

The Joint Meeting of

NOGLSTP's

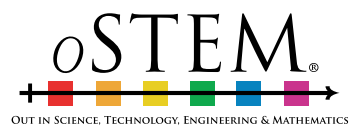
*Out to Innovate*<sup>TM</sup> 2014

and

oSTEM's

4th National Conference

Georgia Tech Hotel & Conference Center  
Atlanta, GA  
7-9 November 2014



WHAT I LIKE TO DO IS

MAKE A

SIGNIFICANT CHANGE

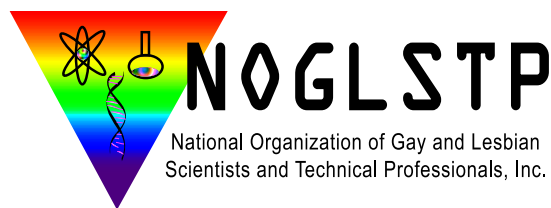
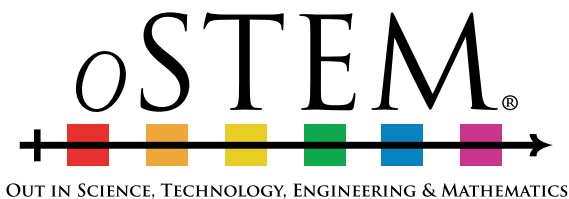
WORLD  
IN THE

FOR GOOD.

– Blake Irving  
GoDaddy Chief Executive Officer

GoDaddy is proud to sponsor the  
OSTEM 4th National Conference.





**Welcome, Students, Friends, and Colleagues!**

We are excited to see you in Atlanta, and we think you will enjoy all of the activities we have planned. It has been such a unique opportunity for us to coordinate this Joint Conference Event with NOGLSTP, strategizing together to bridge our communities for the weekend.

If you are new to oSTEM, then we look forward to meeting you. As a national society, oSTEM seeks to educate, empower, and engage a diverse community that will identify, address, and advocate for the needs of LGBTQ+ students in the STEM fields. As a national community, we value our members, we value students as peers and colleagues, and we value reciprocal mentorship.

We are sincerely grateful to every leader, presenter, and partner who has contributed so much time and effort to our collaborative event. All of the workshops have been selected by your peers, who worked tirelessly to select a broad range of topics from across the country. We hope you enjoy the programming, and we invite you to submit workshops next year, for every great idea you'll have to share.

During your conference stay, we encourage you to attend workshops, visit posters, and check out the exhibit hall – but more importantly, we hope you will have fun and take time to meet both students and professionals. It is through spaces like this that you will create distinctive collaborations which otherwise may not happen, and we look forward to fostering your future.

On behalf of everyone serving with oSTEM Incorporated, I would like to thank you for taking the time to attend and contribute to our community.

Eric Patridge  
President of oSTEM Incorporated

**Welcome, Out to Innovate™ and oSTEM National Conference Participants!**

How wonderful it is to welcome you all to NOGLSTP's third biennial Out to Innovate™ career summit for LGBTQ+ People in STEM and oSTEM's fourth Annual National Conference. The joining of these two conferences is an historic weekend bringing together two organizations working on common ground to explore the issues relevant to LGBTQ+ people in science, technology, engineering, Mathematics (STEM) and allied fields. This will be the largest gathering of students and career professionals in the LGBTQ+ community that I can remember, exceeding my wildest dreams conceived many years ago.

This event would not be possible without the enormous contributions of a united team of NOGLSTP and oSTEM volunteers who have been working diligently on this event for over a year. Each organization has brought this event to you through the generous support of our sponsors, distinguished speakers, and our host institution, Georgia Tech.

We hope that you enjoy this weekend of celebrate your career journey. We are here to support you in extending a hand as you move up the career ladder. Whether you are an undergrad, grad student, postdoc, academic or industry career professional, please take advantage of this opportunity to network, learn, and share your stories and issues. Look around, smile in the awareness that you are part of a vibrant and strong community that needs your talents and contributions to grow and thrive in today's increasing complex world.

It's an honor to present this program to our communities. And always, be OUT to Innovate™!

Rochelle Diamond  
Chair, NOGLSTP Board of Directors

**Table of Contents**

Welcome from Conference Organizers, Organizing Committee	Page 2	Meet the 2013/2014 Out to Innovate™ Scholars	Page 10
Pre-Conference Schedule	Page 2	Meet Our Featured Speakers	Page 11
Schedule at a Glance	Page 3	Meet the Workshop Presenters	Pages 13-33
Workshop Summaries by Day/Time	Pages 4-7	Student Posters	Pages 35-43
Gala Awards Out and Accomplished Panel	Page 8	About oSTEM, About NOGLSTP	Page 44
Meet the NOGLSTP Recognition Awards Recipients	Page 9	Workshop Schedule Grid Conference Floor Plan	Inside Back Cover Outside Back Cover

## Welcome from the Conference Organizers

It is such a pleasure to welcome all of you to Georgia and the beautiful city of Atlanta. NOGLSTP believes it is important to bring Out to Innovate™ to the Southeastern United States. Together with our oSTEM partners, We trust this 3rd Out to Innovate™ in combination with the 4th oSTEM National Meeting will be the biggest and best one yet. We have assembled an accomplished group of speakers and panelists; a varied program of workshops, seminars, and posters; as well as exhibitors and potential employers from across the country for you to explore.

As you explore this year's conference, be sure to take every opportunity to network with your fellow students and with professionals from industry, academe, and government. For our student attendees these individuals can share a wealth of experience about being "out" professionally in STEM. Professional attendees can gain insight into the needs, expectations, and desires of the next generation workforce. This is an exciting time to demonstrate your Science, Technology, Engineering, and Mathematics with PRIDE. Please enjoy yourself at this year's conference and take some time to also explore this dynamic and LGBTQ+-friendly city.

Chris Bannochie  
General Co-Chair

I am delighted to welcome you to the joint summit of oSTEM's 4th National Conference and NOGLSTP's Out To Innovate™ 2014. The generous support of the Georgia Institute of Technology, our sponsors, our presenters, and my fellow organizers have made this event extraordinary.

Use this day to celebrate your career journey and the opportunities that await you. You are surrounded by people who are all dedicated to professional excellence, excellence that includes diverse participation and contribution. Both the STEM and LGBTQ+ communities are proud of what they can bring and have brought to improving society. I want you to be proud of the part you will play in both communities: improving both, advancing both, and helping both to thrive.

It has been an honor to put this program together for you, and it is a joy to have you here. Enjoy the event and be inspired!

TJ Ronningen  
General Co-Chair

## Organizing Committee

**General Co-Chairs: Chris Bannochie, TJ Ronningen**

### Representing NOGLSTP

Rochelle Diamond  
Barbara Belmont  
John Burke  
David Crombeque  
Wolfgang Sigmund

### Representing Georgia Tech

Archie Ervin  
Julie Ancis  
Rigoberto Hernandez  
Emily Li

### Representing oSTEM

Eric Patridge  
Denise Conner  
AP Fritts  
Jeffrey Loh  
Adam Stoffel

### Program Selection Committee Members:

Denise Conner, R. Shawn Abrahams, Chris Bannochie, Robin Baidya, Barbara Belmont, Rochelle Diamond, Emily Li, TJ Ronningen

## Pre-Conference Schedule

<b>Friday November 7, 2014</b> <i>Note: Transportation to off-site activities will depart from the conference center</i>			
<b>Start</b>	<b>End</b>	<b>Activity</b>	<b>Location</b>
11:00 am	7:00 pm	Registration & Info Booth	2nd Floor Lobby
9:00 am	5:00 pm	World of Coke Tours	Downtown Atlanta
12:00 pm	4:00 pm	CDC Museum and Emergency Operations Center Tour	CDC Campus
1:00 pm	3:00 pm	Campus Tours #1	GATech Campus
3:00 pm	5:00 pm	Campus Tours #2	GATech Campus
5:00 pm	8:00 pm	Google Interview Workshop/Dinner <i>by invitation only</i>	Room 2, 6, 7
6:30 pm	9:00 pm	Speaker Reception/Dinner	Lounge

## Schedule at a Glance

<b>Saturday November 8, 2014</b>			
<b>Start</b>	<b>End</b>	<b>Activity</b>	<b>Location</b>
8:00 am	9:00 am	Registration & Continental Breakfast	2nd Floor Lobby
8:00 am	9:00 am	Identity Affinity Groups	Room 2,3,4,5,C,D,9
8:00 am	10:00 am	Exhibitor Setup	Rooms A & B
8:00 am	10:00 am	Poster setup	Room E
9:00 am	9:25 am	Welcome	Ballroom
9:25 am	9:45 am	Opening Plenary: Motivational Speaker Kei Koizumi	Ballroom
10:00 am	7:30 pm	Exhibitor Space Open	Rooms A & B
10:00 am	11:00 am	Workshop Session 1	Rooms 2,3,4,5,C,D,9
11:15 am	12:15 pm	Workshop Session 2	Rooms 2,3,4,5,C,D,9
12:30 pm	1:30 pm	Lunch	Ballroom
1:00 pm	1:45 pm	Keynote: Lynn Conway	Ballroom
2:00 pm	3:00 pm	Workshop Session 3	Rooms 2,3,4,5,C,D,9
3:10 pm	3:55 pm	Poster Judging	Room E
3:15 pm	3:45 pm	Break, Poster Judging	Rooms A & B
4:00 pm	5:00 pm	Workshop Session 4: Professionals	Rooms 2,3,4,5,C,D,9
4:00 pm	5:30 pm	oSTEM Membership Meeting	Ballroom
5:30 pm	7:30 pm	Reception featuring Exhibitors, Poster Session	Rooms A, B, E
7:30 pm	9:30 pm	Banquet & Recognition Awards	Ballroom

<b>Sunday November 9, 2014</b>			
<b>Start</b>	<b>End</b>	<b>Activity</b>	<b>Location</b>
8:00 am	9:00 am	Continental Breakfast	2nd Floor Lobby
8:00 am	9:00 am	Identity Affinity Groups	Rooms 2,3,4,5,C,D,9
8:00 am	9:00 am	Exhibitor Setup	Rooms A & B
9:00 am	9:15 am	Opening Remarks & Announcements	Ballroom
9:15 am	10:15 am	Out and Accomplished Panel	Ballroom
10:40am	11:40 am	Workshop Session 5A	Rooms 2,3,4,5,C,D
11:15 am	12:15 pm	Workshop Session 5B	Rooms 2,3,4,5,C,D
10:15 am	12:30 pm	Exhibitor Area Open & Staffed	Rooms A & B
10:15 am	12:30 pm	Recruiting Interviews	Room 9
12:30 pm	2:00 pm	Lunch	Ballroom
1:00 pm	1:45 pm	Keynote: Tam O'Shaughnessy	Ballroom
1:45 pm	2:00 pm	Closing Remarks	Ballroom
2:00 pm	4:00 pm	Recruiting Interviews	Room 9
2:00 pm	3:00 pm	NOGLSTP Membership Meeting	Room D
2:00 pm	4:00 pm	Open time for small group meetings and networking	



*Diversity Innovates*



*Science and Engineering with PRIDE*

## Workshop Summaries Saturday November 8 10:00 am

### **Importance of Gaining and Being Allies** (*Andrew Jancaric, David Kraemer*)

There are lots of reasons allies are key to creating a more inclusive world. But there are lots of reasons people—straight and LGBTQ+—don't step up for groups they're not a part of, including unawareness, fear, and paralysis. In this panel discussion, members of ALLchemie (BASF's employee resource group) will discuss engaging straight allies as well as being better allies to each other within the LGBT community.

### **Global STEM Research: Branching Beyond the United States** (*Arthur Fitzmaurice*)

As other nations are investing more in STEM research and development, it is imperative for U.S. scientists to engage globally. This program will teach students about international programs and funding opportunities available to them, particularly through the National Science Foundation, as well as search tools to identify additional opportunities in the future. There will also be some discussion about concerns for the LGBTQ+ community traveling and working abroad.

### **Mentorship Roundtable Discussion** (*Eric Patridge*)

This workshop is a roundtable discussion and safe space for current STEM professionals/mentors to discuss on-going and potential efforts to support students and campus groups. Discussion topics will include touchpoints about mentorship roles, professional-student relationships, event ideas, and possible corporate/academic relationships. Several case studies and models of leadership will be presented, but the session will primarily facilitate discussion about experiences, questions, and concerns.

### **Chapter Leadership Roundtable** (*Thalida Noel, Adam Stoffel*)

This workshop is a roundtable discussion and safe space for current and past chapter leaders to discuss on-going concerns regarding their organizations, members, or alumni. Current student leaders will have the opportunity to present timely and relevant concerns, while gaining feedback from other chapter leaders and alumni. The presenters will serve as a facilitators and have several topics prepared for additional discussion.

### **Flash Session 1** (*facilitated by Denise Conner*)

Four poster presenters have been invited to give 10 minute presentations of their poster topic. In this session, the following talks will be presented:

Analysis of Microglia in the Visual Cortex Acutely and Long Term After Early Life Alcohol Exposure	Nina Lutz
Tensegrity Robotics: Simulation, Design, and Control	Drew Sabelhaus
Understanding Type 2 Diabetes Through the Glucose Transporter and Pancreatic Beta Cell Glycosylation During Starvation	Christian Suarez
Nudge Software Development: Training Scientists in Ethical Decision-Making	Brent Allman

### **Why are we what we are?—The history of scientific sexuality research and its impacts** (*Kyle Simon*)

This program gives an overview of much of the scientific work done on LGBTQ+ individuals from the 1950's to the 2000's. This ranges from publishing books such as *Sexual Behavior in the Human Female* and *As Nature Made Him* to groundbreaking literature by researchers Simon LeVay and Dean Hamer. This program will also cover theories, concepts and effects that have all been purported to be major causes of sexual orientation. By piecing all of these events together in one timeline, we can begin to fully understand the impact that science has had on American society and, in particular, LGBTQ+ culture.

### **Being a Trans\* STEM Professional** (*Sam Brinton, Ells Long*)

One of the questions that arises repeatedly for trans\* students is what it's like to be a trans\* STEM professional. This discussion will focus on a variety of the challenges that trans\* people in STEM face, such as dressing professionally while being true to yourself and the timelines that transitions might take in the workplace. At the presenter's request, this session is only open to trans\* and non-binary people.

## Workshop Summaries Saturday November 8 11:15 am

### **Solving the Leadership Equation: LGBTQA + STEM = ?** *(Tony Keith)*

This workshop is an interactive exploration of identity that highlights the significance of intersectionality in our approaches to be effective agents of change. Through this workshop, participants will enhance their understanding of leadership and identity development frameworks that shape their capacity to promote inclusion in STEM and LGBTQ+ communities.

### **Creating a Network of Success: LGBTQ+ STEM Mentoring**

*(facilitated by Zach Speir, with Ana Carneiro, Chance Crompton, Nancy Gimble, Kyle Vey)*

This workshop will be a round-table discussion regarding how various types of LGBTQ+ mentoring supports students navigating one's STEM and LGBTQ+ identities openly. This panel will discuss developing and fostering supportive mentoring relationships, how mentoring impacts campus life and student research, and how mentoring expands networking, career, and professional opportunities. Panelists will describe organized STEM mentoring programs, including Point Foundation, oSTEM and NOGLSTP, and how to initiate one's own successful mentoring relationship.

### **LGBTQ+ in Your Professional Society**

*(facilitated by Barbara Belmont, with Todd Henry, Ells Long, Monica Plisch)*

This workshop will present an overview of LGBTQ+ visibility and inclusion in mainstream professional societies—in employment policies, governance, programming, and diversity initiatives. The prime illustration will share the methods and outcomes achieved through LGBTQ+ activism within American Chemical Society, with input from representatives of other professional societies such as the American Physical Society and the American Astronomical Society. Results from a brief survey of U.S. professional societies will be presented.

### **Opportunities at the National Institute of Health (NIH)** *(Sharon Milgram)*

This workshop and discussion will focus on how students can take advantage of opportunities offered by the NIH. The topics will include NIH internships, research opportunities, and how to prepare an NIH fellowship proposal.

### **Flash Session 2** *(facilitated by Denise Conner)*

Four poster presenters have been invited to give 10 minute presentations of their poster topic. In this session, the following talks will be presented:

Collective Mechanics of Epithelial Cells	Aaron F. Mertz
Detecting Cerenkov Radiation from Radioactive Sources using CCDs	Kim Luong
Characterization of Mature Biofilms in a Chloraminated Municipal Drinking Water Distribution System	Michael Waak
Total Reaction Cross Sections and the Emission of High-Energy Light Fragments in MCNP6 and CEM	Leslie Kerby

### **Life, Love, and Mental Health** *(Thalida Noel)*

This program will discuss the effects of mental health on college students who are part of the LGBTQ+ community, what they can do, and what resources are available to them through discussion and sharing of first-hand experiences. Participants will leave with the knowledge of how to find support during a time of need, as well as what they can do for a friend in need.

## Workshop Summaries Saturday November 8 2:00 pm

### **Each One, Reach One: People of Color in STEM Disciplines**

*(facilitated by Ricky Roberts, with Terry Demby, Stephanie Miller, Angelica Ross, Mike Smith)*

Out of 34 developed countries, American students rank 25th in math and 17th in science. Moreover, 60% of the new jobs that will open in the 21st century will require STEM skills possessed by only 20% of the current workforce, leaving the U.S. short as many as 3 million high-skilled workers in 2018. There's no doubt that the US is facing a STEM crisis – especially when we look at the current representation within STEM professions. Come hear our diverse panel talk about their own experiences within STEM fields and engage in a dialogue around how we can reach out to one another.

### **Out to Lead: Lessons from LGBTQ+ Leaders Working in STEM**

*(facilitated by Bradley Wilkinson, with Julie Ancis, Jennifer Hasler, Felix Hu, Manu Platt, Alex Wan, Deborah Williams)*

This workshop will share insights & techniques from LGBTQ+ leaders using an interactive, moderated panel format that explores the intersection of leadership, orientation, identity, expression & STEM. Attendees are encouraged to raise questions for these out leaders, and attendees will also have the opportunity to respond to panel questions using instant polling.

### **Trans 101** *(Ells Long)*

Learn the basics of gender and transgender identities through this interactive session for beginners. Attendees will leave with a solid understanding of terminology, challenges trans people face, and how they can support transgender and gender non-conforming members of their location chapters.

### **The Role of the Product Manager in Science and Technology Innovation** *(Kip Pettigrew, Matt Rhyner)*

This session will offer perspectives from two people with advanced STEM degrees on what it is like to transition to the world of marketing for a global science and technology firm. The session will focus on engaging the students and getting them to think about how to use their STEM background to market, develop and innovate a product.

### **The Cloud to the Rescue: Engaging Tech Students to Help Solve LGBTQ+ and STEM Problems** *(Francesc Flores)*

This session will teach students how to create simple apps to help solve LGBTQ+ and STEM problems. This session will seek to show students that apps have the power to help people organize, share information and make life easier. Regardless of major or programming experience level, all attendees should walk away from this session with an understanding of how Google's tools can help them in their academic work and beyond. Students that participated in Friday's hack-a-thon will be encouraged to share their experiences creating web apps.

### **Exceptional Resumes for LGBTQ+ STEM Professionals** *(Lisa Balbes)*

This presentation will discuss the expected format for an industrial resume, and how it differs by employment sector. Each section of the resume will be addressed, with specific tips for selling your skills most effectively. The differences between an industrial resume and an academic CV will be discussed. Potential issues and concerns specific to STEM practitioners will be addressed, as well as those of the LGBTQ+ community.

### **MATHulinites: An Intersectional Analysis of Racialized Masculinities in Mathematics Learning** *(Luis Leyva)*

Based on research findings from a phenomenological study in mathematics education, MATHulinites proposes a conceptual framework to explore mathematical learning identity development among first-year college students underrepresented in STEM fields in terms of race and gender. Implications for future mathematics teaching practice and STEM support program development in increasing equitable access to high-quality, welcoming mathematics learning opportunities for intersectionally-minoritized STEM students (including LGBTQ+ students of color) are addressed.



## Workshop Summaries Saturday November 8 4:00 pm

### **The Process of Obtaining Funding from the Federal Government** (*Jason Yovandich, Michael Nishimura, Donna Riley*)

Over \$34 billion in Federal funding was provided to academic, private, and small business researchers in 2013. This workshop will provide information about the process of obtaining external funding in the form of research grants from the Federal Agencies such as the National Institutes of Health (NIH) and National Science Foundation (NSF). This will be accomplished by discussing the relevant funding mechanisms, points to consider when preparing a grant application, the review process, the post review process, and grant management.

### **International Students and Partners** (*David Anderson, Kshitij Deshmukh*)

This panel discussion will focus on the experiences of STEM students and professionals navigating immigration concerns either for themselves or in a partnership. Discussion will include the impact of the Supreme Court's 2013 ruling on DOMA and resultant recognition of same-sex spouses in immigration applications on binational couples.

## Workshop Summaries Sunday November 9 10:40 am

### **Being LGBTQ+ in Corporate America**

(*facilitated by Bill Hendrix, with Chris Bannochie, Denise Conner, David Kraemer, Amy Martinez, Ron Lewis*)

This workshop will present a moderated discussion among panelists and the audience focused on the experience of LGBTQ+ people in corporate America. Topics will include: recognizing/identifying a supportive employer, benefits and challenges of being out in various corporate settings, how generational issues become important, actions individuals can take to improve a corporate environment, and perspectives on what to expect in the future.

### **There's Life after Transition** (*James Scott Pignatella*)

The majority of workplace discussions regarding transgender individuals tend to focus on the time of transition. This workshop evolves the current transgender workplace conversation to encompass a more holistic view—linking the transition discussion to a broader after-transition experience.

### **Strategy Focus to Lead and Advance Student Groups** (*Lance Freedman, Michelle Venables*)

This workshop will introduce the concept of a Strategy Focused Organization and apply the concept to LGBTQ+ Student Organizations. The presentation and exercises will reveal how to achieve aspirational goals through cause-and-effect sequences communicated and allocated to group members, driven and tracked to completion. Specific strategy elements around delivering results, building effective relationships, and shaping the future will be reviewed.

## Workshop Summaries Sunday November 9 11:15 am

### **Research About the LGBTQ+ STEM Community** (*Donna Riley*)

What is the current landscape of research about LGBTQ+ individuals in STEM? What questions have been pursued so far, and where are knowledge gaps most critical? What methodologies are most appropriate? How has this research been funded in the past, and how might it fit with funding priorities for underrepresented groups in STEM?

### **Identifying Challenges and Developing Best Practices for LGBTQ+ Graduate and Postdoctoral Trainees in STEM** (*facilitated by Alberto Roca, with David Finger, William Lindstaedt, Adam Ward*)

This workshop will address issues pertaining to LGBTQ+ graduate and postdoctoral STEM trainees in order to help them advance in a STEM careers within institutions that may not understand their personal identity. It will highlight exemplary support programs, resources available at [www.MinorityPostdoc.org](http://www.MinorityPostdoc.org) as well as the National Postdoctoral Association and its collaboration with NOGLSTP. Audience participation will identify the unique issues that affect LGBTQ postdoctoral trainees that may impede career progression, productivity or cause the attrition of LGBTQ+ staff from STEM.

### **Succeeding at a Predominantly Undergraduate Institution (PUI)**

(*facilitated by Benny Chan, with Matthew Cathell, Suriza Vandersandt*)

Being at the same institution does not guarantee the same experience for the LGBTQ+ faculty members. We will give our perspectives from our respective departments, Mathematics and Statistics, Chemistry, and Technological Studies/Engineering. We will discuss the job search, the responsibilities, and struggles of being at a PUI. We will provide mentorship to young scientists who want to pursue a career at a PUI.

## **Saturday Evening Gala Awards Banquet**

*with remarks from*

Avril Haines, Deputy Director, Central Intelligence Agency

### **NOGLSTP *Out to Innovate*™ Scholars**

2013 undergrad: Mateo Williamson

2014 undergrad: Nathalie Lambrecht

2013 grad: Sam Brinton

2014 grad: Leslie Kerby

### **oSTEM Awards**

National STEM Service Award

Chapter Awards

### **NOGLSTP Recognition Awards**

Scientist of the Year: Nergis Mavalvala, Professor of Astrophysics, MIT  
Engineer of the Year: Christine Bland, Electronics Engineer, Lockheed Martin  
Educator of the Year: Tim Atherton, Professor of Physics, Tufts University

## **Sunday Morning Out and Accomplished: Featured Speakers Panel and Discussion**

*moderated by*

Dot Harris, Director, Office of Economic Impact and Diversity, U.S. Department of Energy

*featuring*

Lynn Conway, Professor Emerita, University of Michigan

Terry Demby, Flight Test Manager, Technical Operations, Lockheed Martin Aeronautics, Palmdale

Jason Grenfell-Gardner, President and CEO at IGI Laboratories

Donna Riley, Program Director for Engineering Education at the National Science Foundation;

Professor of Engineering Education, Virginia Tech

## Meet the NOGLSTP Recognition Awards Recipients

The NOGLSTP Recognition Awards were established as a means of identifying, honoring, and documenting the contributions of outstanding LGBTQ+ science, engineering, and technology professionals.

### LGBTQ+ Scientist of the Year: Nergis Mavalvala



The 2014 NOGLSTP Scientist of the Year, Nergis Mavalvala, is a Professor of Physics at MIT. Nergis Mavalvala received her Ph.D. in Physics from MIT in 1997, and a B.A. in Physics and Astronomy from Wellesley College in 1990. She is currently the Curtis and Kathleen Marble Professor of Astrophysics at the Massachusetts Institute of Technology. Prior to coming to MIT in 2000 to join the MIT LIGO Laboratory, she was a postdoctoral scholar and research scientist at Caltech, working on the Laser Interferometric Gravitational Wave Observatory (LIGO). She has been involved with LIGO since her early years in graduate school at MIT and her primary research has been in instrument development for interferometric gravitational-wave detection. Dr. Mavalvala's efforts in quantum metrological methods have earned her numerous accolades, including the 2013 Joseph F Keithley award for advancements in measurement science and a 2010 MacArthur Fellowship ("Genius Award"). In addition to her technical accomplishments, Dr. Mavalvala, a Pakistani born, out lesbian physicist, has a partner and young daughter. She is an inspiration for all minority scientists that proves that

there are no limits to what you can do just by being yourself.

### LGBTQ+ Engineer of the Year: Christine Bland



The 2014 NOGLSTP Engineer of the Year Award recipient is Rickie Christine Bland of Lockheed Martin. Christine Bland has a degree in engineering and has worked for Lockheed Martin for over 25 years. She is currently working on NASA's Orion program to create the next generation of space vehicles to take humankind to the Moon, and ultimately into deep space. Christine worked on many projects for Lockheed Martin in the Deep Space Exploration Group, including Stardust, Spitzer Infrared Space Telescope, Genesis, Odyssey Orbiter, Mars Reconnaissance Orbiter, GRAIL, and JUNO (Jupiter Orbiter). Christine's crowning career achievement to date is fault management electronics, originally built for the Mars Reconnaissance Orbiter and currently being used on numerous other space vehicles. Christine has also been an adjunct lecturer in the engineering department at Denver Technical College and she designed computer system process telemetry for astrophysics rockets at the University of Colorado. In 2011

Christine informed Lockheed Human Resources that she would complete the transition process to change her gender. Since that day, she has been a highly visible role model in the company, actively involved with the Lockheed Martin LGBT Forums at the corporate level. She has participated on multiple panels, including STEM (Science, Technology, Engineering, and Math) outreach at a number of universities. She is the Chair of the Lockheed Martin Transgender Council, delivering policy and procedure guidance and facilitating numerous on-the-job gender transitions, as well as co-Chair of the Leadership Forum workshop. She also served as the Vice-President for the Gender Identity Center of Colorado. Her leadership brought Lockheed Martin to become the first aerospace/defense company to recruit at transgender career fairs in Denver and other locations.

### LGBTQ+ Educator of the Year: Tim Atherton



The 2014 NOGLSTP Educator of the Year is Tim Atherton, an Assistant Professor of Physics at Tufts University. He completed his undergraduate degree in Theoretical Physics in 2003 at the University of Exeter in the United Kingdom, studying abroad at Central Michigan University. Tim received his Ph.D. in Physics in 2007 from the University of Exeter in the UK, where he studied frustration phenomena in liquid crystals as a member of the Electromagnetic Materials group with Professor Roy Sambles. He then spent two years as a postdoctoral scholar at Case Western Reserve University in the Rosenblatt group, contributing to a diverse range of projects from Rayleigh-Taylor instability to direct imaging of liquid crystalline order via the technique of optical nanotomography. He joined the faculty of Tufts University in the Department of Physics and Astronomy in Fall 2011. For the last three years, he's been working as a co-organizer of the national organization LGBT+Physicists ([www.lgbtphysicists.org](http://www.lgbtphysicists.org)) to improve the climate for sexual and gender minorities. Tim became an organizer shortly after the group was formed, and has contributed to many of the major projects undertaken by the group. Within Tufts, Tim has been a powerful advocate in support of LGBT students. He's the faculty advisor for the campus oSTEM group, and has played a key part in the growth of this

*continued on next page*

## LGBTQ+ Educator of the Year: Atherton, continued from previous page

organization by supporting the student leader and helping to recruit speakers for events. He has worked with the LGBT Center to help raise awareness of the needs of LGBT scientists among the student body, and recruited straight faculty to attend training sessions on inclusion. When the Physics Department was planning a new building, Tim raised the issue of gender neutral restrooms in a faculty meeting and they are now incorporated into the design. His commitment for inclusion extends beyond LGBT issues. He's also a strong supporter of the new Women in Physics group and has acted as mentor to the Society of Physics Students group. This willingness to engage and facilitate student networking has been a tremendous asset to his department, improving the learning community at Tufts. Tim is one of the champions within the department for physics education research-based teaching, including use of clickers, class discussion, pre-lecture quizzes ("flipped classroom") and lecture demonstrations. This style of pedagogy empowers students by placing them at the center of the classroom and allowing the course to adapt to more fully meet their needs. As a particularly collegial member of the faculty, he's also helped colleagues adapt these practices for their own classes, thus broadening their reach.

## Meet the 2013 and 2014 *Out to Innovate*™ Scholars

NOGLSTP established the *Out to Innovate*™ Scholarships for LGBTQ+ STEM Students, following NOGLSTP's inaugural *Out to Innovate*™ Career Summit in 2010. These scholarships are intended for undergraduate and graduate students pursuing degrees in science, technology, engineering, or mathematics programs who are either lesbian, gay, bisexual, transgender, queer or an active ally of the LGBTQ+ community. The scholarships are designed to promote academic excellence and increased visibility of talented LGBTQ+ students in STEM careers. The 2013 and 2014 *Out to Innovate*™ Scholarships were funded by a Motorola Solutions Innovation Generation grant, providing \$5000 to each recipient.



**Mateo Williamson**  
**2013 Undergraduate Scholar**

Mateo Williamson was a senior at University of Arizona, Tucson, and graduated this past June. Williamson is a pre-med student, and majored in microbiology and Spanish translation/interpretation. A native Arizonan, his dream is to become an LGBTQ-friendly

family physician for underserved populations in southern Arizona and especially along the U.S.-Mexican border. He actively works on both sides of the border to address social justice issues such as religious persecution of LGBTQ+ people, spiritual abuse and the devastation of faith-based conversion therapy, minority health disparities, and immigrant abuse. Williamson also attends the Catholic Newman Center at the University of Arizona, Tucson, and has a fondness for Ignatian spirituality. He is involved with Catholics for Marriage Equality and Dignity USA, and dialogues with members of the Catholic hierarchy to advocate for the safety, respect and well-being of LGBTQ+ people in Catholic churches, schools and service agencies.



**Nathalie Lambrecht**  
**2014 Undergraduate Scholar**

Nathalie Lambrecht has just finished her major in Health Sciences this past semester at Saint Mary's College of California. Nathalie has worked on two research projects at St. Mary's and presented her research at the

AAAS Annual Conference in Boston, MA in February, 2013. She has received numerous academic awards including the Joseph P. McKenna first place summer research award and the Julie A. Pryde Award for Outstanding Scholarship as a Health Sciences Major. Nathalie was also a member of the St. Mary's Division I Women's Rowing Team, competing as an athlete for three years and student-coaching in her fourth year. Nathalie seeks to be an advocate for the LGBTQ+ community as an actively out lesbian on her college campus. She has also volunteered at Lyon-Martin Health Services, a clinic serving underinsured members of the LGBTQ+ community. Nathalie is currently working as an intern at Blood Systems Research Institute in San Francisco.



**Sam Brinton**  
**2013 Graduate Scholar**

Sam Brinton recently finished a master's degree in Nuclear Engineering and Technology Policy at Massachusetts Institute of Technology. Prior to MIT, he graduated from Kansas State University (KSU) at the top of his class. He also organized the first gay pride march in Manhattan, Kan. and challenged the City Commission to

add sexual orientation and gender identity as protected classes under its civil rights ordinance. An advocate for conversion therapy survivors, Brinton is working to end the persecution of youth who are lesbian, gay, bisexual, transgender, questioning, intersex, and asexual. He also co-founded NuclearPride, an organization dedicated to supporting the LGBTQ+ community in nuclear science and engineering, and is the newly elected student director of the American Nuclear Society as well as the first out member of its board of directors.



**Leslie Kerby**  
**2014 Graduate Scholar**

Leslie Kerby is a Ph.D. candidate in Nuclear Engineering at the University of Idaho. Growing up in a predominantly Mormon culture, she completed her BS in Physics in 1998 and then paused her science career to focus on raising her children. Following a divorce (and coming out) over a decade later, she re-entered science to support

herself and her five children. Her research is in applied nuclear physics. She has partnered with Los Alamos National Laboratory to upgrade parts of the spallation reaction models used within the transport code, MCNP6, for her dissertation. She was awarded the American Physical Society M. Hildred Blewett Fellowship in 2013-2014, one of only three female physicists across the US to be so recognized. In addition, she was a Roy G. Post Foundation Scholarship recipient in 2013, recently was chosen by the American Nuclear Society as a John and Muriel Landis Scholar (2014), and is a member of the US Delegation for the 2014 International Conference on Women in Physics.

## Meet the Our Featured Speakers



### Motivational Speaker: Kei Koizumi

*“You will find that what you love will take you places you never dreamed you’d go.” - Tony Kushner*

Assistant Director for Federal Research and Development at the White House Office of Science and Technology Policy (OSTP), Kei is known as a leading authority on federal science and technology funding and budget issues and is a frequent speaker to public groups and to the press. Before joining OSTP, he served as the Director of the R&D Budget and Policy Program at the American Association for the Advancement of Science (AAAS). Kei received his M.A. from the Center for International Science, Technology, and Public Policy program at George Washington University, and received his B.A. in Political Science and Economics from Boston University. He is a Fellow of the American Association for the Advancement of Science. Originally from Columbus, Ohio, Kei now lives in Washington, DC, with his husband Jeff Dutton.

### Keynote Speaker: Lynn Conway

*“If you want to change the future, start living as if you’re already there.”*

Lynn Conway is Professor of EECS, Emerita, at the University of Michigan. Lynn made foundational contributions to computer architecture at IBM during the 1960’s. Sadly, IBM fired her in 1968 when they learned she was transitioning. A gritty survivor, Lynn restarted her career in stealth mode. Rising rapidly through the ranks, she joined the famed Xerox Palo Alto Research Center in 1973. There she invented scalable VLSI design rules, co-authored the seminal text *Introduction to VLSI Systems* and pioneered in teaching the new chip design methods at MIT, thereby launching a worldwide revolution in microelectronics. As Assistant Director for Strategic Computing, she led DARPA’s 1980’s initiative to develop the technology base for modern intelligent weapons systems. In 1985 she joined the University of Michigan as Professor of EECS and Associate Dean of Engineering. Quietly coming out in 1999, Lynn went on to create a widely-read trans-advocacy website that has given hope and encouragement to transgender people all around the world. In 2012, she published a memoir of the VLSI revolution, finally revealing her role in that drama. Lynn is a Fellow of the IEEE, a Fellow of the Computer History Museum, holds two honorary doctorates, and is a Member of the National Academy of Engineering.



### Keynote Speaker: Tam O’Shaughnessy

*“Find some good friends—who let you be yourself—and do something great together!”*

Tam O’Shaughnessy is cofounder and Chief Executive Officer of Sally Ride Science—a science education company. Tam has been interested in science since she was a little girl. She grew up in California and was active in junior tennis. She went on to play on the women’s professional tennis tour from 1971 to 1974. After retiring from tennis, Tam was the founding publisher of the Women’s Tennis Association newsletter before going to college to study biology. Tam earned B.S. and M.S. degrees in biology from Georgia State University. While teaching high school and college biology, she became interested in how people learn and went on to earn her Ph.D. in school psychology from the University of California, Riverside. Tam has extensive experience cultivating girls’ and boys’ interest in math and science. Besides being a former science teacher, she is a professor emerita of school psychology, and an award-winning children’s science writer. In 2001, Tam, Sally Ride and three like-minded friends started Sally Ride Science with the goal of narrowing the gender gap in science. Today the company strives to spark the interest of all students – girls and boys of all cultural and socioeconomic backgrounds—in STEM education and careers.



## **BREAKING THROUGH EXPECTATIONS USING THE DBS TOOLS**

Own your success. Learn from some of the smartest minds in business. Tackle meaningful assignments. You can do all of this and more at Danaher, where the focus is always on solving problems and delivering success to millions of customers around the world. With five attractive segments and 50+ operating companies across 125 countries, Danaher offers you an opportunity to follow your passions while leveraging Danaher Business Systems (DBS) — our continually evolving set of tools around lean, growth and leadership — to achieve more for your career than you ever thought possible.

Learn how you can gain incomparable business know-how while reaping the rewards that are realized when great people are doing extraordinary things. Visit us online and apply today. [www.danaheru.com](http://www.danaheru.com)

## **KNOW BUSINESS. NO BOUNDARIES.**

**STRATEGIC SEGMENTS** TEST & MEASUREMENT • ENVIRONMENTAL • DENTAL  
LIFE SCIENCES & DIAGNOSTICS • INDUSTRIAL TECHNOLOGIES



## Meet the Presenters

*"To thine own self be true."*



### **Julie Ancis**

Dr. Julie Ancis serves as Associate Vice President for Institute Diversity at the Georgia Institute of Technology. Dr. Ancis provides operational leadership for strategic planning and assessment to achieve Georgia Tech's inclusive excellence vision and diversity and equity goals. She develops and leads campus collaborations to support Georgia Tech's goals for an inclusive campus community and enhanced campus climate. Prior to joining the Office of Institute Diversity, Dr. Ancis was a Professor in the Department of Counseling and Psychological Services at Georgia State University and held a previous faculty appointment at Old Dominion University. Dr. Ancis is an American Psychological Association Fellow. She received the 2012 Woman of the Year Award from the American Psychological Association's Society of Counseling Psychology, Section for the Advancement of Women and is Past -Chair of the Section. She has published and presented nationally and internationally in the area of racial and gender attitudes, multicultural competence, university climate, and women's legal experiences. She is the author of several books including *The Complete Women's Psychotherapy Treatment Planner*, published by Wiley, and *Culturally Responsive Interventions: Innovative Approaches to Working with Diverse Populations*, published by Taylor and Francis.



### **David A. Anderson**

*"It is interesting to notice how some minds seem almost to create themselves, springing up under every disadvantage, and working their solitary but irresistible way through a thousand obstacles" – Washington Irving*

David was a graduate student in biological oceanography in Puerto Rico when he met his husband, a chemical engineer at the same university. In 2011, his Chilean husband's VISA to enter the U.S. was rejected unexpectedly, forcing him to resign from graduate school and move to Chile. David worked full-time as a high school science teacher in Chile, and remotely as a project manager for a bioinformatics lab in Wisconsin in his free time. After DOMA was overturned in 2013, they got married in Argentina, and began planning their return to the U.S. Currently, David is a National Science Foundation Graduate Research Fellow in immunology at Washington University in St. Louis. When he is not in the lab, he is setting up his new home in anticipation for his husband's arrival sometime in the fall - no one said civil liberties were quick, but it sure is nice to have them.



### **Lisa M. Balbes**

Dr. Lisa M. Balbes earned her Ph.D. in organic chemistry from the University of North Carolina at Chapel Hill, and her undergraduate degrees in chemistry and psychology from Washington University in St. Louis. For the past 22 years, she has been a freelance consultant, providing technical writing and editing services to academia, industry, and government agencies. She has also been an American Chemical Society volunteer career consultant since 1993, providing career management advice and information to literally thousands of scientists, and is an internationally invited speaker on career management and development for scientists. She is the author of *"Nontraditional Careers for Chemists: New Formulas in Chemistry"*, published by Oxford University Press in 2007.



### **Christopher J. Bannochie**

*"If we knew what it was we were doing, it would not be called research, would it?" - Einstein*

Chris Bannochie is currently a Fellow Scientist at the Savannah River National Laboratory. He received a B.A. degree in Chemistry with a minor in Mathematics from St. John's University and a Ph.D. in Inorganic Chemistry from Texas A&M University under the Distinguished Professor Arthur E. Martell. He was a post-doctoral fellow under Professor Michael J. Welch at the Mallinckrodt Institute of Radiology of the Washington University School of Medicine in St. Louis. In 1991, he joined the Savannah River National Laboratory. From 1998 – 2001, he was a Visiting Scientist at Lawrence Livermore National Laboratory. His research area involves process development and analytical characterization of high- and low-level nuclear waste streams in support of vitrification and cementitious waste forms. Dr. Bannochie is a Fellow of the American Chemical Society (2009) and an inductee of Sigma Xi and Phi Lambda Upsilon. and has won numerous awards including the ACS Division of Professional Relations Louis J. Sacco Award (2014), the ACS E. Ann Nalley Southeastern Regional Award for Volunteer Service (2012), the NOGLSTP Walt Westman Award (2007), the ACS Stanley C. Israel Regional Award for Promoting Diversity in the Chemical Sciences (2005), and a George Westinghouse Signature Award (1992). Dr. Bannochie has served on several boards including those for Leadership Augusta, the Morris Museum of Art, the National Organization of Gay and Lesbian Scientists and Technical Professionals, Augusta Pride, the Open Chemistry Collaborative in Diversity Equity (OXIDE), and Georgia Equality.

# To us, science is personal.

At Genentech, we're passionate about finding solutions for people facing the world's most difficult-to-treat conditions. That's why we use cutting-edge science to create and deliver innovative medicines around the globe. To us, science is personal.

Find out more at [gene.com](http://gene.com)

Dan, patient

**Genentech**  
A Member of the Roche Group





### Barbara Belmont

*“Do. Or do not. There is no try.” - Yoda*

Holding a Professional Science Master’s in Analytical Chemistry from Illinois Institute of Technology, Barbara manages an independent lab in Southern California, using investigative analytical chemistry to solve quality problems for consumer products, coatings, and other manufactured products. She is also part-time chemistry faculty at California State University, Dominguez Hills, where she teaches Quantitative Analysis, mentors undergraduate research in analytical chemistry, and is involved with the campus LGBTQ+ Mentoring Program. She serves the American Chemical Society as LGBTQ+ representative to the ACS Diversity & Inclusion Advisory Board, is an Associate Member of the ACS Committee on Minority Affairs, and is an active leader of the ACS PROF Subdivision for Gay and Transgender Chemists and Allies. Barbara is a long-time NOGLSTP member and volunteer, and is part of Mentornet’s One-on-One mentoring community. In what very little leisure time she finds, Barbara enjoys reading Flavia de Luce mysteries, challenging her wife at word games, and making music.



### Samuel Brinton

Samuel is currently serving as the Clean Energy Fellow for Third Way, a think tank in DC concentrating on the moderate viewpoint. Samuel recently completed a dual masters degree program at Massachusetts Institute of Technology in Nuclear Engineering and the Technology and Policy Program. He is a graduate from Kansas State University with a B.S. in Mechanical and Nuclear Engineering and a B.A. in Vocal Music Performance and a minor in Chinese Language. His research interests are concentrated on nuclear fuel cycle system analysis with subtopics of interest including fuel cycle economics and dry cask nuclear waste storage analysis. Samuel has had internships at Harvard Kennedy School, Argonne National Laboratory, Idaho National Laboratory, and Dow Chemical Company in various projects relating to nuclear fuel cycle research and dynamic systems analysis. Samuel’s activism stretches from nuclear engineering education serving as the Student Director of the American Nuclear Society Board of Directors to ending conversion therapy across the country by speaking as a survivor of its horrors. From co-founding the NuclearPride organization to build an LGBT community in the nuclear science and engineering field to creating the Stand With Science campaign which united 10,000 students and allies from across the country to advocate for federal science and engineering research funding, Samuel is always ready to build a space for conversation. When not walking the halls of Congress on a quest, Sam enjoys watching the K-State Wildcats and running along the Charles River on a sunny day in Boston.



### Ana Carneiro

Ana Carneiro is an Assistant Professor at the Department of Pharmacology at Vanderbilt University Medical Center. She attended the Federal University of Minas Gerais (UFMG) in Brazil for her Bachelors in Biology with an emphasis in Biochemistry and Immunology. In 2000, she was awarded a Sandwich Fellowship from the Brazilian Ministry of Education that allowed her to spend a year in Marc Caron’s laboratory at Duke University. Upon her return to Brazil, she defended her Ph.D. in Biochemistry in 2002 from UFMG. She did her postgraduate training with Randy Blakely at Vanderbilt University Medical Center, Department of Pharmacology from 2003-2006. Her laboratory studies how conserved protein networks regulate cell-cell communication both in brain synapses and in the cardiovascular system. She became a Point mentor to Kyle Vey in 2011, and has since then mentored several undergraduate and graduate students at Vanderbilt. She is also the director of the Summer Undergraduate Research Fellowship at the Pharmacology department.



### Matthew Cathell

*“Every one of us is, in the cosmic perspective, precious. If a human disagrees with you, let him live. In a hundred billion galaxies, you will not find another.” — Carl Sagan*

Matthew Cathell earned a bachelors degree in Chemistry at La Salle University in Philadelphia, where he also minored in English and History. He completed a Ph.D. in Materials Science and Engineering at Drexel University. Since 2008, Cathell has been an assistant professor in the Department of Technological Studies (part of the School of Engineering) at The College of New Jersey. This unique department trains future K-12 teachers, who possess an integrative understanding of each of the four STEM disciplines. Cathell teaches a variety of courses, including classes focused on mechanical design, biotechnology and environmental systems, and integrative STEM teaching methods. He has served as interim department chair. Cathell was honored to be selected by the TCNJ student body to delivery the 2013 commencement address. His research activity, which he conducts with a number of undergraduate collaborators, focuses on nanostructured biomaterials for filtration and remediation of contaminated water.

# RAYTHEON PEOPLE

## INNOVATION. DRIVEN BY DIVERSITY.

As one of the world's foremost technology leaders, Raytheon takes on some of the most difficult challenges imaginable. Meeting those challenges requires a diversity of talent, ideas, backgrounds, opinions and beliefs. Diversity helps our teams make better decisions, build stronger customer relationships and feel more inspired, supported and empowered. It is both a catalyst and an essential advantage to everything we do.



[Raytheon.com/careers](http://Raytheon.com/careers)

Connect with us:     

© 2014 Raytheon Company. All rights reserved. "Customer Success Is Our Mission" is a registered trademark of Raytheon Company. Raytheon is an equal opportunity, affirmative action employer and welcomes a wide diversity of applicants. U.S. citizenship and security clearance may be required.

# Raytheon

*Customer Success Is Our Mission*



### **Benny Chan**

*“Don’t be a baby about blowing stuff up.” Cava Lab Group Rules, Princeton University*

An Associate Professor of Chemistry at The College of New Jersey in Ewing, NJ, a predominantly undergraduate institution, Benny runs an active research program in the areas of pedagogy, crystallography, organometallics, and solid state materials including superconductivity, thermoelectrics, and magnetic materials. He teaches a variety of courses including General, Analytical, Inorganic, Materials, and Kitchen Chemistry. He graduated from The Pennsylvania State University in 2003 with a Ph.D. in Chemistry and did his post-doctoral studies at Colorado State University and Los Alamos National Laboratories.

He is active on campus including the Director of Undergraduate Research, Promotion and Tenure Committee, the Diversity Committee, and Advisor for the award winning Student Chemist Association. He has obtained over \$1.5 million in funding for research, equipment, and programs to increase persistence and diversity in science. He volunteers for the American Chemical Society through the Committee on Minority Affairs, the Division of Professional Relations, and the Undergraduate Taskforce. His professional activities can be followed on twitter @drbennyc. In their spare time, Benny and his husband, Kerry, enjoy traveling, the beach, the gym, motorcycles, popular culture, Provincetown Bear Week, and cocktails with friends.



### **Denise Conner**

*“Never underestimate your colleagues because they happen to be students” - Christian Mattheis*

Denise Conner is a chemist working for DuPont Titanium Technologies. She supports research and offering development in pigmented plastics through a mixture of routine analysis and analytical development. She studied polymer chemistry and biochemistry in the graduate program of the Department of Chemistry at Penn State University and focused on inorganic chemistry for her undergraduate training at University of Delaware. While at Penn State, she co-founded oSTEM @ Penn State, co-chaired the LGBTQA Graduate Student Coalition, and served on the President’s Commission on LGBT Equity. Her service on the executive board of oSTEM Inc. has included program coordination, project management, and conference presentations on the intersection of LGBTQ+ and STEM communities. She is currently Vice President of Projects and Programs and has been Program Chair for the 2013 and 2014 oSTEM Annual Conferences. For fun, she sings in Delaware’s Rainbow Chorale, knits, and enjoys the outdoors.



### **Chance Crompton**

*“The greater the difficulty, the greater the glory.”*

J. Chance Crompton is a graduate of Harvey Mudd College (HMC) and is currently pursuing a PhD in Chemistry at the California Institute of Technology (Caltech), developing novel catalysts for energy applications. Chance has long been interested in LGBTQ+ activism, beginning with joining and becoming president of his high school Gay Straight Alliance. At HMC, Chance served on the dormitory life staff as mentor and also represented the LGBTQ+ community in PRISM, the college’s LGBTQ+ club. As President of PRISM, Chance led the club to the inaugural *Out to Innovate™* conference at the University of Southern California. At Caltech, Chance has continued his mentoring in the sciences, doing outreach through Solar Energies Activity Laboratory, a DOE funded program for high school students, and also representing the National Organization of Gay and Lesbian Scientists at a national conference concerning mentoring in the sciences.



### **Terry Demby**

Mr. Terry M. Demby is the Palmdale flight test manager for Technical Operations at Lockheed Martin Aeronautics, providing flight test instrumentation and data processing, and radio operations and frequency management support services. Previous positions include test and evaluation analysis and integration manager for the F-22 Engineering and Manufacturing Development (EMD) flight test program at Edwards AFB, California. He also served as propulsion flight test lead and lead airframe and avionics test analyst for the C-130J flight testing program at Lockheed Martin in Marietta, Georgia. Earlier, he led that F-16 propulsion flight test subgroup for F-16/F100/F110 engine test programs in Fort Worth, Texas.

Terry graduated from Indiana Institute of Technology with a BS in Aerospace Engineering. He began his professional career as a project engineer supporting a variety of engine test programs at the Naval Air Propulsion Center, Trenton, New Jersey. Later, he was employed as a propulsion flight-test engineer at Grumman Corporations’ flight test center in Calverton, New York. He is a lifetime member of the Society of Flight Test Engineers.



GLBT Engineer of the Year  
Christine Bland  
Electronics Engineer Senior Staff

# AN OPEN MIND OPENS DOORS.

Lockheed Martin has been breaking down barriers in technical innovation, advanced engineering, and workplace equality. We believe in an inclusive work environment that helps bring out everyone's full potential — where they can be their true selves. We are proud to honor Christine Bland, who was selected as the 2014 GLBT Engineer of the Year by the National Organization of Gay and Lesbian Scientists and Technical Professionals (NOGLSTP) and proud to sponsor the joint meeting of NOGLSTP's Out to Innovate 2014 and oSTEM's 4th National Conference.

Learn more at [lockheedmartin.com/diversity](http://lockheedmartin.com/diversity)

© 2014 LOCKHEED MARTIN CORPORATION VC377\_145

**LOCKHEED MARTIN**   
We never forget who we're working for®



### **Kshitij Deshmukh (KD)**

*“Be the change that you wish to see in the world.” – Mahatma Gandhi*

Kshitij (KD) is an Indian immigrant who came to the US in 2002 for graduate studies at Penn State, and has since earned two graduate degrees and climbed two steps in his career at CD-adapco. He has lived 12 years or 80% of his adult life in the US and he still continues to traverse the US immigration maze in hopes of a green card. KD is out and proud at his workplace in Oklahoma and is engaged with his community – at the open and affirming Parish Church of St. Jerome, at Oklahomans for Equality and with many international LGBTQ+ individuals facing hostile laws and society in various parts of the world. He strongly identifies with the struggles of immigrant LGBTQ+ and STEM LGBTQ+ identities, which have made him sensitive to intersectional identities that each of us cohabits. As he continues to learn the many ways his immigration uncertainties color his relationship with his US citizen partner of six years and his career choices, he also continues to strive to be authentic and truthful to his agglomerated multifaceted identity.



### **Rochelle Diamond**

*“Every day is a gift.”*

A member of the professional staff at the California Institute of Technology (Caltech), Rochelle specializes in flow cytometry/cell sorting and developmental immunology and has authored over 15 publications in these areas. Prior to her arrival at Caltech, she was a researcher at the University of Southern California School of Medicine, City of Hope Research Institute, and UCLA. She holds a B.A. in Biochemistry and Molecular Biology from UC Santa Barbara. Rochelle is currently Chair of the National Organization of Gay and Lesbian Scientists and Technical Professionals. Over the past 30 years, she has been a key organizer of workshops and scientific symposia to educate about topics relevant to those in the intersection of the scientific and LGBTQ+ communities. *Out to Innovate™* is Rochelle’s brain child, inspired by President Obama’s 2009 Educate to Innovate campaign. For her long term service to NOGLSTP, Rochelle was awarded NOGLSTP’s inaugural Walt Westman Recognition Award in 2004. In her leisure time, Rochelle enjoys participating in poker tournaments, spectator sports, train travel, crossword puzzles, and beating her wife at word games.



### **Archie Ervin**

Dr. Archie Ervin currently serves as Georgia Tech’s first vice president for Institute Diversity (VPID) and Chief Diversity Officer. He was first appointed to this position after a national search in 2009-2010 by Georgia Tech’s President Dr. G. P. “Bud” Peterson. Prior to arriving at Tech, Dr. Ervin served as Associate Provost and Chief Diversity Officer at the University of North Carolina at Chapel Hill from 2005 – 2011. In this capacity, Dr. Ervin led the strategic planning process that resulted in the implementation of UNC Chapel Hill’s first Diversity Strategic Plan (<http://www.unc.edu/diversity/baseline.pdf>).

In his role at Georgia Tech, Dr. Ervin provides Institute-level leadership and oversight for Georgia Tech’s diversity, equity, and inclusion agendas. He is a member of the President’s cabinet; Dr. Ervin helps to develop institutional priorities, policies, programs, and initiatives to advance Georgia Tech’s inclusive excellence agendas which include faculty, staff, and student diversity and inclusion. The vice president for Institute Diversity oversees the Georgia Tech ADVANCE Professorships which seeks to transform and enhance gender equity and diversity in the faculty and the Center for Women, Science, and Technology, which links the study of science and technology to those of gender, culture, and society. The VPID Office is also responsible for OMED Educational Services and the Office of Hispanic Initiatives—two support units that address academic transition and academic success (retention and graduation) for women, historically underserved, and low-income populations.

Dr. Ervin is recognized as a national leader in diversity in higher education. He has been a member of the Board of Directors of the National Association of Diversity Officers in Higher Education (NADOHE) since 2006, the nation’s leading association of diversity professionals in the U.S. In 2010, Dr. Ervin was elected as Second Vice President NADOHE. He is also the membership chair of NADOHE and under his leadership; NADOHE’s membership has increased for five consecutive years. Since arriving at Georgia Tech, Dr. Ervin has taken a leading role in the University System of Georgia’s Board of Regents’ Chief Diversity Officers Committee where he serves as Chair of the committee. In the fall of 2012, Dr. Ervin led the planning group that has sponsored the USG’s Diversity Summit for diversity officers throughout the USG for the past two years.

Dr. Ervin’s inclusive excellence agenda for the current year at Georgia Tech includes developing an equity program agenda with faculty leaders, implementing a climate assessment to develop an evidenced based strategic action agenda for diversity, equity and inclusion, and identifying collaborations that support greater inclusion in research and graduate education initiatives for all of Tech’s students.

DO  
COOL  
THINGS  
THAT  
MATTER

Google is excited to once again be a sponsor of the oSTEM National Conference!

We're dedicated to keeping Google a workplace for everyone. Our employee resource groups build and support communities throughout the company. For example, the Gayglers are comprised of LGBT Googlers and their allies. The Gayglers inform programs and policies, so that Google remains a supportive and inclusive place to work.

Interested in joining us? Google is currently hiring for our internship and University Graduate roles.



[GOOGLE.COM/CAREERS/STUDENTS](http://GOOGLE.COM/CAREERS/STUDENTS)



### David Finger

L. David Finger, Ph.D., is currently a Research Co-Investigator in the Biological Chemistry Division of the Department of Chemistry at the University of Sheffield. His research focus is nucleic acids enzymology. In addition to his research, David is a member of the Board of Directors (BoD) of the United States National Postdoctoral Association (NPA; second term) and the International Consortium of Research Staff Associations (ICoRSA). In addition, David serves on the steering committee of the United Kingdom Research Staff Association (UKRSA) and is a member of NOGLSTP. David was born in a small town in southern New Jersey (greater metropolitan Philadelphia area) in the U.S. After graduating from high school, he earned his B.A. in Biochemistry from Ithaca College. David moved to Los Angeles to earn his doctorate in Biochemistry and Molecular Biology at University of California, Los Angeles (UCLA) where he investigated protein and nucleic acid structure predominantly using NMR. He then became a postdoctoral fellow at the City of Hope Beckman Research Institute. After this initial postdoc, David accepted a Marie Curie International Incoming Fellow (MC-IIF) at the University of Sheffield to work with Professor Jane Grasby.



### Arthur Fitzmaurice

*“To numb ourselves is to avoid the deepest mysteries of life. And those mysteries, even though they have sorrow, also have the deepest joy and are the source of the most profound peace. They are...heaven.” - Fr David Guffey, csc*

Arthur Fitzmaurice, Ph.D. received B.S. degrees in chemical engineering and environmental engineering from MIT and a Ph.D. in environmental science & engineering and cellular & molecular neurobiology from Caltech. His postdoctoral research at the David Geffen School of Medicine at UCLA focused on pesticides associated with Parkinson’s disease. He is currently a AAAS Science & Technology Policy Fellow at the NSF where he is working on international big data analytics and partnership activities with the US Agency for International Development (USAID). He also serves as Resource Director of the Catholic Association for Lesbian and Gay Ministry and is featured in the Ignatian News Network’s YouTube series “Who am I to judge?”



### Francesc Campoy Flores

Francesc Campoy Flores is a Developer Advocate for Go and the Cloud at Google. He joined the Go team in 2012 and since then he has written some considerable didactic resources and traveled the world attending conferences, organizing live courses, and meeting fellow gophers. He joined Google in 2011 as a backend software engineer working mostly in C++ and Python, but it was with Go that he rediscovered how fun programming can be. You can find him on twitter as @francesc.



### Lance Freedman

*“If you go overboard for what you believe in, you won’t drown.”*

Lance Freedman, Senior Staff Project Engineer, is a project manager for strategic initiatives within Lockheed Martin’s Space Systems Company (SSC). Lance’s work in IT Strategy has been published by Harvard Business School Press in *The Execution Premium* (2008) and *Alignment* (2006). In the engineering arena, Lance’s innovations were published in Addison Wesley’s *Juniper Networks Reference Guide* (2003). Lance chairs Lockheed Martin’s Global PRIDE Council, leading corporate-wide LGBT efforts across the corporation to deliver both company and employee results. In 2012, *Out and Equal*, the world’s largest non-profit dedicated to LGBTQ+ workplace equality, awarded Lance the coveted Trailblazer Award. Lance also led Lockheed Martin’s “It Gets Better” video, for which LM was awarded a “Silver Telley” prize. Lance played roles in Lockheed Martin achievements including earning LM’s first full 100 score on the

Human Rights Campaign (HRC) Corporate Equality Index and establishment of an annual LGBTQ+ Leadership Forum. He has an MSE in Computer Engineering from Virginia Tech, a BSE in Computer Engineering from the University of Michigan, and a BA in Theater Production & Design. He lives in Denver, Colorado.



### Nancy Gimbel

*“Be impeccable with your word. Don’t take anything personally. Don’t make assumptions. Always do your best.” -- Don Miguel Ruiz, The Four Agreements*

Nancy Gimbel serves as the Vice President of Student Support Programs at Synergis Education. In this role she serves as a consultant to nonprofit colleges and universities, guiding them through the launch of new academic programs and helping to develop student success programs to increase student retention. Prior to joining Synergis, Nancy served as an Assistant Dean in the Scheller College of Business at

## DIVERSITY GOES INTO EVERYTHING WE DO.

General Motors is a company built on forward thinking and a commitment to diversity and inclusion. That's why we are proud to work with members of the LGBT community as we continue to advance our expertise in science, technology, engineering and math.

[gm.com/diversity](http://gm.com/diversity)

©2014 General Motors. All rights reserved.



GENERAL MOTORS



Georgia Tech and held several other leadership positions at Georgia Tech and Emory University. Throughout her career Nancy has mentored and advised thousands of undergraduate and graduate students. She thoroughly enjoys helping students set and meet academic and career goals. Nancy earned a doctorate in Education from Vanderbilt University, focusing on higher education leadership and policy. Nancy earned her master of arts in education from the University of Florida and her bachelor of arts in communication studies from West Chester University of Pennsylvania. Nancy resides in Atlanta, Georgia with her partner, Anjanette.



**Jason Grenfell-Gardner**

*“If there is no struggle, there is no progress.” – Frederick Douglass*

Jason Grenfell-Gardner is President and CEO at IGI Laboratories (NYSE:IG), a specialty generic pharmaceutical company. Jason has held a number of senior leadership roles in the generic pharmaceutical industry including operations, corporate and business development, sales and marketing, and strategy. Jason joined IGI in August, 2012 to accelerate the company's turnaround and refocus the business on commercializing its generic pharmaceutical pipeline. Prior to joining IGI, Jason worked in a number of roles at Hikma Pharmaceuticals, an international generic specialist, listed in London (LSE:HIK), and in its US subsidiary, West-Ward Pharmaceuticals. Before working with Hikma, Jason's earlier career involved a number of years in investment banking in Central and Eastern Europe with Trigon Capital. During this period, he worked across many industries, including pharmaceuticals, and served as Chairman of the Board of Sanitas Pharmaceuticals in Lithuania. He has served on the board of PAS Gutta (Latvia – FMCG) and A/S In Your Pocket (Czech Republic – New Media). Jason was also President of the American Chamber of Commerce in Estonia. Jason has an MA (Hons) in Economics from the University of St Andrews, Scotland, and an MBA from INSEAD, having studied both in France and Singapore. Jason speaks French fluently, and is also conversant in Russian and Estonian with a working knowledge of German. Jason is married to his husband, Yoann Ricau, and they live between Colts Neck, NJ and New York City with their two basset hounds, Finchley and Beauregard.



**Avril Haines**

Ms. Avril D. Haines was appointed as the Deputy Director of the Central Intelligence Agency on 9 August 2013. Ms. Haines was the Deputy Assistant to the President and Deputy Counsel to the President for National Security at the White House since 2010. Prior to joining the White House Counsel's office, she was Assistant Legal Adviser for Treaty Affairs at the Department of State. She previously worked in the Office of the Legal Adviser at the Department of State from 2003 to 2006, first in the Office of Treaty Affairs and then in the Office of Political Military Affairs. From 2007 to 2008, she worked for the United States Senate Committee on Foreign Relations as Deputy Chief Counsel for the Majority. From 2002 until 2003 she served as a law clerk for Judge Danny Boggs on the U.S. Court of Appeals for the Sixth Circuit. From 2001 to 2002, she was a Legal Officer at The Hague Conference on Private International Law. Ms. Haines received a bachelor's degree in Physics from the University of Chicago and a J.D. from Georgetown University Law Center.



**LaDoris (Dot) Harris**

The Honorable Dot Harris was nominated by President Obama and confirmed by the U.S. Senate on March 29, 2012. Ms. Harris brings nearly 30 years of management and leadership experience to this position, having served at some of the world's largest firms and leading a successful energy, IT, and healthcare consulting firm. Serving at an Assistant Secretary level position at the Office of Economic Impact and Diversity, Ms. Harris leads the Department of Energy's efforts to ensure minorities and historically underrepresented communities are afforded an opportunity to participate fully in our energy programs. Ms. Harris oversees a corporate funding strategy for minority institutions, develops the current and future Departmental workforce, works closely to develop small business contracting opportunities at the Department, and protects the civil rights of Departmental employees and recipients of funding from the Department.



**Jennifer Hasler**

Dr. Jennifer Hasler is a Professor in the School of Electrical and Computer Engineering at Georgia Institute of Technology. Dr. Hasler received her M.S. and B.S.E. in Electrical Engineering from Arizona State University in 1991, and received her Ph.D. from California Institute of Technology in Computation and Neural Systems in 1997. Her current research interests include low power electronics, mixed-signal system ICs, floating-gate MOS transistors, adaptive information processing systems, "smart" interfaces for sensors, cooperative analog-digital signal processing, device physics related to submicron devices or floating-gate devices, and analog VLSI models of on-chip learning and sensory processing in neurobiology. Dr. Hasler received the NSF CAREER Award in 2001, and the ONR YIP Award in 2002. Dr. Hasler received the Paul Rapphorst Best Paper Award, IEEE Electron Devices Society, 1997, IEEE CICC Best Paper Award, 2005, Best Student Paper Award, IEEE Ultrasound Symposium, 2006, IEEE ISCAS Sensors Best Paper Award, 2005, and Best Demonstration Paper, ISCAS 2010.



### Bill Hendrix

*"Be yourself; everyone else is already taken." -- Oscar Wilde*

Dr. Bill Hendrix is the Field R&D Leader for the Coastal States, USA. Bill has been with Dow since 1989 and holds a Ph.D. in Entomology from Iowa State University and received degrees from the University of Arkansas and Clemson University. He has been a participant in GLAD (Gays, Lesbians and Allies at Dow) since 2001 and was global leader from 2006-2011. Bill has testified before congress twice for LGBT equality in the workplace and was showcased in the PBS Special "In the Life" in 2011. Bill and his partner, Gary, have been together since 1981 and were profiled for the documentary "Ordinary Couples—Extraordinary Lives" which examines the relationships of 16 long-term gay and lesbian couples. Bill serves on the National Advisory Board of Freedom to Work and as LGBTQ+ focal point for the Central Indiana United Way Diversity Leadership Circle. He also served on the board for six years at Indiana Youth Group, a United Way agency and nationally recognized resource for at-risk LGBTQ+ youth. Bill is NOGLSTP's 2011 GLBT Scientist of the Year.



### Todd Henry

*"Don't panic." -- Hitchhiker's Guide to the Galaxy*

Professor Todd Henry is the Director of the REsearch Consortium On Nearby Stars (RECONS, www.recons.org), an international group of scientists who have for the past 20 years been working to discover and characterize the sample of stars and their planets near the Sun. He is also a Councilor of the American Astronomical Society (AAS), the major organization of professional astronomers in North America. The AAS is forward-looking organization that has a well-established Working Group on LGBTIQ Equality (WGLE).



### Felix Hu

*"The events in our lives happen in a sequence in time, but in their significance to ourselves they find their own order... the continuous thread of revelation." - Eudora Welty*

Felix Hu is a designer and tech entrepreneur. He has worked in multiple disciplines, from educational web design for Nobel Laureates at the Cold Spring Harbor Laboratory, to building systems engineering for New York City hospitals, to international architecture design in the Caribbean, Dubai and China. Two years ago, he co-founded the web startup StoryCall, a service and technology company that makes it easy for families to capture the stories of their elders. He wears many hats at StoryCall, but perhaps most of all, his multidisciplinary background has given him the ability to bridge communication between business and product needs. Felix grew up in the Catskill Mountains in New York and graduated from Georgia Tech in 2007 with a BS in Architecture. Outside of work, he enjoys racing kayaks and searching for corn dogs at any of Atlanta's intown festivals.



**ACS**  
Chemistry for Life®

# American Chemical Society Diversity Programs

**proud** Out to Innovate™ sponsor

[www.acs.org/diversity](http://www.acs.org/diversity)



### **Andrew Jancaric**

Andrew Jancaric is a cost engineer in BASF's Corporate Engineering Services department. He currently supports the economic analysis of large capital projects by supplying detailed cost estimates for their construction. Andrew is an alumnus of Texas A&M University where he studied chemical engineering. His passion for LGBTQ+ equality led him to become the vice president of the LGBTQ+ student group at Texas A&M and the only openly LGBTQ+ student senator at the time. Andrew currently lives in Houston, Texas.



### **Tony Keith**

Tony Keith is a Washington, D.C., area native that identifies as a poet, educator, and a nerd. As a poet Tony has traveled around the world teaching poetry and empowering young people to engage in the art of the spoken word. He was most recently featured at Washington National Cathedral's Martin Luther King Jr. Celebration, Bus Boys and Poets, and Bloombars. As an educator, Tony has committed his life to working with first-generation, low-income, racial and ethnic minority students and engaging in cultural education and social justice programming on college campuses. He currently serves as a Director of the Cathedral Scholars Program at Washington National Cathedral. As a nerd, his thoughts, writings, teachings, and performances are centered on topics dealing with race, gender, poverty, culture, and sexuality.



### **David J. Kraemer**

A recent graduate of the University of Pittsburgh, David J. Kraemer has been working for BASF in their engineering Professional Development Program (PDP) since July 2013. He was actively involved in the LGBTQ organization on campus as well as continuing his involvement in the workforce with BASF's ALL-chemie employee resource group. David is also involved with the annual conferences for the American Institute of Chemical Engineers and is currently training for his first marathon in January.



### **Ron Lewis**

Ron Lewis currently holds the position of Vice President, Procurement and Chief Procurement Officer of The Coca-Cola Company and is responsible in this capacity for stewarding in excess of \$38 billion in external spending across The Coca-Cola System. Prior to his current role Ron held the position of Senior Vice President, Coca-Cola Refreshments, leading their 7,000 employees across the Southeast Region. The Southeast region, including its Franchise Leadership for independent bottlers, represents an annual volume of approximately 450 million physical cases and \$2.7 billion in revenue. In the community, he has represented Coca-Cola on the Board of the Georgia Chamber of Commerce and served as Director on the Board of the C5 Georgia Youth Foundation, a nonprofit organization that strives to support and inspire high-potential youth from risk-filled environments. Before starting his career with the Coca-Cola system, he was employed by Mars, Inc. and Cargill, Inc. in various supply chain, procurement, trading and risk management capacities. Mr. Lewis received a Bachelor of Science in Chemical Engineering from Montana State University and a Master of Business Administration from the J.L. Kellogg Graduate School of Management at Northwestern University. Ron resides in Marietta, Ga., with his wife, Leanne, and their three children.



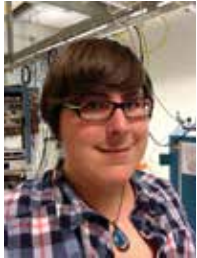
### **Luis A. Leyva**

*"Never forget what you are, for surely the world will not. Make it your strength. Then it can never be your weakness. Armour yourself in it, and it will never be used to hurt you." - George R. R. Martin, A Game of Thrones*

Luis A. Leyva is a fourth-year Ph.D. candidate at Rutgers University. His educational research uses intersectionality theory to examine the mathematics experiences and identities of undergraduate students minoritized in terms of race and gender in STEM (science, technology, engineering, mathematics). Luis' dissertation research focuses on the racialized and gendered mathematics experiences of academically successful, first-year Latin@ college students enrolled at a predominantly white institution. In addition to his research work, Luis holds professional experience in various STEM support initiatives at Rutgers University including the STEM Talent Expansion Program (RU-STEP), TRIO Upward Bound Math-Science, and Project Advancing Graduate Education at Rutgers (Project AGER). Luis is a certified K-12 mathematics teacher in New Jersey and earned a Master's degree in Mathematics Education in 2011 from the Rutgers Graduate School of Education.

## William Lindstaedt

Bill Lindstaedt has been the Director of the Office of Career and Professional Development at UCSF since 2001. Previously he has served as director of career services at Rose-Hulman Institute of Technology and Assistant Director of Career Services at Case Western Reserve University. He has a MS in Counseling and Higher Education from Indiana University Bloomington and a BS in Chemical Engineering from Rose-Hulman Institute of Technology. Mr Lindstaedt is co-author for *Science* magazine's myIDP. myIDP is a free career development tool launched in September 2012 and designed to help research scientists take charge of their careers.



## Elys Long

*"Space is big. Really big. You just won't believe how vastly, hugely, mind-bogglingly big it is." - Douglas Adams*

Elys Long is a Postdoctoral Research Associate at the University of New Hampshire where they study experimental nuclear and particle physics using Jefferson Lab's electron accelerator. Over-seeing a number of graduate and undergraduate students, Elys's research maps out the internal structure of protons and neutrons using spin-polarized targets and is developing a novel tensor-polarized target, which will be used to bridge nuclear and nucleonic effects. She holds an M.A. and a Ph.D. in Physics from Kent State University and a B.S. in Physics from Juniata College. Along with serving as the oSTEM VP on Sexual and Gender Minorities, Elys is the director of the oSTEM Trans Working Group, founder and organizes for LGBT+ Physicists, and serves on the steering committee of Transgender New Hampshire. They have also served as Member at Large for the APS Forum of Graduate Student Affairs, and volunteered with the LGBT Center of Hampton Roads in Virginia and the LGBT Community Center of Greater Cleveland in Ohio where she focused on supporting and advocating for trans communities and HIV prevention.



## Amy Martinez

Amy Martinez works for Raytheon Missile Systems in Tucson, AZ as a Sr. Labor Relations Specialist. Amy transferred from RMS Louisville where she was the first Labor Relations rotator within the Human Resources organization. Amy came to Raytheon from Kosair Children's Hospital where she supervised the Neonatal Intensive Care, Pediatric Intensive Care and Outpatient Surgery. Amy brings to Raytheon 15yrs of management experience and received her Master's Degree in Business Communication from Spalding University in Louisville, KY in 2011. Amy has also earned two undergraduate degrees from Indiana Wesleyan University in Management. Amy has been awarded Leadership Awards from her three previous employers. Amy was the President of the Louisville chapter of the Raytheon Women's Network for three years and was selected to co-lead Raytheon's presence at the Out and Equal Conference and *Out to Innovate*<sup>™</sup> for the last two years. Amy is eager to learn new cultures and explore diversity through summits and conferences, and provides her experience growing up in a small Indiana town as an out professional. Amy and her wife of 4yrs, Brenna, recently moved to Tucson to begin the next chapter in their lives.



## Sharon Milgram

Dr. Sharon Milgram received a BS degree in Physical Therapy from Temple University in 1984 and a PhD in Cell Biology from Emory University in 1991. She completed a postdoctoral fellowship at The Johns Hopkins University before joining the faculty at The University of North Carolina at Chapel Hill in 1994. At UNC, Dr. Milgram rose to the rank of Full Professor with Tenure in the Department of Cell & Developmental Biology. Her research was supported by grants from NIH, NSF, Cystic Fibrosis Foundation and American Heart Association. Dr. Milgram held a number of training positions at UNC including the Associate Director of the Medical Scientist Training Program, Director of the Interdisciplinary Biomedical Sciences Graduate Program, and the Director of the Summer Undergraduate Research Experience. She also founded and advised the UNC Office of Postdoctoral Services and served as Principle Investigator on an NSF grant to support undergraduate research, an NIH training grant in Cell and Developmental Biology, and an NIH Initiative to Maximize Student Diversity grant. In 2007, Dr. Milgram joined the National Institutes of Health, Office of the Director as the Director of the Office of Intramural Training and Education ([www.training.nih.gov](http://www.training.nih.gov)). There she directs a trans-NIH Office dedicated to the career advancement of over 5000 trainees, ranging from high school and college students to postdoctoral and clinical fellows. Until recently Dr. Milgram was also a Senior Investigator in the National Heart Lung and Blood Institute where she continued her research in the area of epithelial cell biology and cell signaling. Dr. Milgram lives with her wife and family in Takoma Park, MD.



**Stephanie Miller**

Stephanie Miller is a graduate student in biophysics at the University of Maryland College Park where she studies nonlinear dynamics in biological systems. As a NIH GPP research trainee, she is conducting PhD research at the National Institute of Mental Health (NIMH) on how balanced neural activity in the cortex spontaneously self-organizes into "neuronal avalanches". Stephanie majored in Chemistry at Mount Holyoke College and hails from Northampton, Massachusetts.



**Michael I. Nishimura**

Dr. Michael I. Nishimura is a Professor of Surgery at the Loyola University Stritch School of Medicine. He also is the Associate Director for Translational Research in the Cardinal Bernardin Cancer Center and is the Associate Director for the Oncology Institute in the Stritch School of Medicine. Dr. Nishimura has established a basic, translational, and clinical research program designed to understand how the genetics and biology of T cell receptor genes influence tumor recognition by T cells and the genetics of the T cell receptor can be manipulated to enhance tumor regression in vivo. The work in Dr. Nishimura's lab has led to novel clinical trials using genetically engineered T cells to treat patients with advanced melanoma. His lab is supported by R01, P01, R21, and R43/R44 SBIR grants from the National Cancer Institute. In addition to his research activities, Dr. Nishimura is active in the grant peer review process. Over the past 20 years, he has served on more than 100 Study Sections for Federal Funding Agencies including the National Institutes of Health, the Department of Defense, and the Department of Energy. He has utilized his expertise in writing and reviewing grants to help mentor others in the grant writing process. In the past 10 years, he has directly or indirectly assisted eight junior faculty obtain their first NIH R01 grant. He has also helped students and young faculty obtain NIH F awards (fellowships), K awards (career development), and loan repayment grants. Through these research and career development activities, Dr. Nishimura demonstrates his commitment to helping others through better science.



**Thalida Noel**

Thalida is a Front-end Engineer with OkCupid in New York City, where she is currently working on a small team as part of a redesign for a website they acquired. Prior to working with OkCupid, she attended Capitol College, and was an intern at NASA Goddard Space Flight Center as well as a Front-end Developer Intern at Webs, a VistaPrint Company.



open happiness™





### Eric Patridge

Dr. Eric V. Patridge is a scientist and educator at Yale University, with research experience in natural products, protein chemistry, and drug discovery. Since 2012, Dr. Patridge has coordinated a collaborative research program to engage faculty and students in the discovery of novel bioactive compounds from environmental organisms. Prior to his current position, Dr. Patridge was a postdoctoral associate in the Yale School of Medicine, where he designed and characterized anticancer agents. He holds a B.A. from Skidmore College, as a double major in Chemistry and Molecular and Cellular Biology, as well as a Ph.D. in Integrative Biosciences (Chemical Biology) from Penn State’s Huck Institute of Life Sciences. Dr. Patridge is also Founder and President of oSTEM Incorporated, an organizing board for the professional society for LGBTQA students from across the fields of Science, Technology, Engineering, and Mathematics. He serves as a collaborating researcher with Campus Pride, where he focuses on the state of LGBTQA and STEM communities, and he is also working to investigate healthcare access and the incidence of cancer for LGBTI communities, in a collaboration with Yale’s Breast Cancer Center, The National LGBT Cancer Network, and the American Cancer Society.



### Kip Pettigrew

Kip Pettigrew is the Product Marketing Manager for the SAPL signal sources and AWG product lines. Before moving to Oregon and joining Tektronix in 2013, Kip spent twelve years developing, building and managing cutting edge micro and nanotech solutions for GlaxoSmithKline, ESI, DARPA and the Army. Kip obtained his undergraduate and graduate degrees in Mechanical Engineering and Micro Electrical Mechanical Systems (MEMS) from M.I.T. and Berkeley respectively and then his MBA from M.I.T. Sloan. When he’s not working, Kip enjoys running, random travel (all seven continents hit so far) and novel writing with his first novel, “Pledge: Book 1 of the Guild Memoirs” released in 2013.



### James Scott P. Pignatella

*“The Purpose of life is not to be happy. It is to be useful, to be honorable, to be compassionate, to have it make some difference that you have lived and lived well.” --Ralph Waldo Emerson*

James Scott P. Pignatella is a Senior Systems Engineer working in flight test and data analysis at Raytheon Missile Systems. He started his engineering career with Hughes Aircraft Company in 1994 as a new college hire and completed his gender transition on the job shortly thereafter. In 2007, Scott was chosen by his peers at Raytheon to be designated an engineer “with Honors.” He has served six years

## At the Johnson & Johnson Family of Companies,

our vision of diversity includes everyone—from our employees, to our suppliers, to our customers. We strive to be the employer of choice for those in the LGBT community because to us, equality is good business.

### Johnson & Johnson is:

- Rated 100% on the Human Rights Campaign Corporate Equality Index for the last 9 years
- Member of the Billion Dollar Roundtable for Supplier Diversity
- Ranked in the top 12 for overall diversity since 2009 (DiversityInc.)
- The 2011 Point Foundation Inspiration Award winner and proud sponsor of 4 recent scholarships
- Proud to provide full transgender employee health benefits
- The recipient of PFLAG’s 2014 Straight for Equality Business Award



open&out | CHAPTERS AT THE *Johnson & Johnson* FAMILY OF COMPANIES

on the board of the Raytheon Tucson GLBTA ERG, including a term as President in 2010. He was honored by the Raytheon GLBTA as the recipient of the Louise Young Award in 2014. Scott earned a Bachelor's Degree in Electrical Engineering from New Mexico State University. Scott has been a member of Out & Equal's Transgender Advisory Committee; has volunteered as mentor for youth through Boy Scouts and Big Brothers Big Sisters, and for trans youth at Camp Born This Way. Scott is also the owner/photographer of Tomcat Enterprises Photography. He resides in Tucson, Arizona with a small herd of cats, a plethora of books, and a network of friends.



**Manu Platt**

*"Not failure, but low aim is sin." – Dr. Benjamin Elijah Mays*

Dr. Manu Platt received his B.S. in Biology from Morehouse College in 2001 and his Ph.D. from the Georgia Tech and Emory joint program in biomedical engineering in 2006. After completing his postdoctoral work at MIT in orthopedic tissue engineering and systems biology, he returned to Georgia Tech/Emory Biomedical Engineering as an assistant professor in 2009. His research covers HIV-mediated cardiovascular disease, early cancer detection technologies, and sickle cell disease where he investigates mechanisms to stop children with sickle cell disease from having strokes. For this work he was selected for the NIH Director's New Innovator Award. His work has also been funded by NIH Director's New Innovator Award, International AIDS Society, Georgia Cancer Coalition, and the National Science Foundation. He is also the Diversity Director for the NSF Science and Technology Center for Emergent Behaviors of Integrated Cellular Systems (EBICS) between Georgia Tech, University of Illinois, and Massachusetts Institute of Technology.



**Monica Plisch**

*"What gets measured, gets managed."*

Dr. Monica Plisch is Associate Director of Education and Diversity for the American Physical Society (APS). She leads the Physics Teacher Education Coalition (PhysTEC) project, which has a mission to improve the education of future physics teachers. PhysTEC has more than doubled the number of physics teachers graduating from supported sites, and established a national coalition of 300 member institutions. Monica is also engaged in efforts to promote diversity and inclusion in the physics community. She is co-chair of the APS Diversity Working Group and a primary staff liaison for the new APS ad hoc committee on LGBTQ+ issues. In addition, Plisch is a co-PI of the APS Bridge Program, with a goal to increase the number of minorities who earn a PhD in physics. Before coming to APS, Monica led nanoscience education initiatives at Cornell University. She completed her doctoral studies in physics at Cornell University.



**Matt Rhyner**

Matt Rhyner is the Sr. Marketing Manager for Beckman Coulter's Particle Characterization Business, based in Miami, FL, which produces a variety of instruments relying on biophysical principles to analyze everything from cell viability to abrasive slurries. Matt earned a BS in Chemical Engineering (highest honors) at Georgia Tech and a PhD in Biomedical Engineering from the Wallace H. Coulter Department of Biomedical Engineering at Georgia Tech and Emory University. After graduate school, Matt joined Beckman Coulter in a sales role and subsequently moved into sequential marketing positions. Along the way, he picked up his MBA from UMASS Amherst. Matt has won several awards throughout his academic and professional careers including a NSF Fellowship and Beckman Coulter's Inner Circle Award. Matt has many interests outside of work, but the most important are his wife, young baby (b. March 2014), and two large hound dogs.



**Donna Riley**

*"The power of visibility can never be underestimated." - Margaret Cho*

Donna Riley is Program Director for Engineering Education at the National Science Foundation, on rotation from Virginia Tech, where she is Professor of Engineering Education. An out bisexual for more than twenty years, Riley has most recently been involved in the LGBTQ+ and Allies affinity group at the National Science Foundation, and outside of work as a blogger for an LGBTQ+ people of faith organization. She has written about LGBTQ+ issues in engineering and is the recipient of the 2010 NOGLSTP LGBTQ+ Educator of the Year Recognition Award.



### **Ricky Roberts**

Born and raised in Michigan, Ericka “Ricky” Roberts aka Ricky Simone: The Hip Hop Activist is a human rights activist and entertainer. She performs hip hop music & poetry with thought provoking content intended to inspire love and the liberation of oppressed communities. She received a Master of Social Work degree from the University of Michigan. Ricky is currently an Honors Program academic advisor and doctoral student at The University of Georgia (UGA). She is the first African American to serve as the Chair of GLOBES: UGA’s LGBTQ+ organization for faculty, staff and graduate students. She also volunteers with various social justice and LGBTQ+ organizations including the Economic Justice Coalition, Athens Pride and Georgia Equality.



### **Alberto I. Roca**

*“We’re all minorities so let’s help each other.”*

Alberto I. Roca, Ph.D., is Executive Director of the non-profit, DiverseScholar, whose mission is to diversify the doctoral workforce especially in the STEM disciplines with a particular focus on underrepresented populations such as people of color, disabilities, first-generation, LGBTQ+, etc. Dr. Roca is a first-generation Peruvian-American from Houston, Texas who received his Ph.D. in Molecular Biology from the University of Wisconsin, Madison. While conducting postdoctoral research, he created the web portal MinorityPostdoc.org (2003), founded the Postdoc Committee of the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), and co-founded the Diversity Committee of the National Postdoctoral Association. Currently, he works with trainees directly as a career coach and also connects institutional diversity stakeholders to job candidates especially for tenure-track faculty job searches. Since 2011 as Editor, Dr. Roca has been publishing original written works under the DiverseScholar brand on the issues of diversity, STEM, and higher education. Finally, Dr. Roca bridges the divide that exists between the minority and STEM blogging communities by profiling minority STEM bloggers on MinorityPostdoc.org, by curating the Diversity in Science Blog Carnivals, and by organizing sessions at the SACNAS, ScienceOnline, and LATISM conferences.



### **TJ Ronningen**

*“Electricity is proof that there can be light in all this darkness. It takes a lot of work, but oh baby it’s worth it.” -- Cynthia Hopkins*

TJ Ronningen is a Principal Research Scientist with Battelle Memorial Institute. TJ works in a sensor systems group and performs laboratory and field research to develop new sensor technologies. He has worked on chemical and biological materials sensors for both security and industrial applications. At Battelle, TJ has served as co-chair of Prism, Battelle’s LGBT employee resource group. TJ has worked with NOGLSTP since 2010 when they first initiated *Out To Innovate™*. TJ and his husband have lived in Columbus, Ohio for 16 years. They enjoy the local restaurants and dessert shops. TJ also enjoys reading, watching films and listening to music.



### **Angelica Ross**

At the intersections of gender, class, race, and religion, Angelica Ross has made a career out of helping others navigate the challenges that come along with being a member of more than one minority. In February of 2013, Angelica joined the Trans Life Center project from Chicago House and Social Service Agency and developed an employment program specifically geared towards transgender and gender non-conforming job seekers. Angelica provided one on one career coaching, facilitated group job readiness and wellness workshops, and also trained Chicago corporate and government agencies to be culturally competent on trans issues in employment. Over the span of 10+ years Angelica built a creative design business that began in the margins of society, outside the formal education system. Angelica is now the Executive Director and CEO of TransTech Social Enterprise, a training academy and apprenticeship program that aims to empower, educate and employ the trans community through the use of technology while promoting innovation, independence and entrepreneurship. Miss Ross also continues her work with the National Gay and Lesbian Task force as a faculty member for the national Trans Leadership Academy. Visit [MissRoss.com](http://MissRoss.com) and [TransTechSocial.org](http://TransTechSocial.org) for more information.





**Kyle Simon**

*"We're all different. Especially him. But there's something kind of fantastic about that, isn't there?" - Fantastic Mr. Fox*

Kyle is in his senior year as an undergraduate at Ohio Wesleyan University (OWU) currently pursuing a degree in genetics and psychology. He's an intern at OWU's Spectrum Resource Center, an office for LGBTQ+ programming, and OWU's admission office. He's also a member of Greek Life (Chi Phi). He's currently teaching a course on the biological influences of sexual orientation, and researching the psychological processes behind 'gay-dar'. He grew up near Houston, Texas and eventually hopes to become

a professor.



**Mike Smith**

*"No excuses... I control my destiny!"*

Michael D. Smith, D.Eng. is the Deputy Executive Director, Internal Operations of The National GEM Consortium. Michael, known by many as "Dr. Mike", is responsible for coordinating the day-to-day operational, administrative, financial and board support services of the organization at the corporate headquarters office in Alexandria, VA. Dr. Mike serves as the liaison to the Audit, Finance and Operations Committees for the Consortium, and currently serves as the Operations lead responsible for Accounting, Fellowship Administration and Event Planning for the organization. He also provides support in the strategic development of GEM fellowship administration processes and overall operations. Dr. Mike brings a wealth of experience and knowledge to this role as the prior Director of Programs and former Interim Deputy Executive Director to the National Society of Black Engineers (NSBE) where he managed a budget in excess of \$1.4 million for the strategic development, coordination, implementation, and evaluation of all academic, technical, leadership, international and pre-college programs, as well as provided programmatic and operational support to convention planning. Michael holds a B.S. and M.S. in chemical engineering from the University of Missouri-Rolla (now Missouri University of Science & Technology) and an engineering doctorate in chemical engineering and engineering management from Texas A&M University. Given his passion for engineering education and access for under-represented students, Dr. Mike serves on the National Champions Board of the National Girls Collaborative Project, and is the current chairperson of the National Engineers Week Foundation Diversity Council. He is a lifetime member of the American Indian Science & Engineering Society, National Society of Black Engineers, the Society of Hispanic Professional Engineers, and Kappa Alpha Psi Fraternity, Inc



We make the world safer through nuclear materials management. Come join our team.

# Savannah River Nuclear Solutions

Savannah River Nuclear Solutions manages and operates the Savannah River Site, a 310-square-mile facility owned by the U.S. Department of Energy near Aiken, S.C. We're also home to the Savannah River National Laboratory.

Our diverse workforce operates nuclear and research facilities, and manages infrastructure and support systems akin to those of a small city.

Savannah River Nuclear Solutions offers careers in disciplines such as engineering, science, business, information technology and other technical fields.

We also offer internships in the same disciplines for qualified students who want to enhance their education with hands-on experience.



[www.savannahrivernuclearsolutions.com](http://www.savannahrivernuclearsolutions.com)  
Follow us on Facebook, Twitter, YouTube and Flickr.





### **Adam Stoffel**

Adam founded and, for two years, led the oSTEM Chapter at UW-Milwaukee. After graduating with a BS in Computer Science, he continued to remain active within oSTEM and joined the oSTEM national organization in 2013 to serve as the Vice President for Information Technology. Adam is a Technical Consultant at the Microsoft Public Sector Solutions Center in the Washington, DC area. He enables customers in all levels of local, state, and federal government and international organizations to leverage technology to solve their most challenging problems. He focuses primarily on user experience and custom development but also works across the Microsoft product stack to design and deliver powerful solutions.



### **Suriza Van der Sandt**

*“An arrow can only be shot by pulling it backward. When life is dragging you back with difficulties, it means it’s going to launch you into something great. So just focus, and keep aiming” - Author unknown*

As Associate Professor at the College of New Jersey Mathematics and Statistics Department, Dr. Van der Sandt conducts research in the broad area of pre-service mathematics teacher education. Her research interests include geometry teaching and learning, focusing on spatial orientation and spatial insight. More recently she has also conducted research on factors influencing teaching and learning of pre-service mathematics teachers (e.g. mathematics anxiety); factors affecting observational learning (e.g. self-efficacy and outcome expectations) as well as Engineering Education. Her teaching interests cover both pure mathematics and mathematics education.



### **Michelle Venables**

*“The most difficult thing is the decision to act. The rest is merely tenacity. The fears are paper tigers. You can do anything you decide to do.” -- Amelia Earhart*

Michelle Venables, Senior Systems Engineer, is a team lead within Lockheed Martin’s (LM) Corporate Internal Audit organization. Her previous roles include systems engineering positions within LM’s Aeronautics and Missiles & Fire Control business areas. She has an MBA with a double concentration in Operations Management and Finance from Georgia State University and a Bachelor of Science in Electrical Engineering from the University of Southern California. She lives in Atlanta, Georgia.



### **Kyle Vey**

*“Never forget what you are, for surely the world will not. Make it your strength. Then it can never be your weakness. Armor yourself in it, and it will never be used to hurt you.” - George R.R. Martin, A Game of Thrones*

Kyle Vey is a senior in biomedical and mechanical engineering at North Carolina State University (NCSU). Throughout his college career, he has been involved in numerous biomedical research experiences involving prosthetics, medical imaging, and software development. He has served as the president of the NCSU LGBTQ+ group for two years and has organized a number of community service projects for the LGBTQ+ community. During his senior year, he hopes to explore intersections between his two passions by making science, technology, engineering, and mathematics fields at NCSU more open and accepting to the LGBTQ+ community.



### **Bradley Wilkinson**

*“If you think you’re green, you’ll grow. If you think you’re ripe, you’re rotten.”*

Skilled speaker, facilitator and instructional designer, Brad gets his energy from people development. He has over 25 years of hands-on experience designing and delivering high impact adult learning experiences using a variety of learning methodologies including: experiential workshop design, facilitated group process, and web/media-based/virtual learning environments. His sessions typically focus on helping leaders build and maintain diverse and inclusive organizational cultures given current workforce, workplace and marketplace dynamics. Taking his energy for diversity into the Atlanta community, he was founding Co-Chair of Georgia Equality, a statewide organization dedicated to securing and protecting the rights of Georgia’s lesbian, gay, bisexual and transgendered citizens. At the national level, he is a member of the Human Rights Campaign, having served as Political Co-Chair for the Atlanta Steering Committee during the 2008 election cycle. For the past few years, Brad’s enjoyed serving on the Executive Board of the Georgia Tech Pride Alumni as Student Development Chair. Brad earned a Master of Science in Industrial Relations from Georgia State University and a Bachelor of Science in Industrial Management from Georgia Tech.



**Alex Wan**

Atlanta City Councilmember Alex Wan has been proudly serving as a Council member since 2010. Educated at Georgia Institute of Technology, he earned a Bachelor of Industrial Engineering there in 1988. In 1993, he went on to attend the Wharton School at the University of Pennsylvania where he earned a Master of Business Administration degree with a concentration in Finance. Since then, he also attended the Minority Business Executive Program at the Tuck School of Business at Dartmouth College in 2001. After attending Georgia Tech, Councilmember Wan began his career with the Prudential Investment Corporation's Corporate Finance Group in Newark, New Jersey from 1988-1989. In 1990, he relocated to Atlanta and joined Prudential's Real Estate and Acquisitions team as an Investment Analyst. From 1993-2009 he served as President of Optima, Inc., an architecture-engineering consulting firm. From 2009-2012, he has served as Director of Development for Jerusalem House, Inc., one of Atlanta's oldest housing providers to homeless and low income families affected by HIV/AIDS. Since 2012, Alex serves as the Director of Development for Emory University Libraries.



**Deborah L. Williams** *"I am a human being, nothing human can be alien to me" -- Maya Angelou*

Deborah Williams works with individuals and organizations in redirecting practices to reach desired results and effectiveness. She is Principal of LeaderShip Edge Management Consultants, Inc. She has over 30 years of corporate and consulting experience and over 20 years working with clients in leadership and organization effectiveness, diversity management and executive coaching. Deborah's clients' performance is enhanced by increasing the individual's knowledge-base, acuity, skills and intentional behavioral choices. Deborah has worked with large and small companies, public and private sector firms. She has provided, coaching, consulting and training for clients such as: Cox Enterprises Inc. as well as Cox Communications, Manheim, AutoTrader.com, Valpak, and Cox Media Group, The Centers for Disease Control and Prevention (CDC), Environmental Protection Agency (EPA), Georgia Power Company, Turner Broadcasting Systems, Inc., Federal Home Loan Bank of Atlanta, State Farm, KPMG, Emory University Corporate Education, Duke University Corporate Education, Carastar Industries, Blue Cross Blue Shield, Hewlett Packard Company, The Coca-Cola Company, AT&T, Verizon, Marsh McLennan Companies, BP Oil, a number of other federal, state and city agencies. She has worked with clients in countries such as Mexico, Canada, Brazil, Scotland, England, Germany and Africa. Deborah has an MBA and BSBA from Ohio State University.



**Adam Ward**

Adam Ward is serving as the GLBT Center graduate assistant for the 2014-2015 academic year while studying in the LGBT Health Policy & Practice graduate certificate program at George Washington University. During Adam's graduate work in Comparative Biomedical Sciences at NC State University, his research focused on cell cycle regulation and molecular oncology. While obtaining his undergraduate degree in Environmental Sciences from NC State University, he worked as an undergraduate researcher in the department of Environmental and Molecular Toxicology. Adam also conducted research at the Hamner Institutes for Health Sciences in Research Triangle Park and in the department of Nutrition at UNC Chapel Hill. Additionally, he served as a student leader in the GLBT Community Alliance student organization while an undergraduate. Adam has a BS in Environmental Science and an MS in Comparative Biomedical Sciences, both from North Carolina State University. He is currently pursuing medical school for entry in 2015 and is interested in LGBTQ+ health as a career.



**Jason Yovandich** *"Follow, learn, and respect the rules before bending, changing or breaking them."*

Dr. Jason Yovandich is Program Director and Project Officer at the Biological Resources Branch at National Cancer Institute. Dr. Yovandich completed his doctorate in Cell and Molecular Biology at Baylor College of Medicine in 1997, where he characterized plasmid DNA transfer and gene expression in the synovial joint. His post-doctoral training with the AIDS Vaccine Program within SAIC-Frederick (now Leidos Biomedical) involved the development and characterization of a candidate DNA vaccine for SIV/HIV infection based on viral nucleocapsid mutations. New interests led Jason to translational research and US regulatory affairs for biological therapies in 2000, and he obtained an NCI technology transfer fellowship and achieved certification as a Regulatory Affairs Professional. Soon thereafter, he accepted a permanent position at NCI within the Biological Resources Branch and has since then served as a Program Director and Project Officer for nearly 13 years. He manages an extramural research program grant portfolio and has overseen more than 24 translational research projects supported by the NCI RAID and Experimental Therapeutics (NEXT) programs. Jason lives in Frederick, Maryland, with his partner of 13 years. They love to travel whenever and wherever they can.

# Smart Jobs at Smart Places.

*For you and your partner*

HERC and its member institutions are committed to hiring the most diverse and talented faculty, staff, and executives and assisting dual-career couples.

Search over 20,000 higher education jobs

Sign-up for our job alerts and career news

Get access to our diversity career resources

Dual-Career Assistance - search jobs within a commutable distance from one another

[www.hercjobs.org](http://www.hercjobs.org)



**HERC**  
Higher Education  
Recruitment Consortium



**Hiring people with different backgrounds, experiences and beliefs helps keep the nation safe.**

Your unique views and your chosen field of endeavor are needed at the CIA. We gather and analyze national security intelligence for US senior policymakers. It's an important job you'll feel good about. Are you up for the challenge? Of course you are. Take the next step today.

Applicants must have US citizenship and the ability to successfully complete medical examinations and security procedures, including a polygraph interview. *An equal opportunity employer and a drug-free workforce.*

**The CIA is a proud sponsor of NOGLSTP's Out to Innovate 2014 and 4th National Annual oSTEM Conference Joint Event.**



THE WORK OF A NATION.  
THE CENTER OF INTELLIGENCE.  
[www.cia.gov](http://www.cia.gov)

# Student Posters

*architecture*

## **NZEB Enhancement for LEED Rated Educational Facilities Using Building Information Modeling and Energy Simulation**

*Aydin Tabrizi and Paola Sanguinetti, University of Kansas – Lawrence, Graduates*

The global contribution from buildings towards energy consumption, both residential and commercial, has steadily increased, reaching figures between 20% and 40% in developed countries, and has exceeded the other major sectors: industrial and transportation. In the United States, buildings consume close to 40% of all energy used and account for 40% of global CO<sub>2</sub> emissions. Educational buildings are the fifth most prevalent institutional building type with approximately 309,000 buildings. Based on research conducted by Energy Information Administration (EIA), educational buildings consume a total of 0.19 Gigawatt hours (614 trillion BTU) of energy per year. For a typical University building, space heating, cooling, and lighting together account for nearly 70 percent of energy use. A LEED rating rewards designers for using strategies that can improve performance of a building or community and BIM can support the study of strategies more quickly, to achieve LEED certification, and make timely decisions. An analysis of measured energy use data from 100 certified buildings yielded that on average LEED buildings use 18–39% less energy per floor area than their conventional counterparts. However another study showed that 28–35% of LEED buildings use more energy than buildings without a LEED rating. In addition, the United States Green Building Council's (USGBC) research suggests that a quarter of the new buildings that have been certified do not save as much energy as their designs predicted and that most of those buildings do not track energy consumption once in use. In this research, two case studies focus on the operational performance of LEED-rated educational buildings with the application of BIM to evaluate their capacity to achieve Net Zero Energy Building (NZEB). The feasibility of NZE criteria will be evaluated for a) seasonal comparison, b) facility occupancy, and c) PV panels' addition in relation to buildings to meet NZEB criteria and maximize energy savings. The results of NZEB approach will be compared to LEED requirements, based on ROI and PV panel's efficiency for both cases.

*biology*

## **Collective Mechanics of Epithelial Cells**

*Aaron F. Mertz, Rockefeller University, Postdoc*

Individual cells interact mechanically to regulate myriad biological processes. Mechanical cooperation of cells is evident in dynamic processes such as muscle contraction and flow-induced alignment of vascular cells. Cells' mechanical interactions also influence tissues' static material properties, including elastic modulus, surface tension, and fracture toughness. Little is known about how these tissue-scale mechanical phenomena emerge from interactions at molecular and cellular levels. Employing the system of skin cells and skin tissue, my interdisciplinary research utilizes tools of cell biology, mechanical engineering, and theoretical physics to delineate how a tissue cannot be understood simply as an assembly of single cells. Specifically, my colleagues and I show how multicellular colonies collectively apply force to their surroundings and exhibit a property reminiscent of surface tension that underlies the behavior of liquids. Our findings have implications for mechanical regulation of epithelial cells during development, homeostasis, and disease.

*biology*

## **Pharmacological characterization of naturally occurring MrgprX1 variants reveals loss of function and gain of function mutations**

*Daniel Heller, Tufts University, Undergraduate*

Histamine-independent itch, a refractory symptom that can accompany chronic diseases and is a side effect of certain prescription drugs, presents a pressing clinical problem. Recent literature suggests MrgprX1, a human G protein-coupled receptor expressed in neurons, is involved in causing this type of itch. To characterize MrgprX1 signaling, this project studied naturally occurring receptor variants containing single nucleotide polymorphisms (SNPs). To assess whether these mutations modulate receptor function, a panel of novel recombinant and synthetic ligands was used. Two receptor variants studied exhibit altered levels of ligand-mediated and constitutive activity. These data could help explain differences in susceptibility to histamine-independent itch observed across different populations.

*biology*

## **Understanding Type 2 Diabetes Through the Glucose Transporter and Pancreatic Beta Cell Glycosylation During Starvation**

*Christian Suarez, University of California, Santa Barbara (Sanford-Burnham Medical Research Institute), Undergraduate*

As Type 2 diabetes plagues our society, a better molecular understanding is required. A previous study has shown that a high-fat diet correlates with the reduction in the glucose transporter 2 (Glut2) on the surface of pancreatic beta cells diminishing the glucose-stimulated insulin secretion. This was due to a decrease of GnT-4a glycosyltransferase expression and thus N-linked glycosylation of Glut2 within the pancreatic beta cells. Starvation alters metabolic mechanisms, including the reduction of insulin and the ability of certain tissues to take in glucose in order to maintain stable glucose levels within the blood. By subjecting wild type mice to 72 hours of starvation, we want to observe whether similar molecular events observed in the high fatty acid diet resurfaces. Collected data show that there is a reduction in GnT-4a glycosyltransferase critical for the stability of Glut2 in the pancreatic beta cell membrane. However, further analysis of controls and additional trials still remain. Methods include histology to visually observe Glut2, and flow cytometry and ELISAs to quantify the Glut2 in 24 hour intervals along with qPCR to quantify

the expression of the GnT-4a glycosyltransferase gene. We expect data to show that there are similarities to the results from a high fatty acid diet, which include the decrease of GnT-4a glycosyltransferase leading to the reduction of Glut2 in the pancreatic beta cell membrane. This contributes to our hypothesis that this pathogenic mechanism is based on an advantageous response for energy conservation to prolong functional blood glucose levels during starvation.

*biochemistry/molecular biology*

### Studying the Folding Pathway of Truncated and Full-Length Human Serum Albumin via FCS

*Michael Giordano, The College of New Jersey, Undergraduate*

Single molecule fluorescence correlation spectroscopy (FCS) can be used to determine the specific folding pathway of a fluorescently labeled protein. Fluorescence correlation spectroscopy measures the fluorescence intensity fluctuations caused by single molecules entering or leaving the observation volume. Here, Alexa-Fluor 488 labeled human serum albumin (HSA) was characterized using FCS. Human serum albumin is a protein with three domains that is abundant in human blood plasma and has a multitude of functions such as transporting hormones and fatty acids. This model protein was studied via FCS in a range of denaturant concentrations to identify occupied intermediate states along its folding pathway. A truncated HSA containing only domain 1 was also studied. The FCS data was analyzed to extract the diffusion time associated with the protein molecules. The diffusion time can be used to calculate the radius of hydration of the labeled protein which is related to the protein conformation. Identifying the conformations of both the full-length HSA and of only domain 1 in different denaturant concentrations allows us to gain a better understanding of the specific folding pathway undergone by HSA during denaturation.

*chemistry*

### Low Energy Gap Conjugated Donor-Acceptor Polymers for Organic Photovoltaics

*Kin Lo, Georgia Institute of Technology, PhD Candidate*

Organic photovoltaics (OPVs) are one of the applications in the organic electronics field. OPVs use semi-conducting  $\pi$ -conjugated organic materials to convert energy from the sun into electrical energy. Advantages of OPV include: 1. Non-energy intensive, solution processable, and low-cost manufacturing; 2. Endless potential of material choices by tailoring polymer structures to achieve desired physical and electronic properties. This poster will focus on the design, synthesis, and properties of the light absorption materials in OPVs.

We Make Everyday Life Better Every Day

THE CLOROX COMPANY

We invite you to be part of an organization that improves the world around us with the unique ideas and innovation that only you can bring.

Please view our career opportunities online and reference Out to Innovate.

The Clorox Company is an EEO/Affirmative Action Employer. [www.TheCloroxCompany.com/careers](http://www.TheCloroxCompany.com/careers) NI-19115

SEE THE SOLUTION BEHIND THE SOLUTION

BE A PART OF THE SOLUTION

We are thinkers. Dreamers. Believers. And doers. We are solutionists. And we believe that together, the elements of science and the human element can solve anything. Learn more about career opportunities at Dow at [www.careersatdow.com](http://www.careersatdow.com).

We are all Solutionists. **Solutionism. The new optimism.™**

It takes a wide array of perspectives  
**to save and improve lives  
around the world.**



Merck's diverse employees offer a broad set of talents, experiences, and backgrounds to address today's complex health challenges. We are inspired by our LGBT team members and their commitment to helping us create a more inclusive workplace at Merck. Empowering their success, we offer the vast resources to create a healthier world through our portfolio of prescription medicines, vaccines, biologic therapies, and animal products.

Merck takes pride in our LGBT colleagues and is an enthusiastic supporter of **Out to Innovate**.

If you would like to work for progress, work for what matters. Work for Merck.

Learn more by visiting us at [merck.com/careers](http://merck.com/careers)

Merck is an equal opportunity employer, M/F/D/V, proudly embracing diversity in all of its manifestations.



## Merck Rainbow Alliance

*chemistry*

### **Gate-Tunable Nanostructured Devices for Heterogeneous Catalysis**

*Chris Siefe, University of California, Santa Barbara, Undergraduate*

The catalysis of various reactions has been studied for years, but with newer technology such as nanostructures and complex devices, new areas have opened up within the field of catalysis. In this research from the Moskovits Group at UC Santa Barbara, nanowires covered with metal nanoparticle catalysts are employed in field effect transistors to be utilized for more effective catalysis. By utilizing the gate tunability of a field effect transistor, in transition with the high surface area nanostructures, the goal of this research is to create better ways of controlling catalysts and learning, from an electronic standpoint, how this type of catalytic mechanism works.

*chemistry*

### **Increasing spatiotemporal resolution of several major pollutant species in the Atlanta Metropolitan Area**

*Kim Luong, Agnes Scott College, Undergraduate*

The American Lung Association cited Atlanta, Georgia, as one of the top 20 most polluted U.S. cities in 2014. Heavy air and ground transportation traffic contribute to the production of carbon dioxide (CO<sub>2</sub>), particulate matter (PM), and tropospheric ozone (O<sub>3</sub>) for the Atlanta Metropolitan Area (AMA). Hartsfield-Jackson Atlanta International Airport contributes significantly to the emission of these pollutants and their precursors. This study focuses on enhancing spatiotemporal resolution of CO<sub>2</sub>, PM, and O<sub>3</sub> in near-surface (ground to 50m) air columns by using Arduino-based sensors. Decatur, due to its proximity to the airport, is the study site for the investigation of target pollutant concentrations. The results of this study, combined with other metropolitan air quality data sets, can be used to verify projected trends and append seasonal data. An understanding of the pollutant concentration distributions throughout the near-surface air column is vital to providing insight into the fluctuation of urban area pollutants.

*computer science / software*

### **Out, a Mobile Application for LGBT People Looking to Come Out**

*Chun-Wei Chen, New York University, Graduate*

In the last decade, a number of key technological developments took place: our ability to better interpret large sets of data has made our decisions more sound; blanket availability of broadband access has enabled services to reach once isolated individuals and communities; the widespread adoption of mobile computing devices has created contextual solutions no one thought were possible. All these have inspired us to investigate how an app could help make coming out safer and more accessible. Out is an app in development that aims to: 1) Bring transparency to the coming out process with a large collection of challenge modules that can be contextualized to a user's needs (i.e., Watch an LGBT Documentary suggests movie selection based on user location). 2) Build communities and mentorship with a social network where users follow and engage with one another's challenge activities as well as receive mentorship from out community volunteers. 3) Modernize crisis-handling with better tools that enable first-responders access to, when permitted by user, his or her personal context in the form of activity data and device capabilities (location, screen, camera).

computer science / software

### **Nudge Software Development: Training Scientists in Ethical Decision-Making**

*Brent Allman, University of San Diego, Undergrad*

The poster outlines the research I did this summer at the University of Colorado, Boulder affiliated with the Leadership Alliance. I was in the lab of Dr. Robin Dowell in the BioFrontiers Institute. I was working on a piece of open-source software called Nudge that will be a tool for professors to use to teach their students how to make ethical decisions. The result will ultimately be an uninterface where professors can create case studies that their students can navigate. There are several novel features that are different from existing websites like Nudge. Nudge allows for non-linear story lines so the structure of a case study can be more like a binary tree. Additionally, decisions made in the game have stochasticity using probabilities so the storyline has unpredictability even if the user has already played through previously.

ecology

### **The Normative Foundations of Conservation Biology: The Ethics of Ecological Restoration**

*Daniel Markbreiter, Tufts University, Undergraduate*

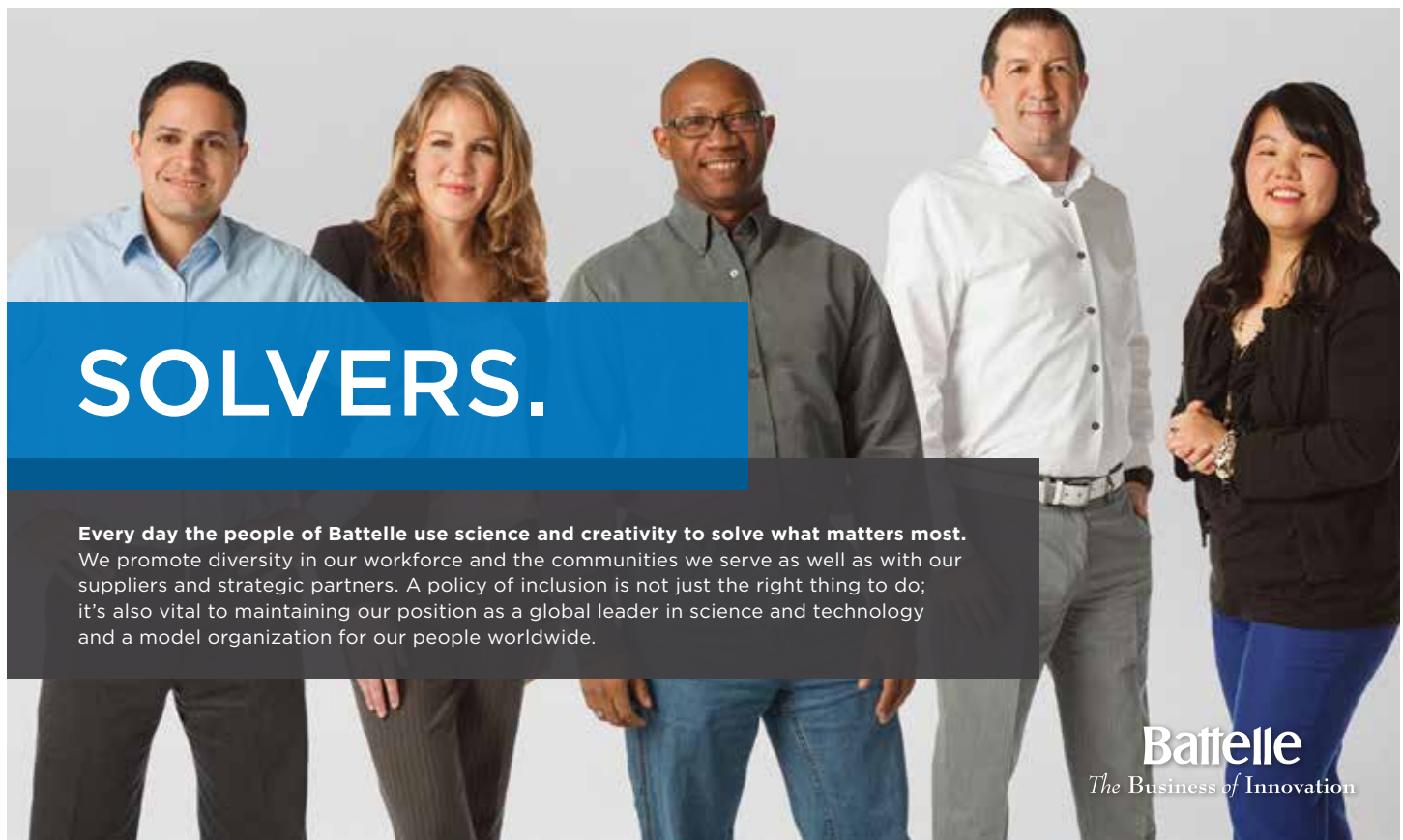
One of the foundations of conservation biology is that all biodiversity has an intrinsic value, ergo all life should be “conserved” to retain that value. Environmental ethicists have argued what exactly this intrinsic value is in order to justify the goal-oriented field of conservation biology. For my oSTEM program, I wish not to argue a justification for this value, but rather question “to what end should we conserve”. In a world of increasing globalization, a world where no virgin land remains, where humanity’s influence has reached every corner of the Earth, how can anything be conserved? In other words, how can a conservative field remain conservative in an ever changing world? In order to pose this question I wish to make use of a case study, an example of a contemporary attempt to conserve an environment (in this case, using a project that I worked on for 4 summers at an Army Corp conservation research facility). I will deconstruct the project and its goal to exemplify the normative foundation that it operates on, thereby allowing me to introduce how its foundations, like in so many other cases, is obsolete. I will then present a couple theories that are more compatible with our modern era and then put it to discussion.

ecology

### **Plant-Soil Feedbacks Influence Arctic Carbon Storage**

*Carly Phillips, University of Georgia, Graduate*

Arctic tundra is experiencing an unprecedented rise in temperature. One consequence of warming is the proliferation of woody shrubs across previously grassy tundra. The fate of arctic soil carbon has major implications for global climate change as tundra soils store more than twice as much carbon as is currently in the atmosphere. Models and ecosystem-scale observations suggest that areas of shrubs are a net source of carbon to the atmosphere, however the mechanism driving this imbalance is unknown. My research begins to address this by investigating the soil impact of three shrub species (*Betula nana*, *Salix pulchra*, and *Alnus fruticosa*). Using soils collected on the North Slope of the Brooks Range in Alaska, I incubated shrub-conditioned and non shrub-con-



**SOLVERS.**

**Every day the people of Battelle use science and creativity to solve what matters most.** We promote diversity in our workforce and the communities we serve as well as with our suppliers and strategic partners. A policy of inclusion is not just the right thing to do; it's also vital to maintaining our position as a global leader in science and technology and a model organization for our people worldwide.

**Battelle**  
The Business of Innovation



ditioned soils (organic and mineral layers) from each species with corresponding root and leaf litter, and measured rates of CO<sub>2</sub> efflux. I found strong evidence of plant-soil conditioning (greater CO<sub>2</sub> efflux from shrub soil with added shrub litter substrate) in the organic layer of each species, but no response in the mineral layer except for *B. nana*, which could indicate selection for microbial species that can better breakdown shrub material. This research has led to new questions about nutrient co-limitation and shrub root symbionts that I will explore in my continuing dissertation research.

*ecology*

### **Temporal variation in reproductive costs for a Neotropical milkweed, *Asclepias curassavica***

*Kimmy Kellett, Odum School of Ecology, University of Georgia, Graduate*

Understanding how reproductive schedules are shaped is a primary goal of evolutionary ecology. Life history theory predicts that reproduction incurs a cost to some aspect of survival, such as investment in growth or defense. For long-lived organisms that reproduce multiple times, these costs may vary as external selective pressures and resource availability change throughout time. In the seasonal Neotropics, many species of plants reproduce throughout the year, despite drastic seasonal variation in rainfall. In this study, we used data from demographic censuses conducted every three months on populations of Neotropical milkweed, *Asclepias curassavica*, growing in San Luis de Monteverde, Costa Rica to examine how costs of reproduction vary from season to season, as well as from year to year. We found that reproduction occurs at a cost to growth, but only for small plants. We also found that this cost was higher during wet months than during dry months. Reproductive costs did not vary significantly among years. This study emphasizes the role that temporal variation, especially seasonal variation, may play in shaping the reproductive schedule of Neotropical plant species.

*ecology*

### **The scale of local adaptation and capacity to adapt: A study of seed source constraints**

*Nicholas E. Goldsmith, University of Minnesota, Graduate*

Rapid global change has raised questions about the capacity of species to persist under novel conditions. A population's persistence depends on the distribution of fitness and its underlying genetics. Mean fitness is a measure of a population's current adaptation to an environment, and can be used to assess local adaptation. Additive genetic variance is a measure of a population's potential to adapt. Statistical issues have hindered previous assessment of the additive genetic variance for fitness, but aster models with random effects provide a more robust means of calculation. Both mean fitness and additive genetic variance for fitness are unique to a given population in a given environment. Using pedigreed populations of *Rudbeckia hirta* (Asteraceae, Black Eyed Susan), I assess the distribution of fitness for two source populations planted in a single common garden experimental plot. One season of field data will be presented.

*ecology*

### **Small-Mammal Occupancy in Freshwater Marshes of Mandalay National Wildlife Refuge, Louisiana**

*Eric Tobin, University of Louisiana at Lafayette, Department of Biology, Graduate*

Small mammals are key consumers in the marsh food web and could serve as indicators of a marsh's potential to support higher-level predators. We studied how small mammal occupancy varied among plant communities in coastal Louisiana freshwater marshes. We sampled small mammals at 36 sites on 4 different occasions during the late spring in freshwater marshes of the Mandalay National Wildlife Refuge, LA. Mammalian diversity was low; we captured only *Oryzomys palustris* (Marsh Rice Rats). Occupancy modeling revealed a positive association between Marsh Rice Rat site occupancy and *Sagittaria lancifolia* (Bulltongue Arrowhead) biomass. Our data suggest that subtle changes in plant-species composition within a marsh may affect the distribution of the most common small mammal in the ecosystem.

*ecology*

### **Disease risk perception and safety practices: A survey of Australian flying fox carers**

*Cecilia Sanchez, Yale, Graduate*

In Australia, a number of volunteer rehabilitators care for injured, ill, and orphaned fruit bats (flying foxes). Of concern to carer health is the fact that flying foxes are reservoir hosts of several diseases that can be passed to humans. Daily interactions with flying foxes pose a risk of disease transmission to carers. A survey was conducted to gather demographic data, assess disease risk perception among carers, and explore the safety practices that carers employ and the reasons underlying their actions.

*materials*

### **Analysis of Portland Cement Mortar Under Impact**

*Nathan Mayercisk, Georgia Institute of Technology, Graduate*

While experimental testing remains the most effective tool for studying the dynamic behavior of concrete, given the potential for variability in these materials and in their construction and loading conditions, mitigating the effects of impact loading on critical concrete structural systems and reducing human vulnerability in the wake of such events remains an important challenge for engineers. To that end, we have combined materials characterization, micromechanics modeling, and dynamic testing to develop a constitutive model to understand the effects of flaw sizes, shapes, and size distributions on the dynamic response of cement-based materials.

LISTEN.  
THINK.  
SOLVE.®



## Diversity is Good Business at Rockwell Automation

By diversifying our work force and our supply chain, we gain access to new sources of expertise and experience while contributing to the economic growth of communities where we do business.

At Rockwell Automation, we view diversity as a powerful tool for achieving our business objectives.

Come join us at Rockwell Automation  
[www.rockwellautomation.com/careers](http://www.rockwellautomation.com/careers)

**Rockwell  
Automation**

 Allen-Bradley • Rockwell Software

LISTEN.THINK.SOLVE. is a trademark of Rockwell Automation, Inc. Copyright © 2014 Rockwell Automation, Inc. All Rights Reserved.

*math*

### **A Family of Koszul Cohen-Macaulay Normal Domains**

*Gabriel Sosa, Purdue University, Graduate*

Generalizing techniques that prove that Veronese subrings are Koszul, we show that Rees and multi-Rees algebras corresponding to sets that are closed under comparability are Koszul. We provide Gröbner basis for the defining ideals of these multi-Rees algebras with squarefree initial monomials, to show that they are also normal Cohen-Macaulay domains.

*microbiology*

### **Characterization of Mature Biofilms in a Chloraminated Municipal Drinking Water Distribution System**

*Michael Waak, University of Minnesota, Graduate*

In a municipal drinking water distribution system (DWDS), the selective pressures of a residual disinfectant (i.e. chloramine) and low nutrient levels create unique biofilm communities. Such communities may have detrimental consequences including: (1) influence or enhance corrosion of iron water mains, (2) shed potentially pathogenic microorganisms into the drinking water, and (3) alter water chemistry, such as depletion of the residual disinfectant to undesirably low concentrations. Knowledge of microbial communities (e.g. quantity, composition, and function) provides important insight for assessing the risks to water consumers and our aging water distribution infrastructure. We expect that such knowledge will lead to strategies for manipulating microbial communities to mitigate those risks.

*neuroscience*

### **Analysis of Microglia in the Visual Cortex Acutely and Long Term After Early Life Alcohol Exposure**

*Nina Lutz, Tufts University, Undergraduate*

Microglia are best known as the primary immune cells of the central nervous system, undergoing rapid morphological changes in response to immune insult. Recent research has suggested that microglia also play an active role in brain plasticity and development, interacting with neurons and contributing to dendritic spine pruning. Both the pathological and physiological functions of microglia are potentially important in the brain's response to alcohol, especially in connection with Fetal Alcohol Spectrum Disorder (FASD). An estimated 5 percent of children in the United States are born with FASD, a cluster of disorders caused by alcohol consumption during pregnancy and the leading non-inheritable cause of intellectual disability. To understand how alcohol exposure during the brain growth spurt period affects microglia acutely and in the long term, we quantitatively studied the morphology,

density, and distribution of microglia in layers II/III of primary visual cortex at postnatal days 10 and 28 after a six day binge alcohol exposure in young mice. Based on current literature, we expected alcohol exposure to trigger microglial morphological changes indicative of activation, increased density, and a less homogenous distribution, both at P10 and P28. However, we found no significant results at either age group in any of the analyses.

microbiology

**Microbial responses associated with non-native plant invasions are related to undisturbed forest soil characteristics**

Mark Anthony, The University of New Hampshire, Graduate

Invasion by non-native invasive plants threaten global sustainability and forest health. Allelopathic invaders produce novel biochemicals that negatively interact with native plants and symbiotic microbes, which have not evolved tolerances to the defensive plant trait. In particular, the noxious invader, garlic mustard (*Alliaria petiolata*), produces allelochemicals that inhibit mycorrhizal fungi, which positively associate with 90% of all vegetation and are considerable reservoirs of belowground carbon. In this study, I explored how garlic mustard invasion in temperate mixed forests influences the community composition and biomass of soil microbes. Microbes were analyzed by their phospholipid fatty acid profiles and through amplicon sequencing of the fungal ITS2 gene. I measured soil nutrient pools, net rates of nutrient production and soil edaphic properties. Microbial responses varied significantly based on geography, and native soil and regional climate variables were used to model microbial responses to invasion across geographic position. An important group of mycorrhizal fungi (*Glomeromycota*) were only negatively influenced by invasion when inorganic nitrogen availability was high in a forest. Invasion was also associated with the synchronization of microbial communities and nitrogen cycling, which may feed-back positively into the invasion process of garlic mustard while reducing soil C sequestration.

microbiology

**Analysis of the Genetic Characteristics of Clinical and Related Environmental Strains of the Environmentally Transmitted Pathogen *Vibrio parahaemolyticus***

Feng Xu, University of New Hampshire, Graduate

There has been a dramatic increase in laboratory confirmed cases of *Vibrio parahaemolyticus* infections in New England where infections had been previously rare suggesting changes in this region have either led to the emergence of pathogens from endemic populations, or the invasion of infective strains from elsewhere. Although surveillance of *Vibrio sp.* in New England has not been routine, *V. parahaemolyticus* endemic to New Hampshire has been under study for several decades, and the population structure determined from several hundred isolates collected since 2007 provides an excellent reference data set for understanding changes in disease incidence. Clinical isolates from cases of infection including wound and gastric infections occurring in Massachusetts from 2010-2013 were analyzed for genetic markers associated with clinical strains, and were typed by multi-locus sequence analysis (MLSA) of five housekeeping genes to identify the origin of strains of concern in the region. Strains frequently contained one or both hemolysin genes, including *tdh* and *trh*; however, one isolate lacked both hemolysin genes. As is common, disease in the



**Advancing each generation through diversity and inclusion.**

Innovating for more than 125 years, we've learned that the best way to achieve great ideas is through open minds and an open workplace. Alcoa is honored to achieve the Corporate Equality Index top score of 100 percent for five consecutive years and to be named one of HRC's 2014 Best Places to Work for LGBT Equality.

[www.alcoa.com/diversity](http://www.alcoa.com/diversity)

Advancing each generation.



region is polyphyletic, with many unique strains causing infections. Very few strains were sequence types of known identity but included among them the pandemic (i.e. serotype O3:K12) lineage. Strains that had caused wound infections were closely related. One dominant clonal lineage recurrent in multiple years was identified by this approach with a never before reported MLSA type. This clade was most closely related to a single environmental isolate from New Hampshire suggesting these strains represent emergent endemic pathogens. Through combined genome sequencing and comparison of strains of concern with closely related environmental strains, we may be better able to understand the evolution of virulence and drivers of disease emergence in the region, and more practically develop targeted surveillance methods.

*neuroscience*

### **Critical periods for synaptogenesis may define a therapeutic window for Autism Spectrum Disorders**

*Samuel Hulbert, Duke University, Graduate*

Autism Spectrum Disorders (ASD) have long been considered to be irreversible developmental disorders. However, little work has been done to determine when these irreversible changes occur, which will be crucial when determining suitable intervention. Monogenic knockout mice are well suited for this question, because we can selectively manipulate the known cause of a syndrome at discrete developmental milestones. By taking advantage of the well-characterized gene that causes Phelin-McDermid Syndrome, we will use a tamoxifen-inducible Cre line of mice crossed with a line of mice with the entire coding region (exons 4-22) of Shank3 floxed to completely knockout Shank3 expression at various prenatal and postnatal developmental time periods corresponding to the time of tamoxifen injection. Because Shank3 has been implicated in synapse development in vitro, we hypothesize that knocking out expression of Shank3 prior to the completion of synaptogenesis will recapitulate the behavioral, cellular, and molecular abnormalities that have been observed in the germline knockouts of Shank3. Regardless of the results, this project will help uncover the appropriate time for intervention to help alleviate the core symptoms of ASD.

*physics*

### **Understanding the Structure of Normal Matter**

*Ells Long, University of New Hampshire, Post Doctoral Research Associate*

For nearly a century, physicists have been studying how protons and neutrons work, asking questions about the internal structure of each and building towards an understanding that connects what happens at the quark level to the structure of protons and neutrons to how individual nucleons come together to make an atomic nucleus. In just the past few decades, our understanding of this internal structure of nucleons has been greatly increased thanks to developments of high-energy electron accelerators and spin-polarized targets. This poster will go over the history of these discoveries and detail current developments that are under way which will pave our understanding of the stuff inside of every atom.

*physics*

### **Detecting Cerenkov Radiation from Radioactive Sources using CCDs**

*Kim Luong, Agnes Scott College, Undergraduate*

Cerenkov Radiation (CR) production from radioactive sources is a well-known phenomena, producing small numbers of photons for each radioactive decay involving a charged particle within a medium, such as water. This study uses a number of high energy beta emitters in order to produce CR in water to characterize the overall intensity in relation to the activity of the sources. By utilizing a peltier-cooled charge-coupled device (CCD), noise within the camera can be reduced such that extremely low intensity values, corresponding to discrete numbers of photons, can be observed. These values for number of photons are then compared to simulated data to check correspondence between theory and experiment. An application for this research is Cerenkov Luminescence Imaging (CLI), a new imaging modality in the field of medicine, which has direct applications relating to oncology treatment. Due to the nature of CR production, CLI is capable of providing real-time data on dosage location, making it a powerful tool.

*physics*

### **Total Reaction Cross Sections and the Emission of High-Energy Light Fragments in MCNP6 and CEM**

*Leslie Kerby, University of Idaho and Los Alamos National Laboratory, Graduate*

Total reaction cross section models have a significant impact on the predictions and accuracy of spallation and transport codes. The Cascade Exciton Model (CEM) code CEM03.03 and the Monte Carlo N-Particle transport code (MCNP6), both developed at Los Alamos National Laboratory (LANL), each use such cross sections for different purposes. While total reaction cross sections are used throughout the transport and spallation models, there are two main utilizations. MCNP6 uses total reaction cross sections to determine where a reaction occurs (thru the mean-free path length), and then with what nucleus the projectile interacts with, and lastly what type of interaction it is (inelastic or elastic). CEM uses total reaction cross sections as inverse cross sections to predict what the excited nucleus emits. Upgrading the cross section models used has proven to improve the accuracy of our predictions with experimental data.

*robotics*

### **Tensegrity Robotics: Simulation, Design, and Control**

*Drew Sabelhaus, UC Berkeley, Graduate*

A prototype tensegrity robot, SUPERball, has been built at NASA Ames Research Center and is currently undergoing testing. Actuated tensegrity structures offer opportunities for unique movement and locomotion methods, which NASA hopes to leverage for

inexpensive autonomous planetary missions. Tensegrity robots are comprised of purely tensile and compressive elements (cables and rods) that change shape when their tensions are adjusted. This robot rolls by deforming its spherical outer structure. The design and control of SUPERball were accomplished with new simulation tools, such as the NASA Tensegrity Robotics Toolkit (NTRT), which allowed the development of state trajectories for locomotion planning.

*statistics*

### **The P (Thurs) Statistic with Worked Examples**

*Dr D B Karron, Self Employed, Non Visiting Scientist*

The Thurs(P) is a measure of diversity, the variance (square of variation), and is the ratio of the variability in one cell vs the total variance in the row, col and matrix. High stakes examination with right and wrong answers promote reduction to the mean of low variability right wrong answers. In the days of Hollerith Cards and Scantron/#2 pencil answer sheets, the cost of considering all student responses was too high. Only right answers counted, wrong answers were worthless. But we show here wrong answers contain clues as to the student cognitive styles, and cognitive maturity. We seek to embrace and empower student answers, not cull student herds to only the best for government and university quotas. Human nature is diverse and perverse, and we need statistical methods to embrace human nature, not try to reduce it to the mean. The answer matrix, the diagonal is the unchanged answer, and the off diagonal is the diverse and perverse we seek to quantify without reducing the information content.

*activism*

### **Queer Blood Drive**

*Austin Beltrand, student, Undergraduate*

oSTEM at UCLA plans to host a school-wide Queer Blood Drive on National Youth HIV & Aids Awareness Day in order to protest the FDA's lifetime ban on MSM donors. All MSMs would symbolically donate through a non-MSM donor. One letter per donor would be sent to various government representatives in order to effect change, along with a statement signed by UCLA experts demonstrating the law's ethical, biological, and statistical inadequacy. By presenting this plan at this conference, we hope to nationalize the campaign. On a more local scale, oSTEM at UCLA would use the blood drive to highlight a UCLA policy that allows non-MSM faculty members to receive vacation time or money for donating blood. The policy effectively robs MSM faculty members of monetary compensation for blood that they should be able to donate.

*education*

### **The Future of Research Symposium**

*Gary McDowell, Tufts University, Postdoc*

The landscape of scientific research and funding is in flux, affected by tight budgets, evolving models of both publishing and evaluation, and questions about training and workforce stability. As future leaders, junior scientists are uniquely poised to shape the culture and practice of science in response to these challenges. The Future of Research symposium aims to give voice to graduate students and postdocs in the ongoing dialog about policies that shape the scientific establishment. The symposium, first occurring in Boston October 2-3 2014, consists of talks and panel discussions on issues affecting the future of science as well as breakout sessions to expand on these topics. The conference will give young scientists a voice in defining the future culture and practice of science. Furthermore, we will begin the process of working with policy-makers, administrators, and senior scientists on achieving needed change. This poster will report on the findings of the symposium and continue the discussion.

*leadership*

### **Mental Management and Becoming a Good Leader**

*Trinity Wallace, Capitol College, Undergraduate*

Members of oSTEM @ Capitol College will discuss ways fear holds many people back from leadership and taking advantage of opportunities as well as way to reprogram the mind to for positive thinking and building confidence. Five steps to having more confidence will be addressed: intention, integrity, competency, momentum, and community. The poster will speak to those in leadership positions and those who want to be a leader but are not because they do not think they can.

*student activity*

### **HackPSU - Penn State's Hackathon**

*Christina Platt, Penn State University, Undergraduate*

HackPSU is an annual student-run hackathon, now in it's fourth year of existence. Powered by Innoblue, the entrepreneurship community at Penn State University, it is a goal of HackPSU to promote innovation in at Penn State and in the surrounding area. We bring students and sponsors from around the country to participate in a thirty-six hour long hackathon, being held this year in the beautiful Information Sciences and Technology bridge at the University Park campus on March 27-29, 2015. Just a few short years ago, the first HackPSU kicked off with only 60 attendees. Fast forward to today, and a hacker culture is in full bloom, and student-entrepreneurs can be found all over campus. The theme for this year is both easily accessible to beginners and universal to all students at HackPSU -- Hack Your College Experience. The tech industry is consistently dominated by straight white males, despite efforts being made to promote minorities in tech. Innovation thrives where there is diversity and people from all walks of life bring ideas to the table. As a female in STEM, I am reaching out to women in the tech industry and to clubs for women in STEM on campus. As someone who identifies as gay in STEM, I now want to open the door to the LGBT community at Penn State to also discover a love for technology and innovation.



OUT IN SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS

## *Diversity Innovates*

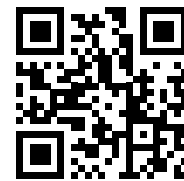
**oSTEM is a national society** dedicated to educating and fostering leadership for LGBTQA communities in the STEM fields.

**oSTEM's mission:**

To educate, empower, and engage a diverse community,  
To identify, address, and advocate for the needs of LGBTQA students in the STEM fields,  
And we fulfill these needs through mentorship connections, networking opportunities, strategic collaborations, and professional/leadership development.

**National Board:**

Eric Patridge (President)  
Denise Conner  
Matt Feczko  
AP Fritts  
Jeffrey Loh  
Elena Long  
Adam Stoffel  
Website: [www.ostem.org](http://www.ostem.org)



## *Science and Engineering with PRIDE*

**NOGLSTP is a professional society** that educates and advocates for lesbian, gay, bisexual, transgender, and queer students and professionals in science, technology, engineering, and mathematics.

**NOGLSTP's Mission:**

Empower lesbian, gay, bisexual, transgender, and queer individuals in science, technology, engineering, and mathematics by providing education, advocacy, professional development, networking, and peer support.

Educate all communities regarding scientific, technological, and medical concerns of lesbian, gay, bisexual, transgender, and queer people.

**Board of Directors:**

Rochelle Diamond (Chair)  
Chris Bannochie  
Barbara Belmont  
John Burke  
Marcie Mathis  
Tim Wilson  
Website: [www.noglstp.org](http://www.noglstp.org)



Both oSTEM and NOGLSTP are grateful for the following  
Founding Sponsors and Advancing STEM Sponsors:



The Official Media Sponsors for *Out to Innovate*<sup>™</sup> and oSTEM:



Both oSTEM and NOGLSTP are grateful for the following  
Event Sponsors and Professional Development Sponsors:





Both oSTEM and NOGLSTP are grateful for the following Event Supporter and Innovation Sponsor:



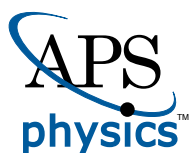
Both oSTEM and NOGLSTP are grateful for all of the following Event Partners:



HUMAN RIGHTS CAMPAIGN



Thank you to our Event Associates:



WHAT I LIKE TO DO IS

MAKE A

SIGNIFICANT CHANGE

WORLD  
IN THE

FOR GOOD.

– Blake Irving  
GoDaddy Chief Executive Officer

GoDaddy is proud  
to sponsor the  
Out to Innovate conference.



## Workshop Schedule Grid

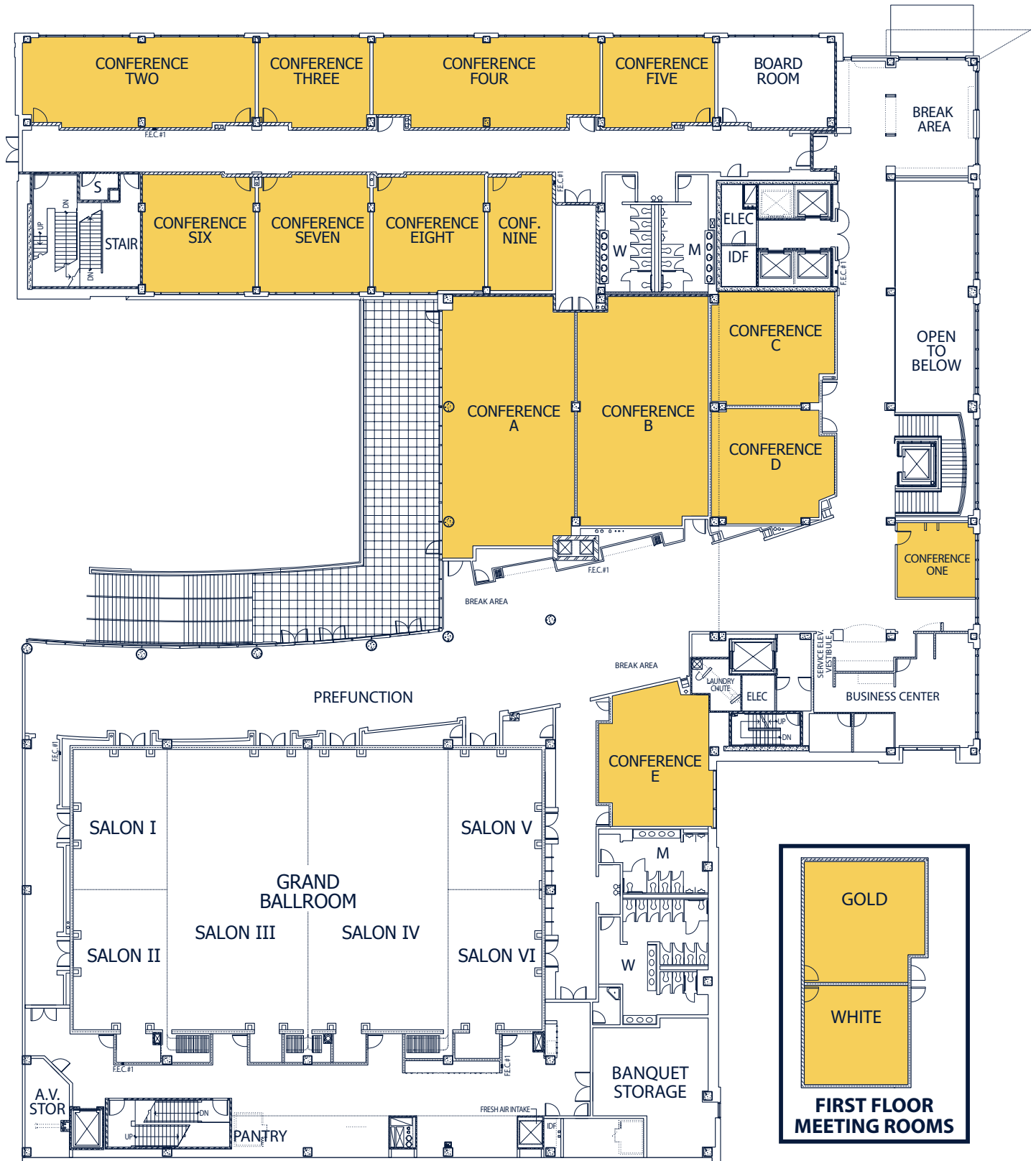
### Saturday November 8, 2014

Session: Time:	1 10:00 am	2 11:15 am	3 2:00 pm	4 4:00 pm
<b>Room:</b>				
<b>2</b>	Importance of Gaining and Being Allies	Solving the Leadership Equation	Each One, Reach One: People of Color in STEM Disciplines	The Process of Obtaining Research Funding from the Federal Government
<b>4</b>	Global STEM Research: Branching Beyond the United States	Creating a Network of Success: LGBTQ+ STEM Mentoring	Out to Lead: LGBTQ+ STEM Leaders	International Students and Partners
<b>C</b>	Mentorship Roundtable	LGBTQ+ in Your Professional Society	Trans 101	oSTEM Member and Student Meeting in Ballroom. All conference participants welcome.
<b>3</b>	Chapter Leader Roundtable	NIH Student Opportunities	Role of Product Manager in Science and Technology Innovation	
<b>D</b>	Flash Session 1	Flash Session 2	The Cloud to the Rescue	
<b>5</b>	Why are we what we are?	Life, Love, Mental Health	Exceptional Resumes for LGBTQ+ STEM Professionals	
<b>9</b>	Being a Trans* Professional (for trans* people)		MATHulinites	

### Sunday November 9, 2014

Session: Time:	5A 10:40am	5B 11:15 am
<b>Room:</b>		
<b>2</b>	Being LGBTQ+ in Corporate America	
<b>4</b>	There is Life after Transition!	
<b>C</b>		Research About LGBTQ+ People in STEM
<b>3</b>	Strategy Focus to Lead and Advance Student Groups	
<b>D</b>		Identifying Challenges & Developing Best Practices for LGBTQ+ Grad Students and Postdocs
<b>5</b>		Success at Primarily Undergrad Institutions

# Georgia Tech Hotel and Conference Center 2nd Floor Meeting Space Floor Plan



**There is a hospitality suite on the 3rd floor. This is available for all conference attendees to use if they need a quieter space for conversation or relaxation. There is a private restroom available here as well.**

**The two restrooms next to the ballroom are unisex restrooms.**