire fighting and NFPA 1851 on selection, care and maintenance. *Fire Technology*, 51(5), 1149-1166, DOI: 10.1007/s10694-014-0446-x.

Manuscripts in Preparation for Submission:

McQuerry, M., DenHartog, E., Barker, R. Physiological responses while wearing firefighters' protective clothing for improved heat loss.

Manuscripts under Development:

McQuerry, M. Investigation of female firefighter fit and ergonomics in personal protective gear.

McQuerry, M & Grzywacz, J. Comfort assessment of performance cooling fabric in agricultural personal protective clothing.

McQuerry, M. Durability properties of a performance cooling garment for industrial work applications.

McQuerry, M. & Schofield, S. Analysis of structural firefighter user needs for personal protective gear with enhanced mobility and comfort.

Trade Articles:

McQuerry, M., Barker, R., Hummel, A., Deaton, S. (2015). The cost of a pocket: how additional reinforcements impact THL & TPP. *Fire Engineering*. 168 (12), 78-79.

Invited Papers:

McQuerry, M. & Hogans, K.* (2017). Assessment of ventilated athletic uniforms for improved thermal comfort and human performance. *2017 International Textile and Apparel Association Paper of Distinction Submission*.

Invited Blog Posts:

McQuerry, M. (8/17/2017). Validity of turnout retirement age. *LIONConnects*.
<http://lionconnects.com/validity-of-turnout-retirement-age/>

Refereed Papers/Abstracts Published in Conference Proceedings:

McQuerry, M. (September 2017). Product quality: linking user needs, performance, and durability. *2017 Industrial Fabrics Association International Advanced Textiles Conference*. New Orleans, LA.

McQuerry, M., Barker, R., DenHartog, E. (March 2017). Revolutionizing structural firefighter protective clothing systems for improved physiological comfort. *2017 Proceedings of AATCC International Conference*, 501-512. Wilmington, NC.

McQuerry, M. (November 2016) PINTEREST: The fashionista's study tool. *2016 International Textile and Apparel Association Conference*. Vancouver, British Columbia, Canada. **[Received ITAA Rutherford Teaching Challenge Third Place Award]**

McQuerry, M., DenHartog, E., Barker, R. (November 2016) Functional design of structural firefighter clothing systems for improved comfort. *2016 International Textile and Apparel Association Conference*. Vancouver, British Columbia, Canada.

McQuerry, M., Barker, R., DenHartog, E. (November 2015) Evaluation of a modular layering approach for heat loss improvement in structural firefighter turnout garments. *2015 International Textile and Apparel Association Conference*. Santa Fe, New Mexico.

McQuerry, M., Barker, R., DenHartog, E., Ross, K., Deaton, S. (April 2015) Ventilation of firefighter turnout gear: reducing heat stress and improving physiological comfort. *2015 Proceedings of AATCC International Conference*, 546-555. Savannah, GA.

Cinnamon, M., Trenkamp, S., Cotterill, D., Easter, E. (June 2013). Post-use analysis of firefighter turnout gear: phases I, II, & III. *13th International Conference and Exhibition on Fire Science and Engineering*, 1383-1394. Windsor, England.

Cinnamon, M. (April 2013). Post use analysis of firefighter turnout gear: phase III. *2013 Proceedings of AATCC International Conference*, 68-77. Greenville, SC. **[Received Herman & Myrtle Student Paper Competition First Place Award]**

Easter, E., Cinnamon, M., Baker, E. (April 2013). Assessing the impact of wash water temperature, detergent type, and laundering platform on basic clothing attributes. *2013 Proceedings of AATCC International Conference*, 215-223. Greenville, SC.

Invited Conference Presentations:

McQuerry, M. (4/26/2017). Revolutionary turnout suit designs for the modern firefighter. *Fire Department Instructor's Conference; Innotex*. Indianapolis, IN.

McQuerry, M. (11/9/2016). PINTEREST: The Fashionista's Study Tool. *2016 International Textile and Apparel Association Conference*. Vancouver, Canada. **[Received ITAA Rutherford Teaching Challenge Third Place Award]**

Conference Presentations:

Hogans, K*. & McQuerry, M. (4/7/2017). Post-use analysis of football uniforms. *Southeastern Graduate Research Consortium*. Athens, GA.

McQuerry, M. (3/22/2017). Revolutionary turnout suit designs for the modern firefighter. *5th Biennial Fire Industry Education Resource Organization PPE Symposium*. Raleigh, NC.

McQuerry, M., DenHartog, E., Barker, R. (7/13/2016). Clothing modifications for heat strain reduction in structural firefighter protective clothing systems. *9th Textile Bioengineering and Informatics Symposium*. Melbourne, Australia.

McQuerry, M., Barker, R., DenHartog, E., Hummel, A. (1/29/2016). Testing methodologies to evaluate garment ventilation in structural firefighter turnouts for heat loss improvement. *10th Symposium on Performance of Protective Clothing and Equipment*. San Antonio, TX.

McQuerry, M. (1/28/2015). Post-use analysis of firefighter turnout gear: phases I, II, & III. *ASTM F23.80 Subcommittee on Flame and Thermal Hazards*. New Orleans, LA. **[Received ASTM student paper competition First Place Award]**

McQuerry, M. (4/14/2014). The revolutionary firefighter suit: advanced garment design. *2014 International Textiles Summit*, Leeds University, Leeds, United Kingdom.

Guest Lectures and Invited Seminars:

McQuerry, M. (3/2/2016). Clothing modifications for heat strain reduction in protective clothing systems. *North Carolina State University, College of Textiles, Introduction to Fiber Science Course*. Raleigh, NC.

McQuerry, M. (10/5/2015). Functional design for heat loss improvements in protective clothing. *North Carolina State University, College of Textiles, Introduction to Fiber Science Course*. Raleigh, NC.

McQuerry, M. (9/23/2015). Clothing modifications in structural firefighter protective clothing. *North Carolina State University, College of Textiles, Graduate Student Seminar*. Raleigh, NC.

McQuerry, M. (3/10/2015). The literature review. *Meredith College, Lecture for Family Resource Management Course*. Raleigh, NC.

Published Abstracts:

McQuerry, M. (3/2017). Heat transfer model for validation of a heat loss test method in non-isothermal conditions. *AATCC Review*, 17(2), p.27.

Poster Presentations:

McQuerry, M. (accepted for 11/2017). Investigation of female firefighter fit and ergonomics in structural turnout suits. *2017 International Textile and Apparel Association Conference*. St. Petersburg, FL.

Hogans, K.*, & McQuerry, M. (accepted for 11/2017). Assessment of ventilated athletic uniforms for improved thermal comfort and human performance. *2017 International Textile and Apparel Association Conference*. St. Petersburg, FL.

Hogans, K.* & McQuerry, M. (3/8/2017). Post-use analysis of ventilated football uniforms. 2017 *College of Human Sciences Research and Creativity Day*. Tallahassee, FL.

McQuerry, M. & DenHartog, E. (4/20/2016). Evaluating clothing ventilation of firefighter turnout gear: a validation between test methods. *AATCC 2016 International Conference*.

McQuerry, M. (3/23/2016). Clothing design modifications for heat loss improvement in structural firefighter protective clothing. *11th Annual NC State University Graduate Student Research Symposium*. (nominated by Associate Dean for Academic Programs to represent College of Textiles doctoral programs)

McQuerry, M., Hernandez, J.*, Atkins, A.*, Francis, A.*, Dean, B.* (10/17/2015). Measurements of ventilation in turnout suits using tracer gas method. *North Carolina State University, College of Textiles, Open House*.

Published Book Reviews:

McQuerry, M. (10/2016). Book review of "Textiles and human thermophysiological comfort in the indoor environment," by Dr. Radostina Angelova. *International Textile and Apparel Association Newsletter*. 39 (5), 1-2.

TEACHING

COURSES TAUGHT

Florida State University:

FA 2017	CTE 1401	Intro to Textile Science		
FA 2017	CTE 4443	QA of Textiles and Apparel		
SU 2017	CTE 4905	Textiles for Interiors	1 student	(n/a)
SU 2017	COA 5906	Clothing Comfort	1 student	(n/a)
SP 2017	CTE 5912	Supervised Research	1 student	5.0 rating
SP 2017	CTE 4443	QA of Textiles and Apparel	77 students	4.9 rating
FA 2016	CTE 4443	QA of Textiles and Apparel	97 students	4.6 rating

Meredith College:

SP 2016	FMD 114	Apparel Merchandising	14 students	4.6 rating
FA 2015	FMD 114	Apparel Merchandising	30 students	4.5 rating

University of Kentucky:

FA 2013 MAT 120 Textiles for Consumers 40 students (n/a)

STUDENT ADVISING & MENTORSHIP**Master's Committee Member:**

Rachel Godown (2016-2018), North Carolina State University

Graduate Student Independent Research (2016-2017):

Kristian Hogans, Global Merchandising and Product Development Master's program, Florida State University; Project: Assessment of Laser Perforated Athletic Uniforms for Improved Thermal Comfort and Human Performance

Student Mentoring/Scholarship:

Heather Johnson, Cotton Incorporated FSU Ambassadorship, 2017

Elizabeth Grant, AATCC Foundation Textile Merchandising Scholarship, 2017

Co-Advisor of Senior Design Project and Independent Research Study: Supervised team of undergraduate textile technology and textile engineering students in fall 2015 and spring 2016 as part of capstone project course.

SKILLS & CERTIFICATION

Six Sigma Green Belt Certified: course completion through North Carolina State University, College of Textiles. Worked with General Electric appliance park in Louisville, KY to develop, complete, and present a project on the evaluation of measurement techniques for AHAM HLW-1-2010 Wash Performance.

ThermoAnalytics RadTherm Software: conducted thermal modeling to determine predicted physiological responses of humans when wearing specified protective clothing.

Color Measurement Instrumentation Techniques: completed two X-Rite fundamental seminars including color appearance, instrumentation, and quality control. Participated in textile color measurement and application professional short course at North Carolina State University.

3D Body Scanning Software: utilized 3D body scanning as a tool for measuring clothing air gap volume. Experience conducting body measurements for customized patternmaking and clothing construction.

Blackboard, Canvas, & Moodle: experience navigating software and managing course materials.

Lectra Product Life Cycle Management Software: completed two-day training seminar on software fundamentals.

AWARDS AND HONORS

- 2016 AATCC J. W. Weaver Paper of the Year Award, AATCC Journal of Research Rutherford Teaching Challenge, Third Place Award, ITAA
- 2015 International Textile and Apparel Association, Sara Douglas Fellowship for Professional Promise
Building Future Faculty Program, North Carolina State University
- 2014 ASTM International Student Paper Competition First Place Winner
Mentoring and Teaching Practicum Program, North Carolina State University
Graduate Fellowship & Assistantship, North Carolina State University
- 2013 AATCC, Herman and Myrtle Student Paper Competition, First Place Winner
Graduate Student of Excellence, Merchandising, Apparel, and Textiles
Department, School of Human Environmental Sciences, University of
Kentucky
- 2012 Graduate Assistantship, University of Kentucky
Undergraduate Student of Distinction, School of Human Environmental Sciences
- 2011 Undergraduate Research Assistantship, University of Kentucky
Family and Consumer Sciences Undergraduate Student of Excellence, School of
Human Environmental Sciences
- 2008-2012 Undergraduate Scholarships: Joe T. Davis Memorial, Carl F. Pollard, HES T.P.
Cooper, Academic Excellence, Ginny Ellington KATFACS
Dean's List, University of Kentucky: August 2008-December 2013

LEADERSHIP AND SERVICE

Department Service:

- Fall 2017 Member, Scholarship Review Committee
- Spring 2017 Graduation Marshall
- Spring 2017 Coordinator of Discovery on Parade Exhibit
- Spring 2017 Chair, Specialized Faculty Promotion Committee
- Spring 2017 Chair, Teaching in the Discipline Development Committee
- 2016-Present Faculty Advisor, American Association of Textile Chemists and Colorists Student
Organization
- Fall 2016 Member, Scholarship Review Committee
- Fall 2016 Member, Merit Review Committee

College Service:

- Spring 2017 CHS Research and Creativity Day Judge

Professional Service:

- 2016-Present ITAA Student Fellowships and Awards Committee

2015-Present ASTM F23 Protective Clothing Committee
2015-Present ASTM D13 Committee on Textiles
2014 ITAA Annual Conference Volunteer
2009-2013 University of Kentucky Official Plaid Advisory Board, Product Development Committee
2009-2012 Cotton Incorporated Denim Drive Coordinator (University of Kentucky)
2009-2012 University of Kentucky, College of Agriculture Ambassador

Invited Reviews:

July 2017 Invited Judge for IFAI Innovation Award
May 2017 Invited Reviewer of Iowa State University Limited Submission Grant Proposals
April 2017 Invited Reviewer of ITAA Research Paper Abstracts – Textile & Apparel Science

Reviewer for Refereed Journals:

2016-Present *Clothing and Textiles Research Journal*
2016-Present *AATCC Journal of Research*
2016-Present *American Society of Testing and Materials Selected Technical Papers*
2016-Present *Journal of the Textile Institute*
2016-Present *Journal of Industrial Textiles*
2015-Present *Textile Research Journal*
2014-Present *Journal of Strength and Conditioning Research*

PROFESSIONAL ORGANIZATIONS

2014-Present American Society for Testing and Materials (ASTM)
2014-Present International Textile and Apparel Association (ITAA)
2014-2016 Textile Association of Graduate Students (TAGS), NC State University
2013-Present American Association of Textile Colorists and Chemists (AATCC)
2010-2012 Phi Upsilon Omicron, National Honor Society in FCS
2008-2012 American Association of Family and Consumer Sciences (AAFCS)
2008-2012 Family, Career, and Community Leaders of America Alumni Association

PROFESSIONAL DEVELOPMENT

- FSU Council on Research and Creativity Grant Workshop, 9/9/2016
- FSU Basics of Grant Writing for NIH Workshop, 9/16/16
- FSU Basics of Grant Writing for NSF Workshop, 10/14/16
- Grant Training and Development Center, NSF Grant Workshop, University of Florida, 12/5/16

Last Updated: 9/1/2017