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Objective

To innovate, entertain, and inspire

Education

MIT, Cambridge, Massachusetts

Ph.D. Candidate of Mechanical Engineering

Advisor: Professor David Wallace

Design for Entertainment

TU Delft, Netherlands

Visiting Researcher, Industrial Design Engineering 2006

Advisor: Professor Paul Hekkert

Study in applied multisensory incongruity, surprise and emotion

MIT, Cambridge, Massachusetts

M.S. Mechanical Engineering 2006

Cumulative 4.9 GPA out of 5.0

Advisor: Professor David Wallace

Thesis: The Exploration of Concepts for Projectile Toys

University of Central Florida, Orlando, Florida

B.S. Mechanical Engineering 2004

Cumulative 4.0 GPA out of 4.0, Summa Cum Laude

Advisor: Professor Eric Petersen

Thesis: The Application of Pneumatic Capsule Pipelines in Conjunction with Linear Induction Motors Towards the Enhancement of the Thrill Ride Industry

Design Work

Toy Design

Hasbro Toy Research (2004-2006)

Design and fabrication of SuperSoaker® and Nerf® projectile toys

Design of the Nerf® Ball Blaster™ currently on the market

Received patent on bi-stable spring actuator

Research performed with William Fienup and Advisor David Wallace

MIT Toy Lab (2005-Present)

Founder of lab dedicated to toy design and design for entertainment

Co-Advisor with Prof. David Wallace of several undergraduate toy design research projects

Endoscopic Biopsy Needle Design (2004)

Coring needle design that preserves tissue histology

Mechanism is patented

Group Project for MIT Course 2.75 Precision Machine Design

Advised by Massachusetts General Hospital, Dr. William Brugge, and Prof. Alex Slocum

5-Wits Ride/Show

Design of Elevator Simulator for Interactive Show (2006)

Installed at the Spy Museum in Washington DC

Group project for MIT course 2.744 Product Design

Project coordinator

“Tomb” Externship (2005)

Special effects and animatronics design for interactive show in Boston

Storyboarding and set design for future spy themed show

Design Television

Design Squad (2006)

Consulting for PBS show targeted at high school students to promote engineering

Prototyping musical instruments for music themed episode

Designers! Product Design TV (2005-2006)

Producer and host of MIT-based product design television pilot

Interdisciplinary teams of graduate students develop new musical instruments

Advised by Profs. Meejin Yoon and David Wallace, co-produced with Chandler Hatton

The Archimedes Death Ray (2006)

Feasibility testing to determine if a mirror array can set a wooden boat on fire

Seen on Discovery Channel's Mythbusters Episode 46

Group project advised by Professor David Wallace

The Catsup Crapper (2005)

Design of a catsup bottle that rollerskates to a plate and dispenses catsup

First place recipient in the first annual MIT Unuseless Competition

Featured on Tech TV, in the Boston Globe, About.com, and National Lampoons official website

Strumbone (2006)

An electric guitar that is played like a trumbone
Allows anyone to play guitar without a strong musical background
Prototyped and tested on PBS television show

Cross Products (2007)

Card game that promotes innovation
Players mix aspects of existing products to create new product concepts

Association Mapping (2007-Present)

Development of tools to allow designers to be better innovators
Study in connections between humor, surprise, incongruity, and innovation
Collaboration initiative between MIT and TU Delft, Netherlands
Advised by Prof. Paul Hekkert and Geke Ludden at the TU Delft Industrial Design StudioLab

The Enscribe Whiteboard Table (2005)

A conference table with removable whiteboard surface for group brainstorm
Group project for MIT Course 2.739J Product Design and Development
Collaboration with RISD School of Industrial Design

Scavenger Toy (2005)

Handheld scavenger hunt toy that overlays a virtual world onto a real world display screen
Design of packaging, content, theming, and interface
Group project for MIT Course CMS.610 Creative Industries

Thrill Ride Design

Pneumatic Capsule Pipeline Coaster (2003)

University of Central Florida undergraduate thesis on alternative forms of extreme thrill rides
Advised by Prof. Avelino Gonzalez (UCF) and Prof. Henry Liu of University of Missouri

Collar Coaster (2004)

New roller coaster concept incorporating thrill elements of a free-fall ride and standard steel coaster
University of Central Florida design project

Animatronic “Skaven” (2004)

Senior Design Project at University of Central Florida
Design and fabrication of full size animatronic mutant rodent for GamesWorkshop

Musical Theatre Guild

Cabaret (Summer 2007)

Assistant set design and build

Pippin (Fall 2007)

Publicity and graphic design

Teaching Experience

Course Instructor of 2.00b/SP.778 Toy Product Design (2005-Present)

This is a service learning course that introduces undergraduates to the product design process. Students work in teams with community and industry partners to design and prototype new toys.

Toys for inexpensive manufacture in Brazilian favelas (2007)

Collaboration with D-Lab Brazil and Cambridgeport Elementary

Toys to promote good dental hygiene (2006)

Collaboration with MIT Dental and Fletcher Maynard Academy

Toys for developmentally disabled children (2005)

Collaboration with The Learning Center in Waltham, MA

Teaching Assistantship

MIT Course 2.00b Solving Real Problems (2007)

Undergraduate course focusing on design process, estimation, and communication

Design of a no-turn composter, visual-aid device for the elderly, and a concrete mixer

MIT Course 2.744 Industrial Design (2006)

Graduate course focusing on product design prototyping techniques and user interaction

Design of special effects for an interactive show at the Spy Museum in Washington DC

MIT Course 2.009 Product Engineering Processes (2005)

Undergraduate senior design course focusing on the product design process

Design of agricultural related products

Project Advising and Mentoring

Undergraduate research advising (2007-Present)

Rapid fire foam ball shooter - Kashika Sharma BSME

Novel designs for toy night lights - Rebecca Smith BSME

MIT Course 2.009 Product Engineering Processes mentor

Design of a battery-free remote control (2007)

Design of a process for transforming plastic bottles into housing insulation and roofing (2007)

Design of manioc (cassava) grater for developing countries (2005)

Select Awards

Rohsenow Graduate Fellowship at the Massachusetts Institute of Technology (2004-2005)

Good Bostonian: featured article in the Weekly Dig for product design innovations (2007)

1st Place in MIT's First Annual Unuseless Competition for the Catsup Crapper (2005)

Title: The Orlando Grand Slam Master - Highest Ranked Slam Poet in Orlando (2003-2004)

Ranked 25th in the World Poetry Slam of 2004

20 Coolest People in Orlando 2004 (Axis Magazine November 2004; www.axismag.com)

Top Honors Graduate/Summa Cum Laude at UCF (2004)

Order of Pegasus - Highest award offered to a student at UCF (2004)

First Place in the Florida Junior Engineering and Technology Society Statewide Competition (2000)

First Degree Black Belt in Karate (1997)