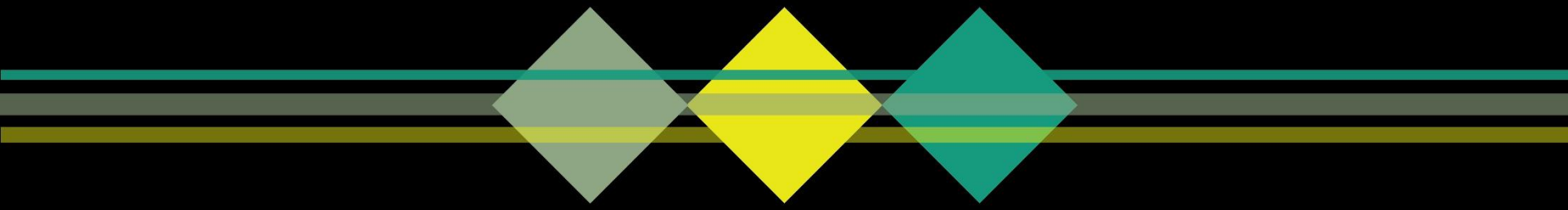
THE 2017 ATID SHOWCASE OF EXCELLENCE

# AWARDS CEREMONY



# ***HONORABLE MENTIONS***

## SECONDARY SCHOOL

## ***FAITH ZONGKER***

# VINTAGE SUIT

HONORABLE MENTION – HOMESCHOOL 7TH GRADE

## ***LAURA KOCH***

# BLUE BOHEMIAN SHIRT

HONORABLE MENTION – CHASE COUNTY 7TH GRADE

## ***HANNAH ROZARIO***

# TEAL JACKET & SKIRT

HONORABLE MENTION – MANACAH PREP 8TH GRADE

# 3RD PLACE

## SECONDARY SCHOOL

# ***ANNIE PHILLIPS***

## SKIRT & VEST

3RD PLACE – SECONDARY SCHOOL
HOMESCHOOL 12TH GRADE

# 2ND PLACE

## SECONDARY SCHOOL

# ***ASHLEY OLDHAM***

# DARE TO SPARKLE

2ND PLACE – SECONDARY SCHOOL
BENNINGTON HIGH 12TH GRADE

# 1ST PLACE

## SECONDARY SCHOOL

# ***GRACE ZONGKER***

# FLEECE ADVENTURE

1st PLACE – SECONDARY SCHOOL
HOMESCHOOL 12TH

# 3RD PLACE

## MOUNTED EXHIBIT

## LOWER DIVISION

# ***BROOKE ROBERTSON***

# SLEEK EXHIBITION

3RD PLACE MOUNTED EXHIBIT
LOWER DIVISION

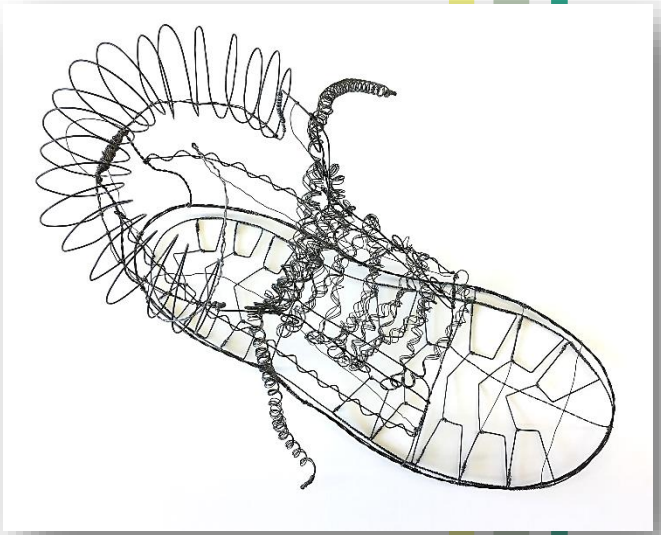
# 2ND PLACE

## MOUNTED EXHIBIT

## LOWER DIVISION

# ***JENNIFER AST***

# WIRE SHOE



2ND PLACE MOUNTED EXHIBIT
LOWER DIVISION

# 1ST PLACE

## MOUNTED EXHIBIT

## LOWER DIVISION

***BROOKE ROBERTSON***
***LAURA WIEBE***
***MEGAN BRIGGS***
***ABBY CONDREY***

# MIDSUMMER NIGHTS

1ST PLACE MOUNTED EXHIBIT
LOWER DIVISION

# 3RD PLACE

## MOUNTED EXHIBIT

## UPPER DIVISION

# *AARON SIMON*
# *MAGGIE STUART*
# *MCKENZIE TIGNOR*
# *HAOQING LIU*

## NIGHT WERQ

3RD PLACE MOUNTED EXHIBIT
UPPER DIVISION

# 2ND PLACE

## MOUNTED EXHIBIT

## UPPER DIVISION

# ***ALLYSON WOODARD***

# BRISK AUTUMN

## 2ND PLACE MOUNTED EXHIBIT
## UPPER DIVISION

# 1ST PLACE

## MOUNTED EXHIBIT

## UPPER DIVISION

# *AARON SIMON*

# BIRTHDAY BOYS

1ST PLACE MOUNTED EXHIBIT
UPPER DIVISION

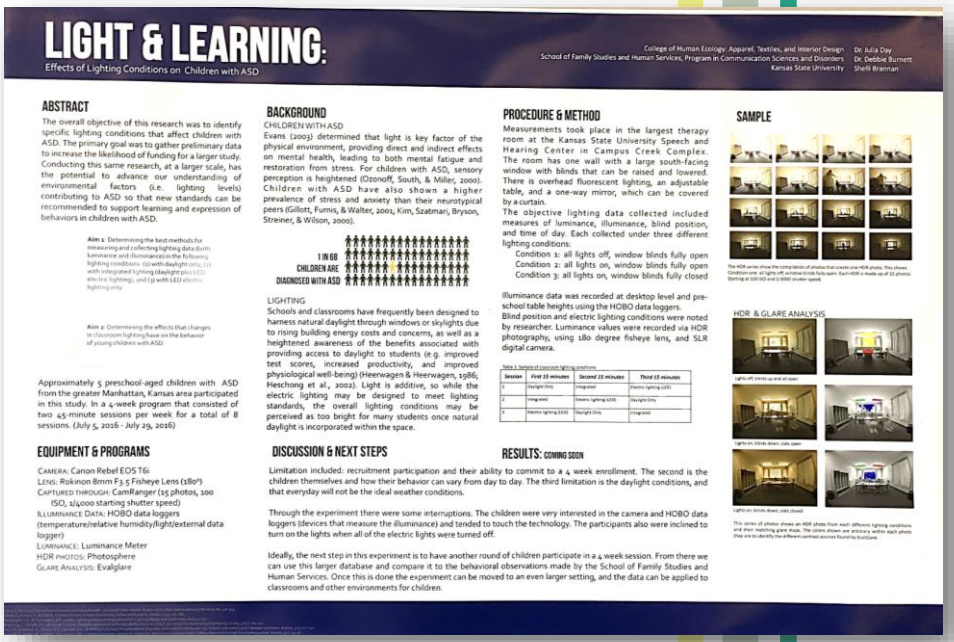
# EXCELLENCE IN RESEARCH AWARD

# *SHELLI BRANNON*

# LIGHT AND LEARNING:

## EFFECTS OF LIGHTING CONDITIONS ON CHILDREN WITH AUTISTIC SPECTRUM DISORDER

EXCELLENCE IN RESEARCH AWARD
SUPERVISORS: DR. JULIA DAY & DR. DEBBIE BURNETT



LIGHT & LEARNING:
Effects of Lighting Conditions on Children with ASD

College of Human Ecology: Apparel, Textiles, and Interior Design
School of Family Studies and Human Services, Program in Communication Sciences and Disorders
Kansas State University

Dr. Julia Day
Dr. Debbie Burnett
Shelli Brannan

ABSTRACT

The overall objective of this research was to identify specific lighting conditions that affect children with ASD. The primary goal was to gather preliminary data to increase the likelihood of funding for a larger study. Conducting this same research, at a larger scale, has the potential to advance our understanding of environmental factors (i.e. lighting levels) contributing to ASD so that new standards can be recommended to support learning and expression of behaviors in children with ASD.

Aim 1: Determining the best methods for measuring and collecting lighting data (both luminance and illuminance) in the following lighting conditions: (1) with daylight only, (2) with integrated lighting (daylight plus LED electric lighting), and (3) with LED electric lighting only.

Aim 2: Determining the effects that changes in classroom lighting have on the behavior of young children with ASD.

Approximately 5 preschool-aged children with ASD from the greater Manhattan, Kansas area participated in this study. In a 4-week program that consisted of two 45-minute sessions per week for a total of 8 sessions. (July 5, 2016 - July 29, 2016)

EQUIPMENT & PROGRAMS

CAMERA: Canon Rebel EOS T6i
LENS: Rokinon 8mm F3.5 Fisheye Lens (180°)
CAPTURED THROUGH: CamRanger (15 photos, 100 ISO, 1/4000 starting shutter speed)
ILLUMINANCE DATA: HOBO data loggers (temperature/relative humidity/light/external data logger)
LUMINANCE: Luminance Meter
HDR PHOTOS: Photosphere
GLARE ANALYSIS: Evalglare

BACKGROUND

CHILDREN WITH ASD

Evans (2003) determined that light is key factor of the physical environment, providing direct and indirect effects on mental health, leading to both mental fatigue and restoration from stress. For children with ASD, sensory perception is heightened (Ozonoff, South, & Miller, 2000). Children with ASD have also shown a higher prevalence of stress and anxiety than their neurotypical peers (Gillott, Furnis, & Walter, 2001; Kim, Szatmari, Bryson, Streiner, & Wilson, 2000).

1 IN 68 CHILDREN ARE DIAGNOSED WITH ASD

LIGHTING

Schools and classrooms have frequently been designed to harness natural daylight through windows or skylights due to rising building energy costs and concerns, as well as a heightened awareness of the benefits associated with providing access to daylight to students (e.g. improved test scores, increased productivity, and improved physiological well-being) (Heerwagen & Heerwagen, 1986; Heschong et al., 2002). Light is additive, so while the electric lighting may be designed to meet lighting standards, the overall lighting conditions may be perceived as too bright for many students once natural daylight is incorporated within the space.

DISCUSSION & NEXT STEPS

Limitation included: recruitment participation and their ability to commit to a 4 week enrollment. The second is the children themselves and how their behavior can vary from day to day. The third limitation is the daylight conditions, and that everyday will not be the ideal weather conditions.

Through the experiment there were some interruptions. The children were very interested in the camera and HOBO data loggers (devices that measure the illuminance) and tended to touch the technology. The participants also were inclined to turn on the lights when all of the electric lights were turned off.

Ideally, the next step in this experiment is to have another round of children participate in a 4 week session. From there we can use this larger database and compare it to the behavioral observations made by the School of Family Studies and Human Services. Once this is done the experiment can be moved to an even larger setting, and the data can be applied to classrooms and other environments for children.

PROCEDURE & METHOD

Measurements took place in the largest therapy room at the Kansas State University Speech and Hearing Center in Campus Creek Complex. The room has one wall with a large south-facing window with blinds that can be raised and lowered. There is overhead fluorescent lighting, an adjustable table, and a one-way mirror, which can be covered by a curtain.

The objective lighting data collected included measures of luminance, illuminance, blind position, and time of day. Each collected under three different lighting conditions:

Condition 1: all lights off, window blinds fully open
Condition 2: all lights on, window blinds fully open
Condition 3: all lights on, window blinds fully closed

Illuminance data was recorded at desktop level and pre-school table heights using the HOBO data loggers.
Blind position and electric lighting conditions were noted by researcher. Luminance values were recorded via HDR photography, using 180 degree fisheye lens, and SLR digital camera.

Table 1. Sample of classroom lighting conditions

| Session | First 15 minutes | Second 15 minutes | Third 15 minutes |
|---|---|---|---|
| 1 | Daylight Only | Integrated | Electric lighting (LED) |
| 2 | Integrated | Electric lighting (LED) | Daylight Only |
| 3 | Electric lighting (LED) | Daylight Only | Integrated |

RESULTS: COMING SOON

SAMPLE



The HDR series show the completion of photos that create one HDR photo. This shows Condition one: all lights off, window blinds fully open. Each HDR is made up of 15 photos starting at 100 ISO and 1/4000 shutter speed.

HDR & GLARE ANALYSIS



Lights off, blinds up and all open

Lights on, blinds down, slats open

Lights on, blinds down, slats closed

This series of photos shows an HDR photo from each different lighting conditions and their matching glare maps. The colors shown are arbitrary within each photo, they are to identify the different contrast sources found by Evalglare.

# BEST OF SHOW

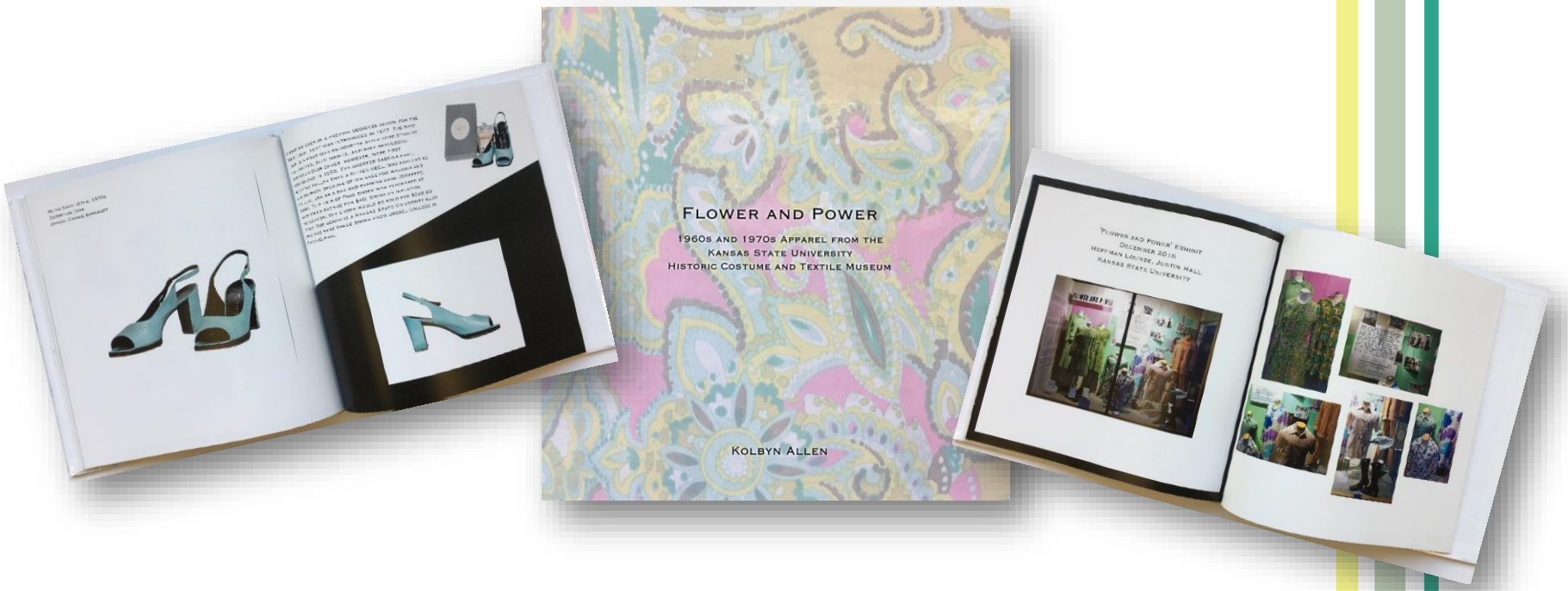
## MOUNTED EXHIBIT

# *KOLBYN ALLEN*

# FLOWER AND POWER:

## DRESS ARTIFACT PHOTOGRAPY, CARE, AND EXHIBIT DESIGN

BEST OF SHOW – MOUNTED EXHIBIT
SUPERVISER: DR. GENNA REEVES-DEARMOND



# 3RD PLACE

INSPIRED BY JANET REES

# *AARON SIMON*

## BOUQUET

## POUR FEMME

3RD PLACE – INSPIRED BY JANET REES

# 2ND PLACE

## INSPIRED BY JANET REES

# ***MACKENZIE LARKIN***

## THE AUDREY

2ND PLACE – INSPIRED BY JANET REES

# 1ST PLACE

## INSPIRED BY JANET REES

# ***AMBER FALOONA***

## BIANCA

1ST PLACE – INSPIRED BY JANET REES

# 2ND PLACE

## RUNWAY SHOW

## LOWER DIVISION

***KATIE BUHLER***

# FLOCKED FLORAL & BEADED PURPLE DRESS

2ND PLACE RUNWAY SHOW
LOWER DIVISION

# 1ST PLACE

## RUNWAY SHOW

## LOWER DIVISION

# ***MARGARET BAUGHMAN***

# WESTERN NIGHTS

1ST PLACE RUNWAY SHOW
LOWER DIVISION

# 3RD PLACE

## RUNWAY SHOW
## UPPER DIVISION

# ***LOUIS SCHULER***

# LITHE LORICA

3RD PLACE RUNWAY SHOW
UPPER DIVISION

# 2ND PLACE

## RUNWAY SHOW
## UPPER DIVISION

# ***SCHYLER SLAVEN***

# BONGEE

2ND PLACE RUNWAY SHOW
UPPER DIVISION

# 1ST PLACE

## RUNWAY SHOW
## UPPER DIVISION

# ***EMILY ANDREWS***

# MORE THAN THE SUM OF MY PARTS

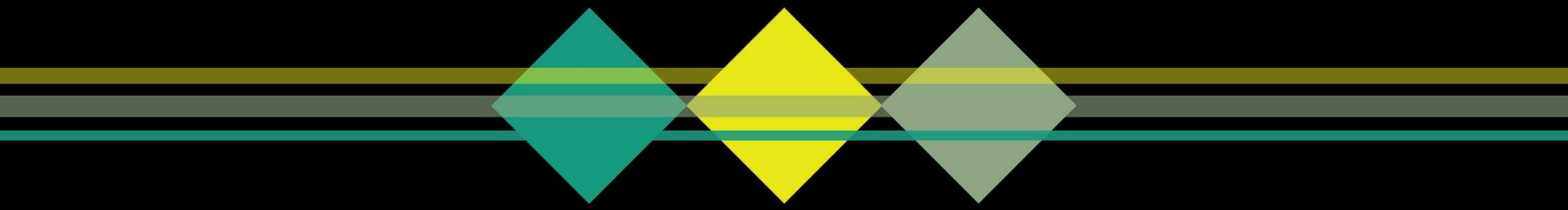
1ST PLACE RUNWAY SHOW
UPPER DIVISION

# BEST OF SHOW

RUNWAY SHOW

***BROOKE WALLACE***
***EMILY SANDERS***
***MARIA ZARINA DOMINGO***
***YELEI YANG***

# KALEIDOSCOPE

BEST OF SHOW – RUNWAY SHOW

# THANK YOU
# & GOODNIGHT!