

congratulations class of 2013



ASU® IRA A. FULTON SCHOOLS OF
engineering
ARIZONA STATE UNIVERSITY



The Starbucks Roast Spectrum
Find your own fact level of their and harmony

Refrainers
Rethink how you re-energize.

LEADERSHIP VOLUNTEER

Join the Society of Women Engineers

Meeting Dates:

- September 6
- October 4
- November 1

Don't miss out on the excitement!



Table with red tablecloth featuring a yellow gear logo and various flyers and brochures.

Water bottle on the left.

Starbucks cup on the right.

Handwritten notes and a pen on the table.

Feels great. Thanks, mom
dad and all my friends
who made my stay at ASU
memorable.

Hari A.

Thanks to my mother and sisters for all their support and encouragement.

Oluwaseyi A.

Thank you, Dad & Mom, for
all the support. I wouldn't
have done it with you :)

Naif A.

I'm really lucky to have
come this far, but I wouldn't
have done it without my
family and friends, the ones
I knew and the ones I made
here. Thanks <3

Abdulaziz A.

Thanks, Mom and Dad—I
wouldn't be here today
without your help.

Thomas A.

There may have never lived
a luckier kid. It's all about
God, family and friends—
I've had the best of each.

Cody A.



I love you Genevieve. I owe
you everything.

Scott A.

To my wonderful family,
you rock!

Joey A.

Thank you, Pati, Alana
and Jakey, for being my
inspiration, I love you! And
thanks to Dr. Saman and my
friends for all your support
during my studies!

Jacob A.

Thank you for all of
your support!

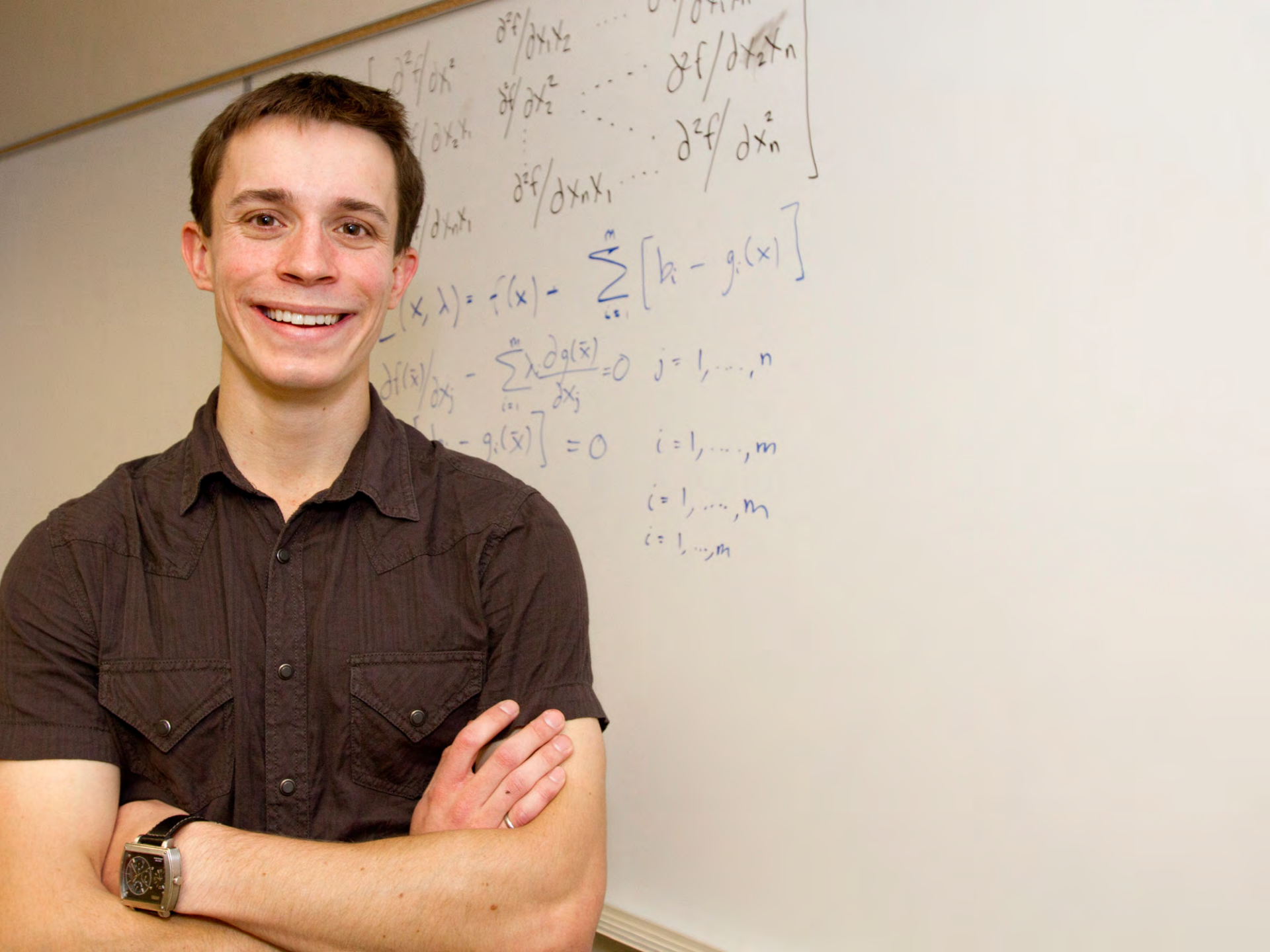
Gerardo A.

I would like to dedicate
this accomplishment to
both of my parents for their
continuous support. I would
have been lost without
them. I love you both!

Maria B.

ASU has been an
adventure! I want to thank
my family for always being
there for me! Now I'm ready
for this story to end and the
next journey to begin!

Souleymane B.



$$\left[\begin{array}{ccc} \frac{\partial^2 f}{\partial x_1^2} & \dots & \frac{\partial^2 f}{\partial x_1 \partial x_n} \\ \frac{\partial^2 f}{\partial x_2^2} & \dots & \frac{\partial^2 f}{\partial x_2 \partial x_n} \\ \vdots & \dots & \vdots \\ \frac{\partial^2 f}{\partial x_n^2} & \dots & \frac{\partial^2 f}{\partial x_n^2} \end{array} \right]$$

$$L(x, \lambda) = f(x) - \sum_{i=1}^m [\lambda_i - g_i(x)]$$

$$\frac{\partial f(\bar{x})}{\partial x_j} - \sum_{i=1}^m \lambda_i \frac{\partial g_i(\bar{x})}{\partial x_j} = 0 \quad j = 1, \dots, n$$

$$[\lambda_i - g_i(\bar{x})] = 0 \quad i = 1, \dots, m$$

$$i = 1, \dots, m$$

$$i = 1, \dots, m$$

I'd like to give thanks to my mom for supporting me, to my girlfriend for taking care of me, and to Dr. Chester for pushing me to do my best.

Matthew B.

Thank you, Sean, for always supporting me while I earned my M.S. degree and worked full-time. I love you and you helped me get here today!

Cynthia B.

Don, Phyllis, Dan and
Lindsay, thank you so much
for your support and love!
I am so blessed to have you
in my life. I love you all
so much!

Brandi B.

Love you, Grandma Rhode!
Thanks for all the help,
Squisha! Would not be here
without you!

Matthew B.

Only one word. Awesome.

Sai B.

Thank you family
and friends.

Jonathan B.

school for
engineering of matter,
transport and energy



It took me a long time to start this journey, but I am very proud that I have finally completed my Master of Engineering.

Heather B.

Thank you to my family and friends for your continued support and love along this crazy path called life!

Kyle B.

Thanks to my parents for making this possible, and thanks to my entire family for all their support.

Love you all,

Michael B.

Thank U God! U blessed
me! Now I am a 1st Gen
Master Graduate, and a
Proud War Veteran! THKS
for everyone that supported
me! I LUV U MY WIFE!!

Diego B.

Thank you to my wife, Lina,
for supporting me and our
kids as I finished school!

Thanks to my Mom and Dad
for your continuing love
and wisdom!

Ryan B.

Thank you Mom, Danielle,
Aunt Sue, Uncle Gene, and
my family and friends. You
have made my dream come
true. I love you all!

Craig B.

Thank you, Barbara and
Chara, for all of your support!
Calahan C.



#asugrad
share your experience
on twitter

I would like to thank all who
were able to attend my
convocation and celebrate
this amazing day with me.

Priyanka C.

Many thanks for my dad,
my mum and my girlfriend!
It is all because of your full
support during these years
that I can grow up rapidly.

Chen C.

Thank you, Mom, Dad & Dr.
Calhoun, for your continued
support & guidance! Not to
forget sis and Bhoo! It's just
the beginning though...

Nihanth C.

Tracy, thank you for your
love and support in the
transition from military to
civilian life. I could not have
done this without your help.
Love You!

John C.

Thank you, Carol, Matheus
and Benjamin, for putting
up with me and thanks to
Chandler Gilbert Community
College for getting me off to
a good start.

Jarrold C.

Thank you Mom, Dad, Selby,
Kaylee and Kristin! It's been
a great ride, but onward and
upward. Semper Fi!

Andrew C.



Time to be a
Sun Dev

AC

T
a
P
B
S

I wouldn't be where I am today if it wasn't for the love and support of my wonderful family, awesome friends and amazing hubby! Love you guys!

Shelby C.

I would like to thank my parents and advisor for the encouragement and support through tough times and my friends for making me smile in need.

Akash D.

To my family members and
friends: I LOVE YOU! I think
I'm definitely going to miss
this place. Good times...

Zachary D.

Took the scenic route, but
we finally made it. Thank
you Mom, Dad, Colin and
family! I love you guys.

Turner DeGrassi

Stephen D.

Thank you mom, dad,
brother, aunt and uncle for
supporting me and having
confidence in me.

Vaishnav D.

Thank you.

Anindita D.



As-imped robot grasping and catching
 Alex C. Cole, Mechanical Engineering & ECE
 School of Engineering
 Department of Electrical, Computer, and Energy

The purpose of this research is to use an adaptive and path-anticipating method to study and model human behavior during catching tasks, and to develop a robot that can learn to catch a ball.

Introduction:
 - Human catching is a complex task that requires the integration of visual, proprioceptive, and motor information.
 - This research aims to develop a robot that can learn to catch a ball by observing human behavior and using a model-based control strategy.

Methodology:
 - A robot was trained to catch a ball by observing a human expert.
 - The robot's control system was designed to learn the human's catching strategy and to execute it autonomously.

Results:
 - The robot successfully learned to catch a ball after observing a human expert.
 - The robot's catching performance was comparable to that of the human expert.

Conclusion:
 - This research demonstrates that a robot can learn to catch a ball by observing human behavior and using a model-based control strategy.

Arizona State University

A Novel Mechanism for Gait Rehabilitation
 Andre
 School for

Objective: The purpose of this research project was to investigate the effect of introducing variable surface stiffness to improve gait performance in individuals with lower limb impairments.

Background:
 A prototype for a unique treadmill system for investigating the effect of force stimulus on gait has been developed. The Variable Stiffness Treadmill system will make it possible to learn more about the human gait pattern by using variable stiffness control in experimental scenarios.

Methodology – Control:
 - The development of the control scheme. In order to achieve the desired gait pattern, the control system performance is optimized.
 - By gathering position and displacement data, the control system adjusts the stiffness at each point in time.

Current Challenges:
 - The design and control of the Variable Stiffness Treadmill system to accurately replicate the effects of the human gait characteristics on human gait characteristics.
 - The effects of stiffness on human gait characteristics, muscle activation, and nervous system.

Results:
 - After implementing the new control system, the Variable Stiffness Treadmill system demonstrated exceptional performance in replicating human gait characteristics.

Thank you, Dr. Thomas
Attard, for everything.

Kittinan D.

Thank you to all my supporters, especially my Mom, Roberta Diaz, who has been there for me all the way. Also a special thank you to my fiancée, Celina.

Carlos D.

Thanks, dad! I couldn't have
done it without you!

Julius E.

I am a Proud Engineer
and son of loving family.
Thank you Mama, Baba,
Seedo and Teta for all your
support! I love you all
very much!!

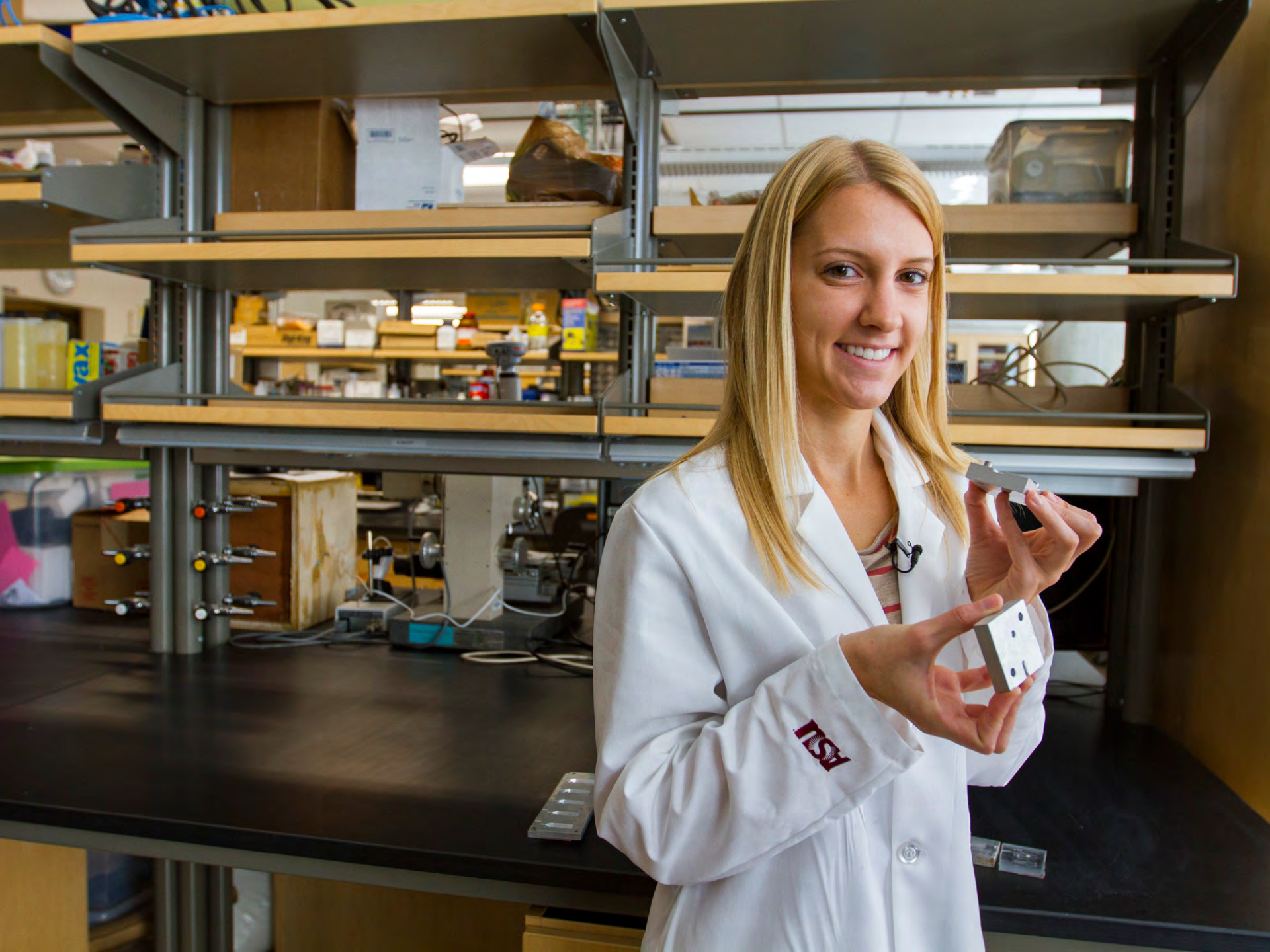
Saad E.

This was the hardest semester ever. If this shows up it means I actually graduated!! Thank you to my family for being so supportive.

Erica E.

Thank you for supporting
and sharing this experience
with me.

Tyler F.



Thank you to my dad, M
David, my mom, Diana, my
brothers, John and Mike, and
Lori. Thank you, God, for
giving me strength each day
to succeed.

Matthew F.

Thank you to my family for
all the support you have
given me to get me to
this day.

Jeffery F.

Although I'm recognized as
an individual today, I must
share the spotlight with
God, family and friends.
It took a team. I love you,
Mom and Dad!

Joshua F.

I want to thank my
professors, family, friends,
ASU and the wonderful
state of Arizona for making
my Ph.D. a memorable
experience!

Ameya G.

Special thanks to Edith,
Alma, Enrique, Melissa
and Alen. Thanks for your
support, prayers and belief
in me.

Oscar G.

To my amazing parents and sister, Salena, thank you for showing me the way and being my pillars of support. I am truly blessed, I love you all.

Sabrina G.



Thanks for all your sacrifice
and support!! Love you
Mom & Dad!!! -Keone

Anthony G.

I thank God, my family and my friends for getting me through all of college mostly unscathed.

Conner G.

Thank you to my wife and
parents for all of your love
and support. I love all of
my family: Yoonmin, Hailey,
Ryan, Mom and Dad.

Heeman H.

I would like to thank all my family and friends for standing by my side and supporting me throughout this journey.

Ali H.

Thank you to my family for
all that you did and still do.
Thank you baby Jesus for
giving me the courage to
not give up and helping me
reach my dream.

Mariana H.

To my family: my Mom, my sister Bella, my precious kids—Mendy, Levi, Chana and Avromel—thank you for all your support! I love you!

Devorah H.



graduation photos

[flickr.com/photos/
fultonengineering](https://www.flickr.com/photos/fultonengineering)

Thank you to my family who
have helped me through my
struggles and celebrated
my accomplishments.

Amada H.

Familia Higuera Inzunza, los amo! Karen Agosta, thanks for all your support and love! Ivan

Bernardo H.

Thanks for all of your love
and support, Mom and Dad!
I love you!

Kevin H.

To my family and friends,
thank you for all of the
support and encouragement.
I would not be here without
you. It's been a long road,
but we made it. XO

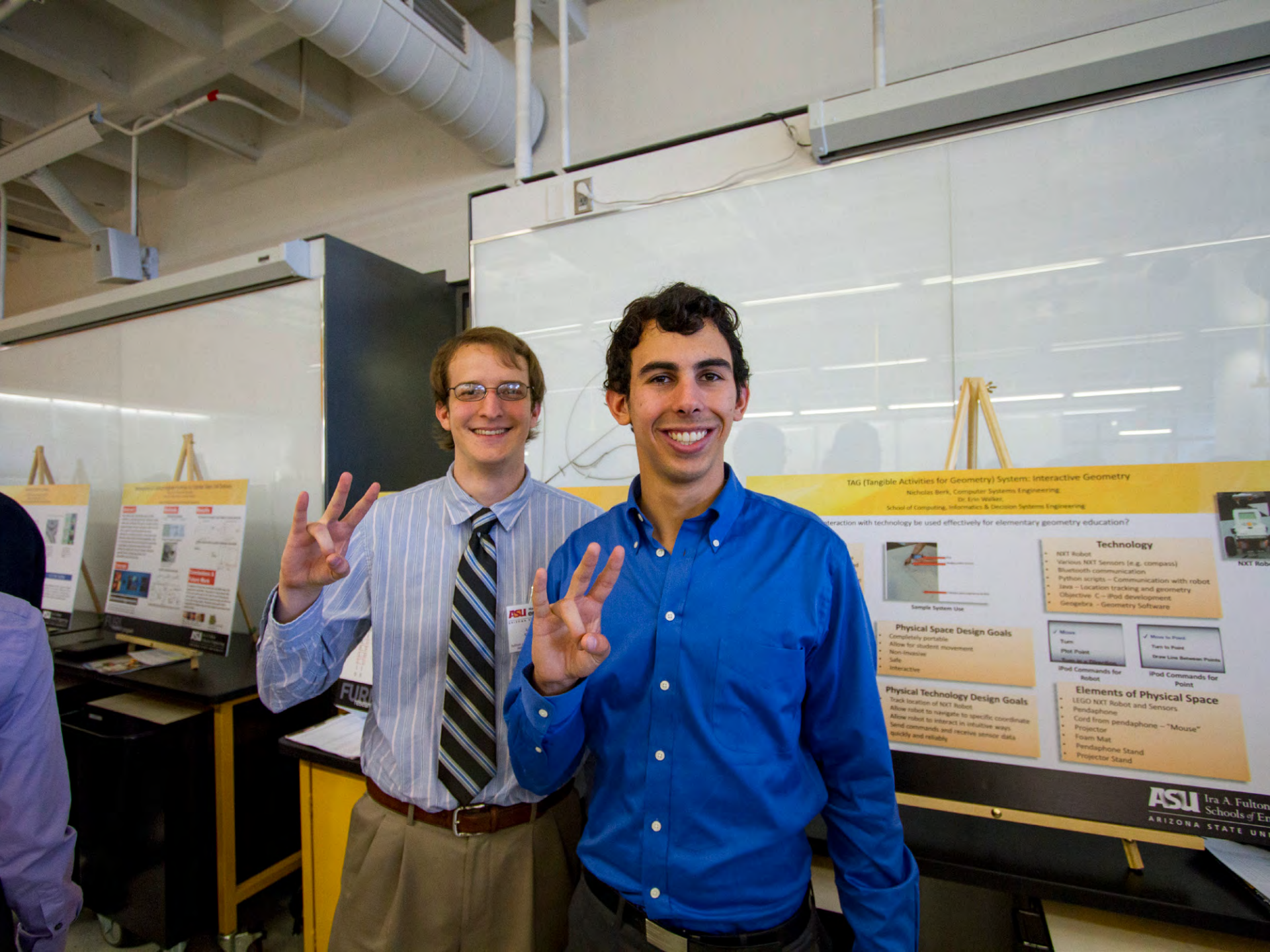
Shannon H.

Dear beloved family and friends, Terima kasih banyak (thank you very much) for all the support—looking forward to the bright future ahead! :)

Aprinda I.

I want to thank my family,
friends and SHPE Familia
for their all their support.
I am grateful for meeting
such wonderful people at
ASU. GO DEVILS!

Deyzi I.



TAG (Tangible Activities for Geometry) System: Interactive Geometry

Nicholas Berk, Computer Systems Engineering,
Dr. Eric Walker,
School of Computing, Informatics & Decision Systems Engineering

Interaction with technology can be used effectively for elementary geometry education?



Sample System Use

Physical Space Design Goals

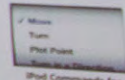
- Completely portable
- Allow for student movement
- Non-interactive
- Safe
- Interactive

Physical Technology Design Goals

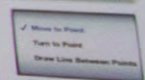
- Track location of NXT Robot
- Allow robot to navigate to specific coordinate
- Allow robot to interact in intuitive ways
- Send commands and receive sensor data quickly and reliably

Technology

- NXT Robot
- Various NXT Sensors (e.g. compass)
- Bluetooth communication
- Python scripts - Communication with robot
- Java - location tracking and geometry
- Objective-C - iPod development
- Geogebra - Geometry Software



iPod Commands for Robot



iPod Commands for Point

Elements of Physical Space

- LEGO NXT Robot and Sensors
- Pendaphone
- Cord from pendaphone - "Mouse"
- Projector
- Foam Mat
- Pendaphone Stand
- Projector Stand

I have grown so much during my time at ASU! I was given opportunities to excel both in the classroom and by participating in inspiring research.

Abbas J.

To all of my friends and family that have been there for me, thank you so much, I wouldn't be where I am without you.

Ian J.

I am really thankful to ASU.

Nitish J.

Thanks Appa, Amma and Sriram. This means a lot to me. I dedicate this success and happiness out to you and all those who helped me in achieve my M.S.

Shri J.

Thank you to all who helped
me, in one way or another,
realize my lifelong dream.

Brad J.

My sincere thanks to my dear family, professor and friends who always supported and helped me through my unforgettable three years of study and life at ASU.

Zhilei J.



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engineering
ARIZONA STATE UNIVERSITY
Panagiotis Artemiadis
Faculty Mentor
fullton undergraduate
research initiative FURI

A special thanks to my wife
Rebecca for this would
have not been possible!
Also to Shane and Gage for
understanding, daddy is
finally done :)

Christopher J.

Thanks to my family for
being so supportive of me
during my time at ASU,
and thank you to all of my
friends who kept me sane.
I love you all!

Kara J.

Thank you to my parents,
brother and friends for
supporting me in all my
endeavors. I could not have
done it without all of you.

Komal S.

I couldn't have done it
without my supportive,
loving family and friends.
Special shout out to my
outstanding fiancé,
Saffy Taffy.

Jason K.

Sincere thanks to my family,
friends and faculty for
always being there.

Rohit K.

I want to thank my mom and
dad and my lovely husband
for all they have done for
me.

Sheida K.

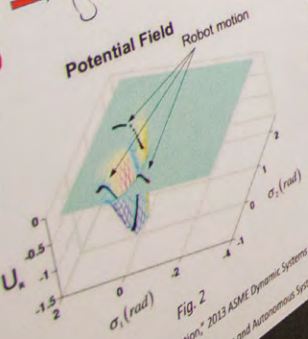
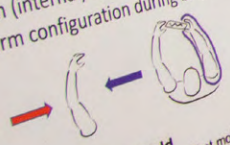
Human-Robot Bi-manual Manipulation

Benjamin Warren, Mechanical Engineering B.S.E.
Mentor: Dr. Panagiotis Artemiadis
ASU School of Engineering of Matter, Transport, and Energy

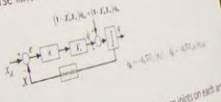
How do we model human-robot behavior during bimanual tasks?

Approach: Statistical inference of experimental data to build an associated density function (Fig 2) for joint configuration

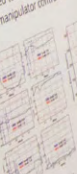
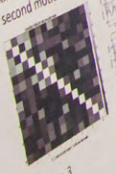
Left arm configuration through: σ_l (internal) configuration σ_r Right arm configuration during bi-manual task σ_{lr}



Implementation:
-Joint Velocities added into the robot's null space
-Inverse kinematics solved through controller



Results:
Correlation matrix shows large correlation between joints on each arm and also across arms left and right (Fig 3). The density functions can be used to better solve the inverse kinematic problem for robotic manipulator control shown in a two second motion phase (Fig 4)



ASU
Arizona State University
School of Engineering of Matter, Transport, and Energy

Benjamin Warren, "Bi-Manual Manipulation," 2013 ASME Dynamic Systems and Control Conference, *Journal of Robotics and Autonomous Systems*, 2013 (in Brown)



Thank you to all my Family and Friends. It was with their motivation and their support that I was able to succeed in this program and graduate.

Jasper K.

Thank you to my family for
all the support they have
given me. I could not have
done it without them.

Love you guys!

Justin K.

Thank you for your support.
You guys are awesome!

Curtis K.

Thank you to all of my family
and friends for their support
over the years and coming
out to celebrate with me!
I love you all!!

Bryan L.

I want to thank my family for
their endless support!

Love you!

Leticia L.

Thanks to all my friends,
family and especially
my wife, Jana, for being
supportive during my
academic career.

Kyle L.

Energy Dashboards and Their Influence on Human Behavior

Chelsea Mann, Civil (Sustainable) Engineering
Mentor: Dr. Kristen Parrish, Assistant Professor, SSEBE
School of Sustainable Engineering and the Built Environment

INTRODUCTION

What is an energy dashboard, and why is it important? To begin, one can consider any type of building: a commercial office, a residential home, or even a dormitory at Arizona State University. All of these structures use energy for various purposes; however, the relative energy consumption of each of these uses commonly goes unnoticed. This is where green building dashboards come into play. A green building dashboard is an interactive display allowing viewers to see real-time energy use in a specific building. They can display detailed data, such as energy being used for lighting, electronics, heating and cooling, and more. In addition to displaying energy use, some can even forecast utility costs and electric bills. The main purpose of the green building dashboard is to make viewers aware of the amount of energy being used within a building. However, how influential are they?



ASU's Campus Metabolism Dashboard

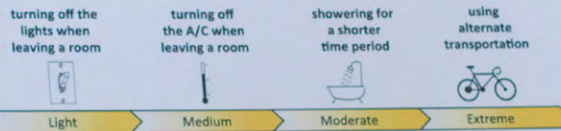


DPR Construction's Lucid Dashboard

ARIZONA STATE UNIVERSITY
SCHOOL OF SUSTAINABLE ENGINEERING AND THE BUILT ENVIRONMENT

This research focuses on the visual display and content of energy dashboards, specifically determining which information best influences energy-saving behaviors. The primary focus was ASU's energy dashboard, Campus Metabolism. In particular this project asked ASU students to self-report how likely they were to change their daily behaviors based on the information displayed in Campus Metabolism compared to another green building dashboard.

campus voluntarily took a 30 question survey. They first calibrated their baseline energy behavior in terms of daily activities that had minimal impact to the individual. Behaviors ranged from minimal impact to the individual to significant impact to the individual, and are shown below:

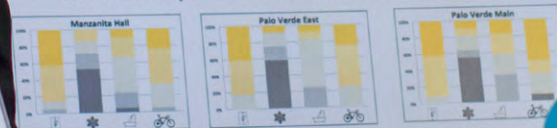


Screen shots from Campus Metabolism in terms of the likelihood of the image prompting behavioral change. For comparison, the respondents also self-reported their likelihood of behavior change based on images from another energy dashboard: DPR's Lucid dashboard.

- 4 DORMS
- barrett, the honors college
- manzanita hall
- palo verde main
- palo verde east

do you know what campus metabolism is?

How often do you do the following four actions?



On a scale from 1-10, rate each dashboard's visual appeal.

VISUAL APPEAL



Results of visually-appealing energy dashboards reported they were more likely to use the dashboard visually appealing and this survey provided insight into how to design dashboards that promote more energy-efficient behaviors.

I want to appreciate my wife and parents for their love, guidance and unwavering support. It's a special dedication to our first son, Allan.

Haojun L.

Thanks for the support
family; I couldn't have done
it without you.

John M.

Thanks a lot to my parents, Meena and Premnath, for providing me complete support to pursue my master's degree. Thanks to all my friends and well wishers.

Karthik P.

Thank you to my friends
and family for their love and
support, especially mom,
dad and Andrew.

I could not have done it
without you. Love,

Anna M.

Mama and Papa, I am
forever grateful for you
both. Know how much I
appreciate everything you
have done for me! Love you
too much, Chels

Chelsea M.

Love and thanks to all my
friends and family, Mochi,
Nekobasu and Muffin.

Brandon M.

Thanks for all the support!
Mom and Dad, I love you!

Krista M.



don't forget to write
fulcircle.asu.edu
news for alumni and friends

I express my sincere
gratitude to Dr. Andreas
Spanias, my dissertation
advisor, for his continuous
guidance and patience.

Steven M.

I could not have
accomplished all that I have
without the continued love
and support from my family.

Myles M.

Nethra Muniyappa, if it was not you then it would not have been me here today.

Thank you! Thank you Appa, Amma (Parents). Thanks Bhava (Nagaraj Gowda).

Mahesh M.

Anne, Baba Sizleri cok
ozledim Hersey Sizin
Sayenizde and my Brother
Tesekkurler

Serkan M.

I want to thank my family,
friends and most importantly
my parents for standing
by me through the tough
times; without their support
I wouldn't be here.

Mehul N.

Janet, thank you for lifting me beyond my belief. We can look out together now until you catch your breath and start climbing again!

Jon O.

Thanks Mom, Dad, Baba,
Papa and Gramps for your
support! Love you guys!!!

Nicholas O.



ROBERT
KURDSON & A
ARCHITECTS
1111 10TH AVENUE, SUITE 1000
DENVER, CO 80202

1401

A
B
C
D
E

hack the planet (for family)

Justin P.

On this special day I would like to thank my Parents, my Sister & my Brother-in-law along with all my friends. It was indeed a memorable journey.

Sabarish P.

Thanks to my family for all of
your support. I couldn't have
done it without you.

Alen P.

Hoy es un día muy especial para mí. Gracias familia y amigos por estar aquí. Today is a very special day for me. Thank you all for being here with me.

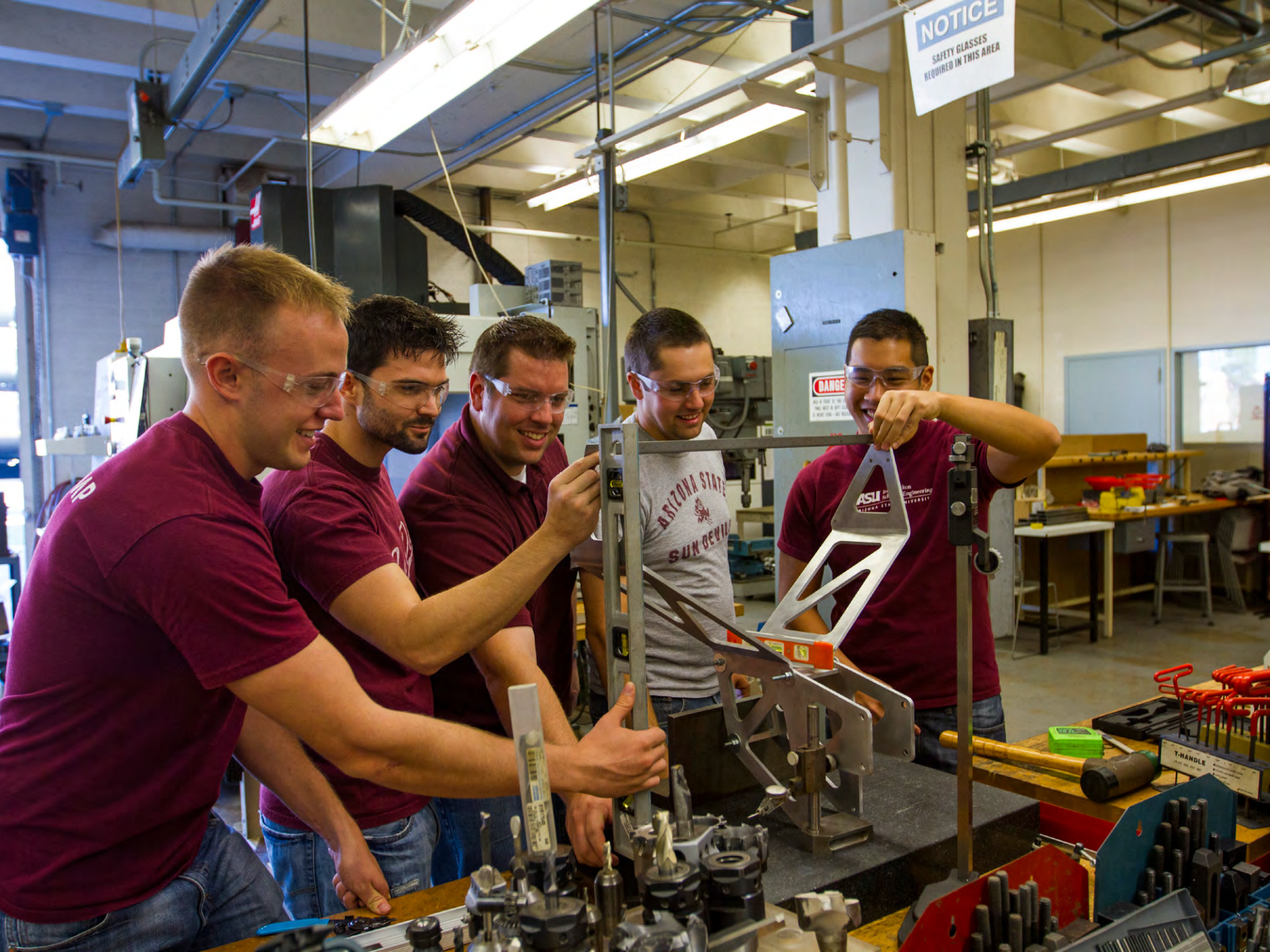
Aleida P.

Mama & Cody, thank you
for always encouraging
me when times got rough
managing both school and
work & telling me to always
reach for the stars. Love
you,

Laura P.

It's been fun, and I'm
looking forward to the next
chapter of my life.

Daniel P.



NOTICE
SAFETY GLASSES
REQUIRED IN THIS AREA

DANGER

ARIZONA STATE
UNIVERSITY
SUN DEVIL

ASU
Engineering
UNIVERSITY

T-HANDLE

Thank you mom, dad, sister
and friends :)

Sathishkumar P.

Thank you, mom and dad,
for all the help and advice
you have given me over
these past four years.

Ross P.

ASU, you're the best! I am going to miss biking around. Thank you for creating a wonderful experience in my life. Love & hugs to my family and friends.

Deepta R.

I did it!!

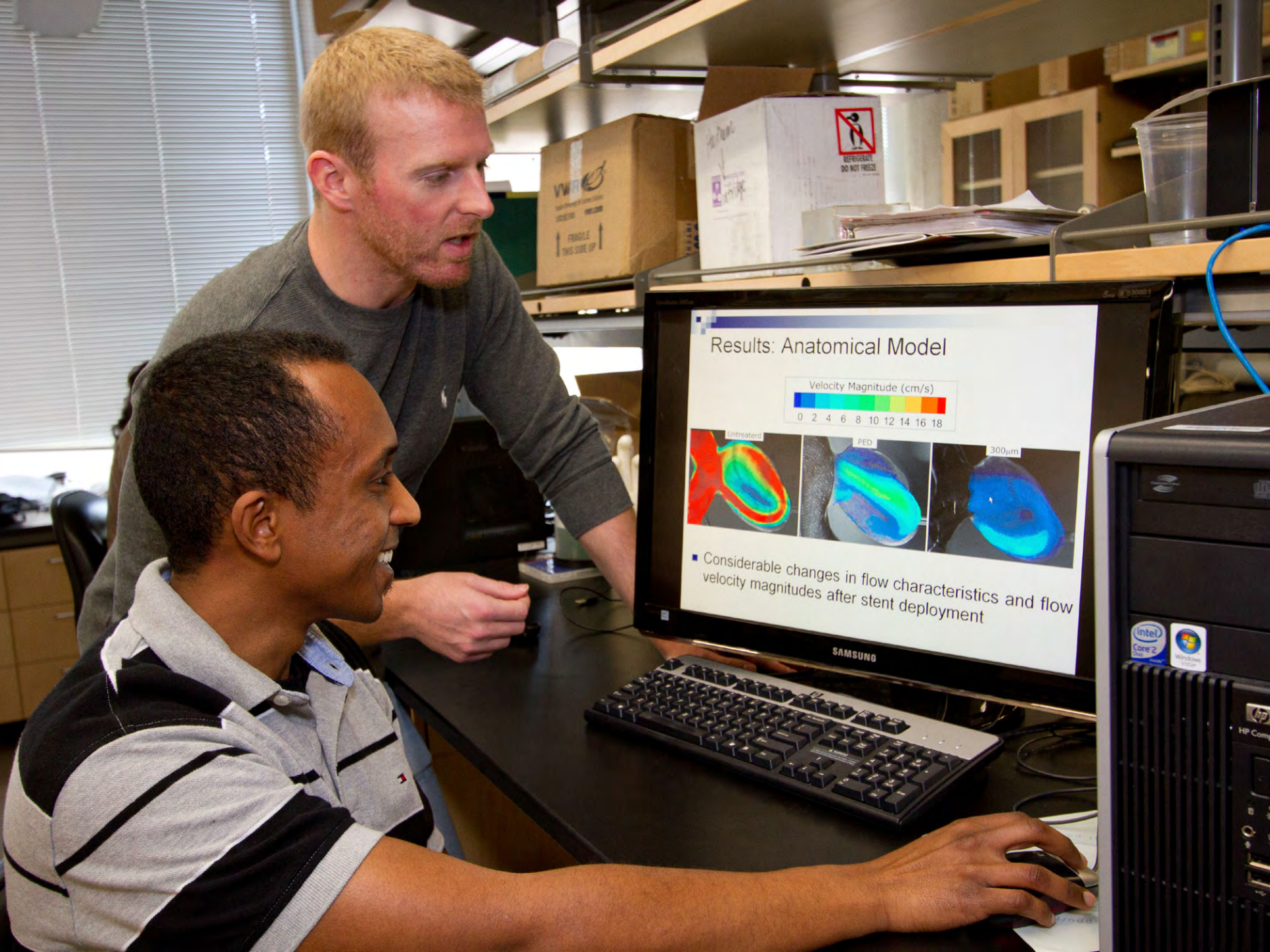
Shiny R.

To my family, thank you for
your support! SAY IT WITH
YOUR CHEST!

Eddy R.

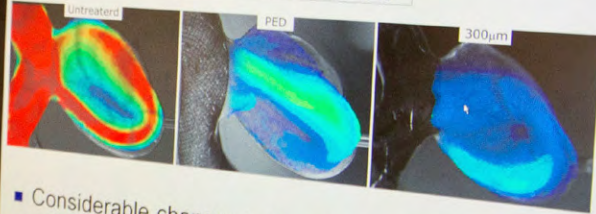
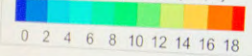
Este momento tan especial
se la dedico a mi familia y
amistades que han estado
comigo. Los quiero mucho
aunque no los mire seguido.
:)

Edna R.



Results: Anatomical Model

Velocity Magnitude (cm/s)



- Considerable changes in flow characteristics and flow velocity magnitudes after stent deployment

Thank you, mom, for paying
for school!!!

Rami R.

Thank you, mom & dad, for your encouragement and support. A special note of thanks to my wife for believing in me and being my friend.

Tathagata R.

I want to thank my wife,
Becky, without her love and
support I would have never
made it this far.

Kevin R.

It has been a long struggle through my undergraduate years. Thanks, friends and family, for supporting me through all the hard times. I love you all.

Angela R.

Thank you for your support
throughout my college
career. Today is the day!

Love,

Brittney R.

A heartfelt thanks to
Charles and Janet Alderete
and Michael Richter for all
your love and support!

Lanae R.

0: NON-URGENT

1: URGENT

$$P = \begin{matrix} & 0 & 1 \\ 0 & \frac{4}{5} & \frac{1}{5} \\ 1 & \frac{3}{4} & \frac{1}{4} \end{matrix}$$

$$\pi_0 = \frac{4}{5}\pi_0 + \frac{3}{4}\pi_1$$

$$\pi_1 = \frac{1}{5}\pi_0 + \frac{1}{4}\pi_1$$

$$\pi_0 + \pi_1 = 1$$

$$0 = \frac{4}{5}\pi_0 - 1\pi_0 + \frac{3}{4}\pi_1$$
$$= -\frac{1}{5}\pi_0 + \frac{3}{4}\pi_1 \quad (1)$$

$$0 = \frac{1}{5}\pi_0 + \frac{1}{4}\pi_1 - 1\pi_1$$
$$= \frac{1}{5}\pi_0 - \frac{3}{4}\pi_1 \quad (2)$$

$$1\pi_0 + 1\pi_1 = 1 \quad (3)$$

$$\begin{bmatrix} -\frac{1}{5} & \frac{3}{4} \\ \frac{1}{5} & -\frac{3}{4} \\ 1 & 1 \end{bmatrix} \begin{bmatrix} \pi_0 \\ \pi_1 \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}$$

$$\begin{bmatrix} \pi_0 \\ \pi_1 \end{bmatrix} = \begin{bmatrix} \frac{15}{14} \\ \frac{1}{14} \end{bmatrix} \approx \begin{bmatrix} 0.789 \\ 0.211 \end{bmatrix} \rightarrow 21\% \text{ OF PATIENTS ARE URGENT}$$



To my family & friends—
thank you for your
continuous support and
love! I couldn't have done
this without any of you!
Thank you for being here!

Whitney R.

Gracias a mi querida familia,
my best friends, SHPE
familia, and mentors por
todas las oportunidades
and support you have given
me todos estos años!

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and support!

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and support throughout my
degree. I love you both
very much!

John R.

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play some hurling!

Malachy R.

Thank you to my mom, my wife, my family and friends for all the love, support and encouragement. Couldn't have done it without you. Los quiero mucho.

Edwin S.



graduation photos

[flickr.com/photos/
fultonengineering](https://www.flickr.com/photos/fultonengineering)

I would like to thank the
almighty, my parents,
brother and all those
who helped me make the
person who I am. I love you,
Aaammmyyyyye!

Sameer S.

On this paradoxical day of
overwhelming happiness
and sadness I am glad to
have my loved ones right
by my side. Goodbye ASU.
Watch me soar...

Tom S.

Thank you to my family for
your love and support.
I love you all!

Tony S.

Thank you, Mom and Dad.
This belongs to you.

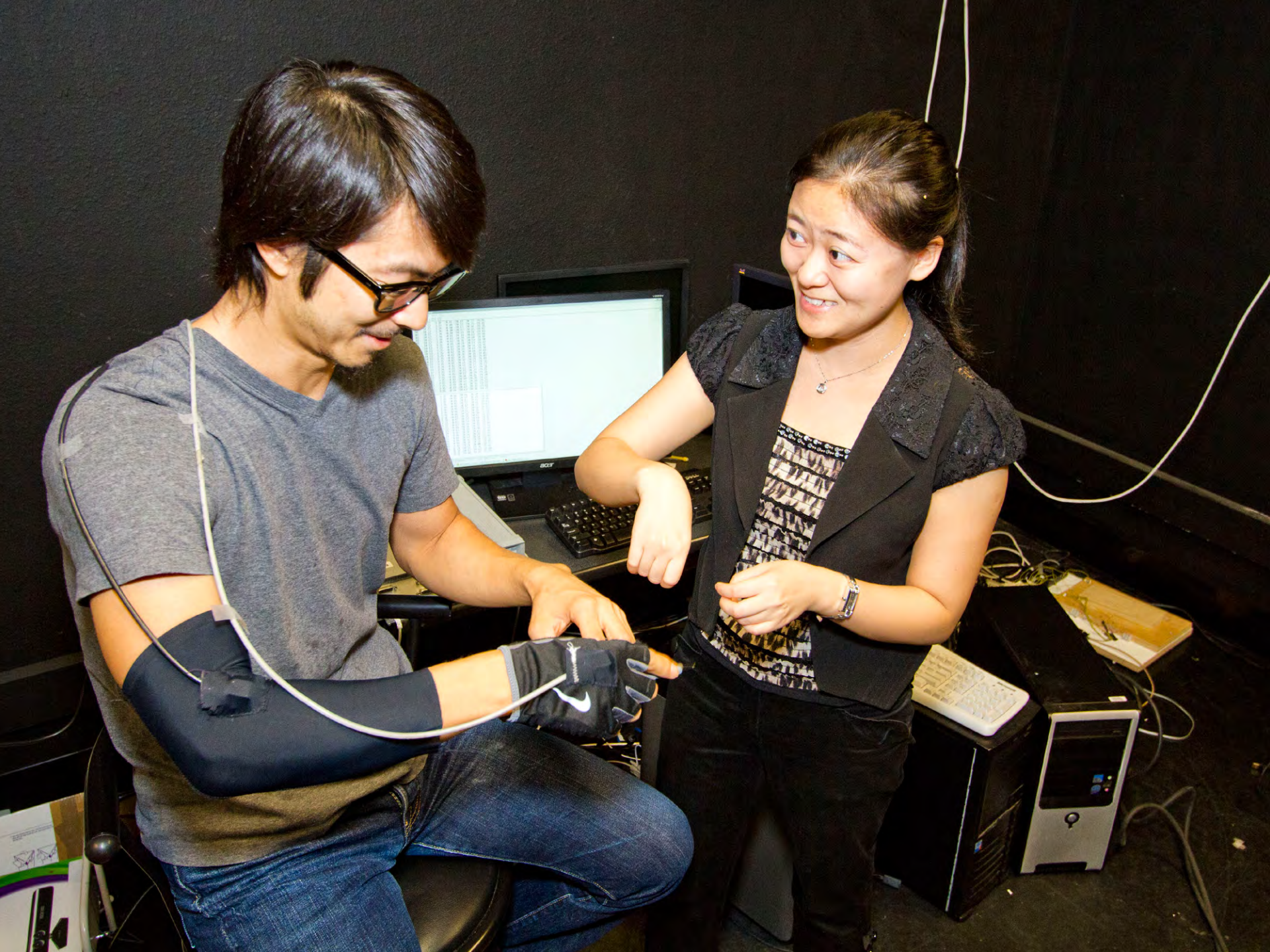
Rahul S.

This is for you, my dear
Wareesha. I pray to God
Almighty to see you getting
hooded one day.
Love you, Mom

Fariya S.

Thank you to my wonderful husband, Chris Draper, for always standing by me and supporting me as I did my research and thesis. Lots of love, Breezy.

Breeann S.



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Nanna, Chelli, Bava, Atta
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for making this experience
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Words can not express
how fortunate and grateful
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Eric S.

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for the support all these
years. This will be the step
closer for success!

Caesario S.



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research is all about.

Duyan T.

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support and belief in my
success. I couldn't have
done it without you.

Dustin T.

Thank you Thara, Miyuki,
Dhiren, my in-laws and the
Spirit of Science.

Dwarakanath R.

Thanks to my friends and family here who made it seem like a home away from home.

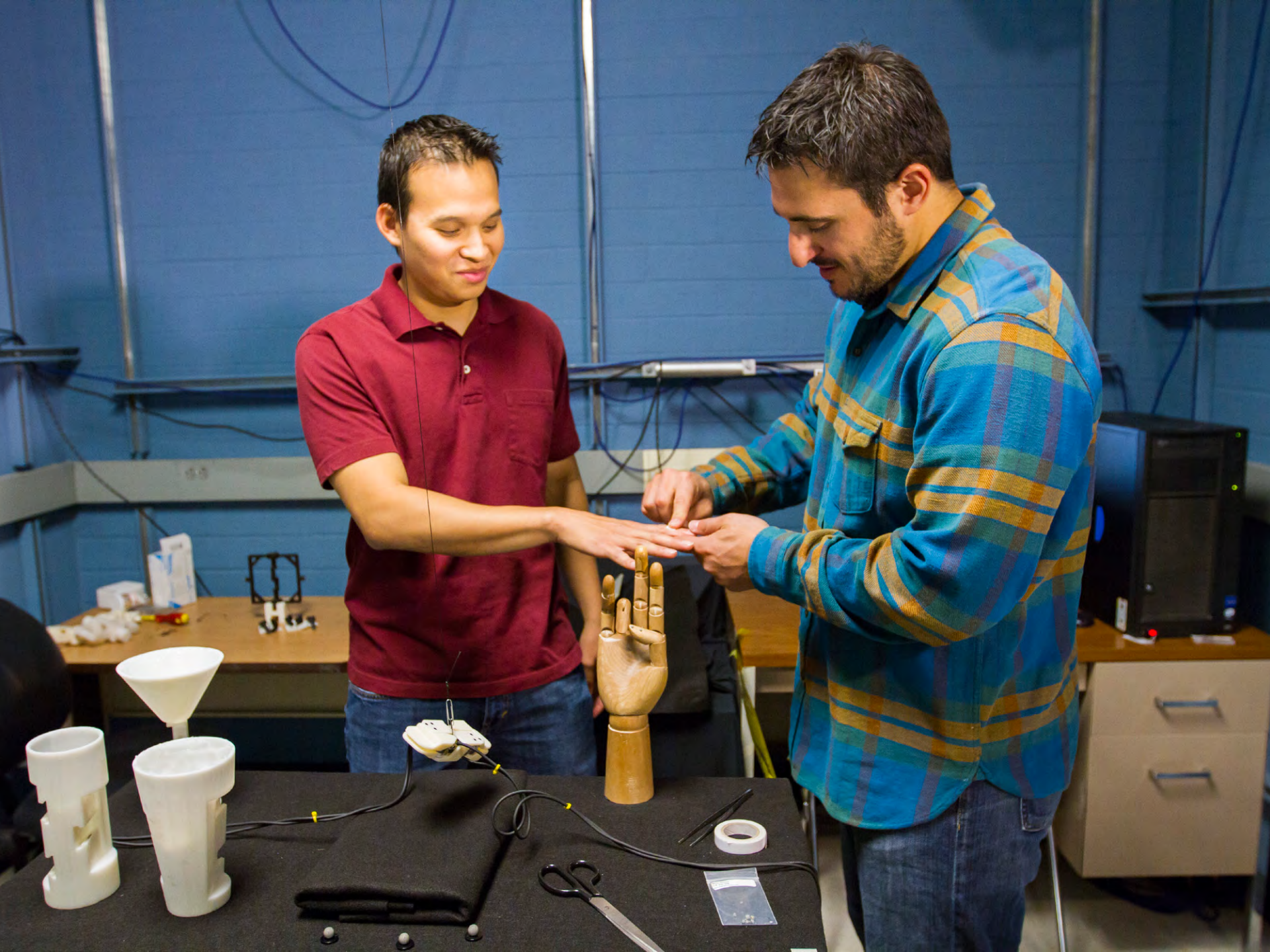
Anudeep V.

A big thank you to my
parents from the other side
of the world. I wouldn't be
here if it was not for their
physical, emotional and
spiritual support.

Sai V.

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and support and a special
thank you to my beautiful
wife for sticking it out to
the end.

Richard W.

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Cameron W.

Thanks for everyone who
supports me. I love you
all forever.

Xuan W.

I am so grateful for my mom
and dad.

Shuning Y.



#asugrad
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on twitter

Thank you to my family and friends who have supported me and kept me on the right track. Love you all!

Robert Z.

Thank you Mr. Zhang Yichun
and Ms. Yao Ziyang! Thank
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Zhijun!

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Hongyu Z.



NALGENE

DIRCKS

Handwashing instructions and safety icons on a white container.