BASSCONNECTIONS

Duke University

2015-2016 *Annual Report*

Duke UNIVERSITY | BASS CONNECTIONS

CONTENTS

MESSAGE FROM LEADERSHIP

As we complete the third year of Bass Connections, we are pleased to share with you this report on activities and accomplishments for 2015-2016. We have reached a juncture for reflection, having seen the successes—and challenges—of **MORE THAN 130 PROJECT TEAMS, WITH MORE THAN 1,300 PARTICIPANTS ACROSS DUKE'S CAMPUS AND BEYOND.** The teams have drawn on the existing strengths and interests of Duke's faculty and students in interdisciplinary research and learning, and have experimented with new ways to build intellectual communities and conduct collaborative research.

SINCE THE INCEPTION OF THIS INNOVATIVE PROGRAM IN 2013, WE HAVE SOUGHT TO LEARN AS MUCH AS WE CAN FROM IT, CREATING A ROBUST EVALUATION FRAMEWORK THAT HAS GENERATED NUMEROUS INSIGHTS ABOUT HOW TO IMPROVE PARTICIPANTS' EXPERIENCES AND THE EFFECTIVENESS OF TEAMS. We have learned, for example, that graduate students play pivotal roles within Bass Connections projects. Because the teams include faculty and undergraduate students, often most familiar with a lecturer-learner model, graduate students often become facilitators who serve as project managers and additional mentors for undergraduate participants. We have similarly learned that teams can assume a remarkable diversity of sizes and modes of organization. But regardless of structure, the fashioning of clear role definitions for participants has stood out as a key element in the recipe for success.

IN JUST THREE YEARS, WE ARE ALREADY SEEING THE IMPACT OF THE PROBLEM-FOCUSED, COLLABORATIVE PROJECTS IN BASS CONNECTIONS. Teams have informed government policy, engaged communities in sharing and learning and contributed to original research around problems in health, brain science, energy, "big data" and education, all broadly conceived. We have also been gratified to track the many ways that faculty and students are extending their experiences beyond the year-long project teams. Students have linked their team experiences to other signature Duke programs, like DukeEngage and Study Abroad. Bass Connections students are completing senior theses at a higher rate than other students at Duke (33% compared to 22% of the senior class as a whole). Faculty members have been inspired to develop new courses that tackle big issues through interdisciplinary approaches and collaborative assignments, or to infuse existing courses with these exciting features. Some of our themes have also constructed intensive summer experiences under the Bass Connections umbrella, such as the highly successful Data+ program in the Information, Society & Culture theme.

DURING 2015-2016, IN COLLABORATION WITH THE FACULTY LEADERSHIP OF BASS CONNECTIONS, WE SET AMBITIOUS GOALS FOR THE PROGRAM TO MEET WITHIN ITS FIRST TEN YEARS. We aim to have a diverse set of educational offerings within each theme, to engage students at all levels and, where appropriate, to see the Bass Connections model of engaged, collaborative inquiry diffuse more broadly throughout the Duke curriculum. We will be working to ensure that two-thirds of Bass Connections project teams will engage an external partner, three-quarters of all teams will have a graduate or professional student as a project manager and all teams will produce societally relevant research. We further aspire to launch one additional theme that will expand our reach across the rich domains of scholarly expertise at Duke, the focus of which will be determined through an inclusive, university-wide process.

We hope you enjoy reading about the remarkable work that Duke faculty, students and staff are accomplishing through Bass Connections, increasingly in partnership with external organizations ranging from government agencies and international NGOs to corporations and community groups. The highlighted narratives offer merely a selection of the many stories that have emerged from the past year's impressive research and engagement. We sincerely thank those who have been involved in this innovative program so far, including the committed faculty leadership and staff of our partner university-wide institutes and initiatives, and look forward to continuing to facilitate the remarkable creativity that has become a hallmark of intellectual life at Duke.

EDWARD J. BALLEISEN
Vice Provost for Interdisciplinary Studies

eballeis@duke.edu

HALLIE KNUFFMAN
Director, Administration and Program Development

hallie.knuffman@duke.edu

"Bass Connections has been, by far, the best learning experience I have had in my life."

THE BASS CONNECTIONS MODEL

A Distinctive New Model for Education

Having just completed its third year, Bass Connections bridges the classroom and the real world, giving students a chance to **ROLL UP THEIR SLEEVES AND TACKLE COMPLEX SOCIETAL PROBLEMS ALONGSIDE WORLD-CLASS FACULTY** from across Duke. Working in teams, students at all levels collaborate with faculty and postdocs on cutting-edge research that spans subjects and borders.

Named in honor of founding donors Anne T. and Robert M. Bass P'97, the program exemplifies Duke's commitment to interdisciplinary research and teaching as a vital part of the university's mission. For more than two decades, Duke has linked collaborative inquiry across disciplines to the imperative of seeking out knowledge in the service of society. **THE BASSES' $50 MILLION GIFT HAS SPARKED A NEW APPROACH TO THE EXPLORATION OF MAJOR SOCIETAL CHALLENGES**; by including a $25 million matching challenge, the donation has inspired dozens of others to support the program.

Through initiatives like Bass Connections, Duke equips students to **GRASP THE MULTIPLE DIMENSIONS OF COMPLEX PROBLEMS AND TO TACKLE SUCH DILEMMAS WITHIN TEAMS**. The global nature of these endeavors calls for many teams to extend their research activities beyond campus.

TO DATE, BASS CONNECTIONS TEAMS HAVE WORKED IN 23 COUNTRIES ON FIVE CONTINENTS IN ADDITION TO CITIES AND TOWNS IN THE U.S. AND RIGHT HERE IN DURHAM.

> Bass Connections helped me realize my passion, mold my career goals and discover my strengths.

Vision

TO CREATE A DISTINCTIVE NEW MODEL FOR EDUCATION, predicated on collaborative and interdisciplinary inquiry, that actively engages students in the exploration of big, unanswered questions about major societal challenges

Goal

TO ELEVATE THE IMPORTANCE OF EXPLORING SUCH CHALLENGES BY:

1. Engaging faculty, undergraduate and graduate/professional students in teamwork
2. Integrating disciplinary approaches and professional practice
3. Applying knowledge, research and skills in problem-solving, with engagement from community partners

Objectives

1. Students at all levels **GAIN PROBLEM-CENTERED EXPERTISE AND TEAM-ORIENTED SKILLS** and use them to pursue research across disciplines that explores societal and cultural challenges.
2. Faculty members **INTEGRATE EDUCATION, RESEARCH AND OUTREACH** to explore societal and cultural challenges within specific themes.
3. Themes support and administer project teams and **DEVELOP CURRICULAR PATHWAYS** into, through and beyond teams, fostering cohesive, problem-centered education.
4. Duke administration, departments, schools and institutes make infrastructure and programmatic changes that **FACILITATE, SUSTAIN AND PROMOTE** the above objectives.

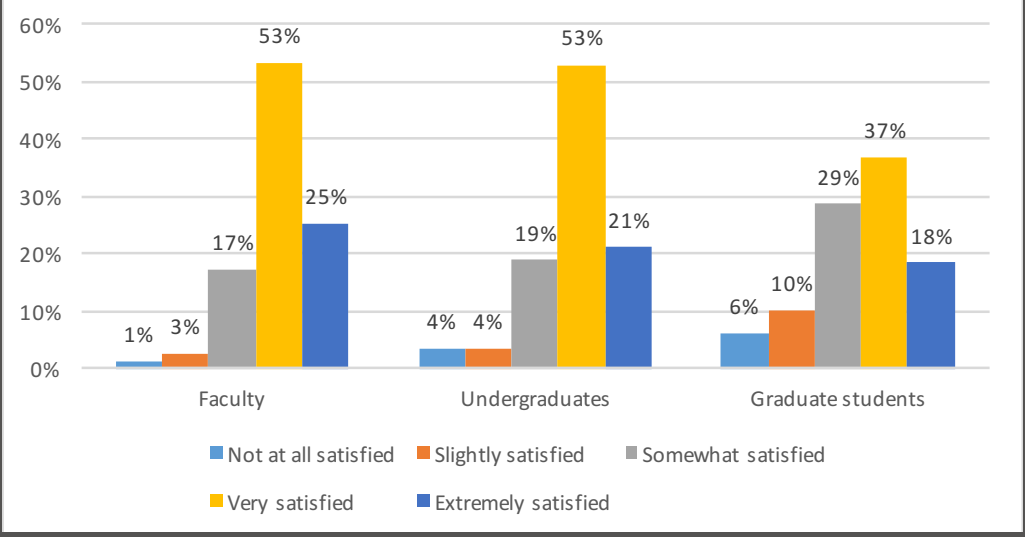
A Bass Connections team member and leader work with a community partner in Madagascar

PROGRAM EVALUATION

An annual evaluation helps Bass Connections leadership to improve the program and to understand its impact on students, faculty and the societal issues addressed through the projects.

As during our first two years, we administered an end-of-year survey in April 2016. The vast majority of students who participate in a Bass Connections project team have a positive experience, and **97% OF UNDERGRADUATE STUDENTS SAID THAT THEY WOULD RECOMMEND THE PROGRAM TO A FRIEND.**

OVERALL, HOW SATISFIED ARE YOU WITH YOUR BASS CONNECTIONS TEAM EXPERIENCE?



Undergraduate

After participating, undergraduates report that the program helped improve their skills and abilities in a range of areas, including communicating with a team, working with team members with diverse knowledge and gaining comfort in working with faculty and graduate students.

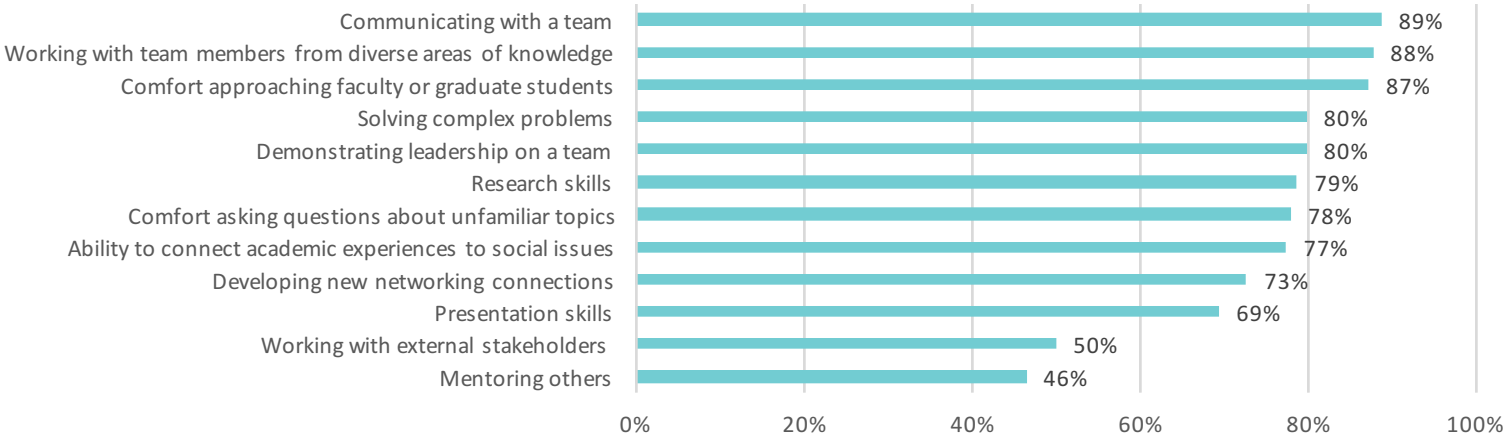
TOP REASONS FOR PARTICIPATING

77% TO GAIN RESEARCH EXPERIENCE

48% TO BE PART OF A MULTIDISCIPLINARY TEAM

32% TO BE PART OF SOMETHING INNOVATIVE

PERCENTAGE OF UNDERGRADUATE STUDENTS REPORTING A MODERATE TO GREAT IMPROVEMENT IN THEIR SKILLS IN THE FOLLOWING AREAS...



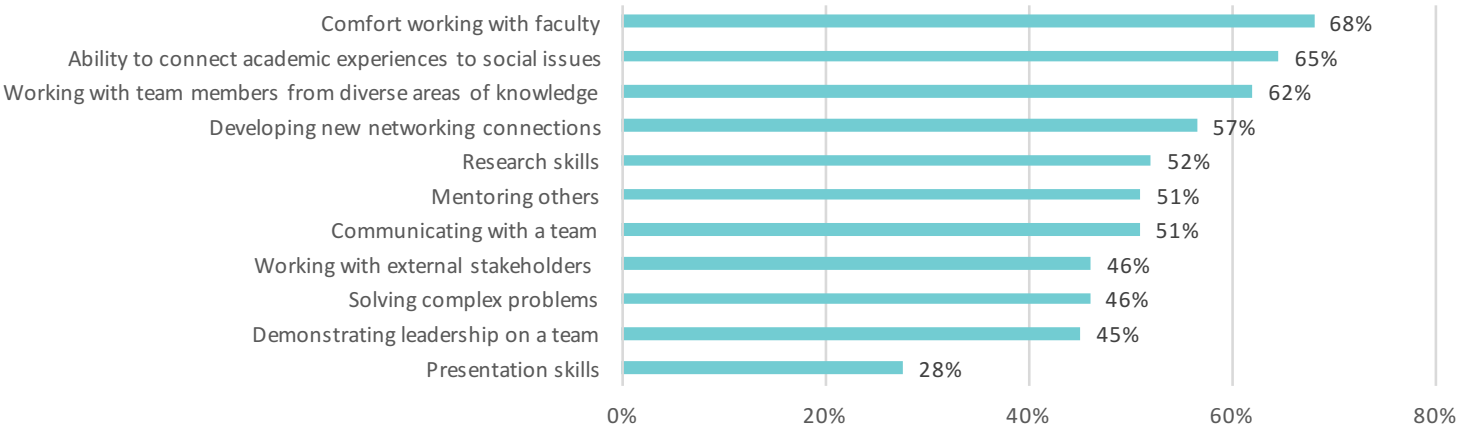
> It's an awesome opportunity to get involved with research.

Graduate

TOP REASONS FOR PARTICIPATING

- **42%** TO GAIN RESEARCH EXPERIENCE
- **40%** TO BE PART OF A MULTIDISCIPLINARY TEAM
- **32%** TO WORK CLOSELY WITH FACULTY
- **32%** TO ENGAGE WITH A NEW RESEARCH PROJECT

PERCENTAGE OF GRADUATE STUDENTS REPORTING A MODERATE TO GREAT IMPROVEMENT IN THEIR SKILLS IN THE FOLLOWING AREAS...



Faculty

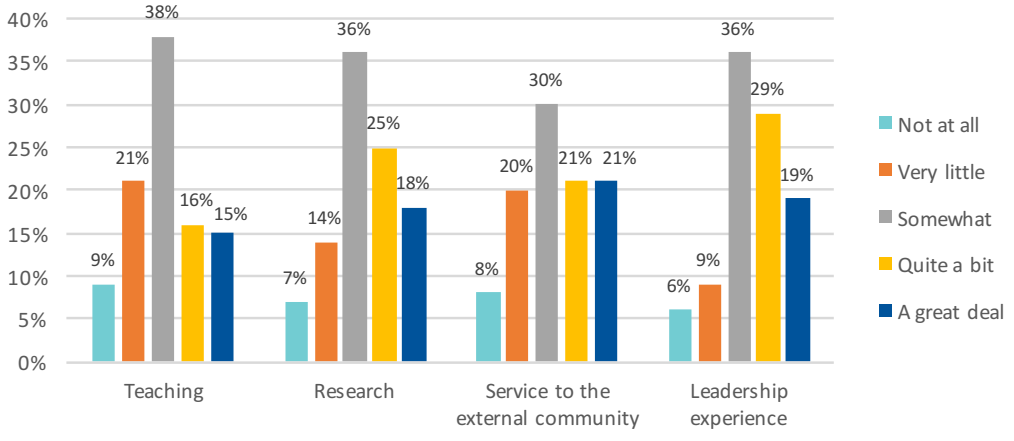
are highly satisfied with their experience

- **92%** WOULD RECOMMEND THE PROGRAM TO OTHER FACULTY

TOP REASONS FOR PARTICIPATING

- **58%** TO MENTOR STUDENTS IN A DIFFERENT WAY
- **58%** TO BE PART OF A MULTIDISCIPLINARY TEAM
- **43%** TO BE PART OF SOMETHING INNOVATIVE

TO WHAT EXTENT HAS PARTICIPATING IN BASS CONNECTIONS HELPED YOU PROFESSIONALLY IN THE FOLLOWING AREAS...



2015-2016 PARTICIPATION

As a university-wide program, Bass Connections reaches across Duke. In 2015-2016, **43 PROJECT TEAMS BROUGHT TOGETHER FACULTY, GRADUATE STUDENTS AND UNDERGRADUATES** to tackle complex societal challenges. Most of these interdisciplinary teams ran for two semesters; some had a summer component.

In the summer of 2015 there were also 12 Data+ research teams in which undergraduates and graduate student mentors explored new data-driven approaches to interdisciplinary challenges, in addition to numerous related courses and other summer experiences and curricular pathways.

PARTICIPATION IN PROJECT TEAMS AND DATA+

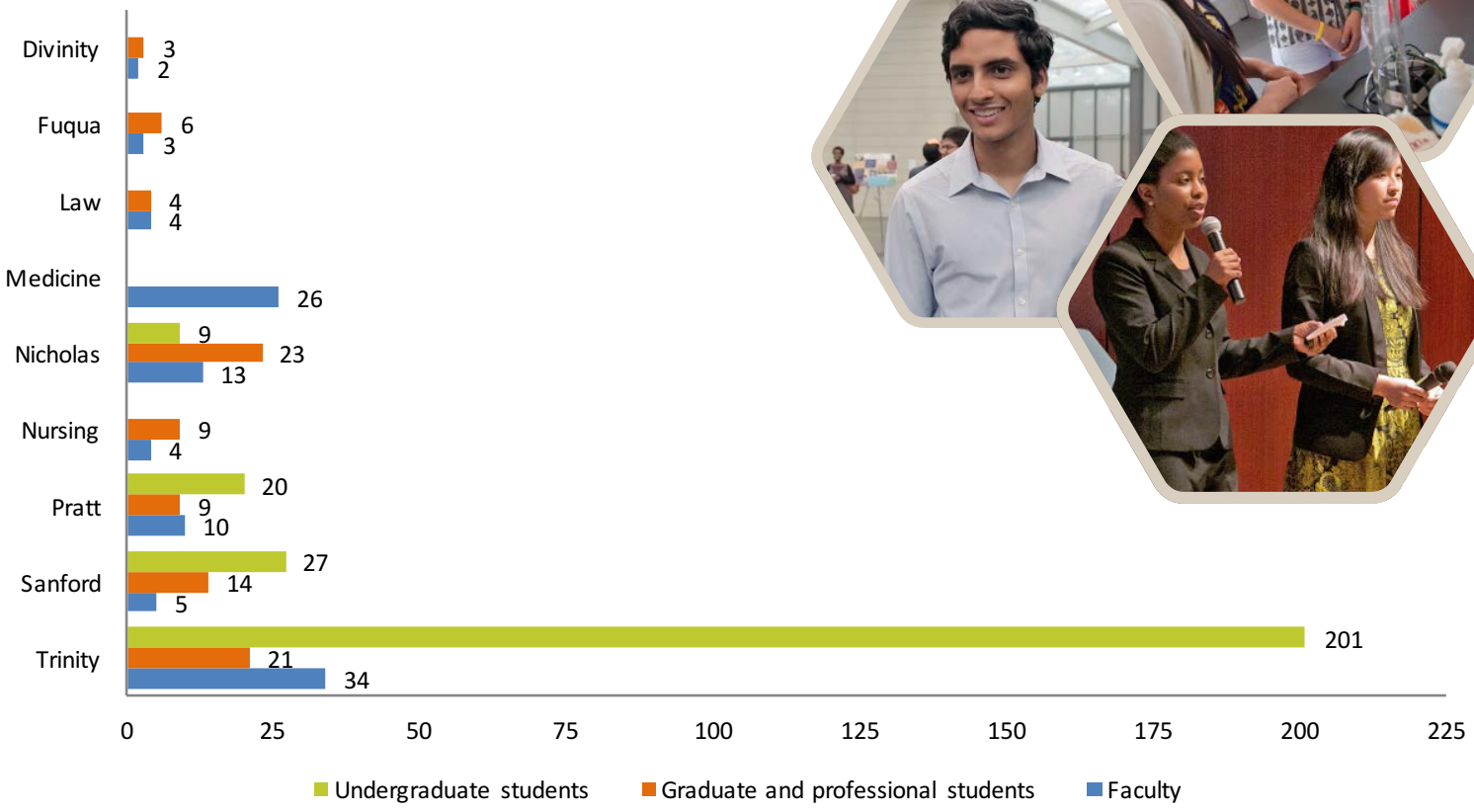
154 FACULTY MEMBERS

89 GRADUATE & PROFESSIONAL STUDENTS

259 UNDERGRADUATE STUDENTS

38 COMMUNITY PARTNERS

BASS CONNECTIONS PARTICIPATION BY SCHOOL
2015-2016



Note: Undergraduates counted in Nicholas and Sanford are enrolled in Trinity and are pursuing majors to which those schools make significant contributions.

EXPERIENCES Student Perspective

Allied summer experiences
(e.g., Global Health Student Research Training, Data+, DukeEngage, Neurohumanities in Paris)

Courses and modules
(e.g., Data Expeditions, History of Global Health)

BASS CONNECTIONS PROJECT TEAMS

Capstone research experiences
(e.g., faculty-mentored research, honors theses, dissertations)

Internships, graduate or professional study, employment

EXPERIENCES Faculty Perspective

External funding

preliminary findings

Seed grant
(leading to new research vistas)

New approaches
(e.g., team-based, problem-centered)

NEW FACULTY COLLABORATIONS

BASS CONNECTIONS PROJECT TEAMS

IMPACT ON TEACHING

New courses

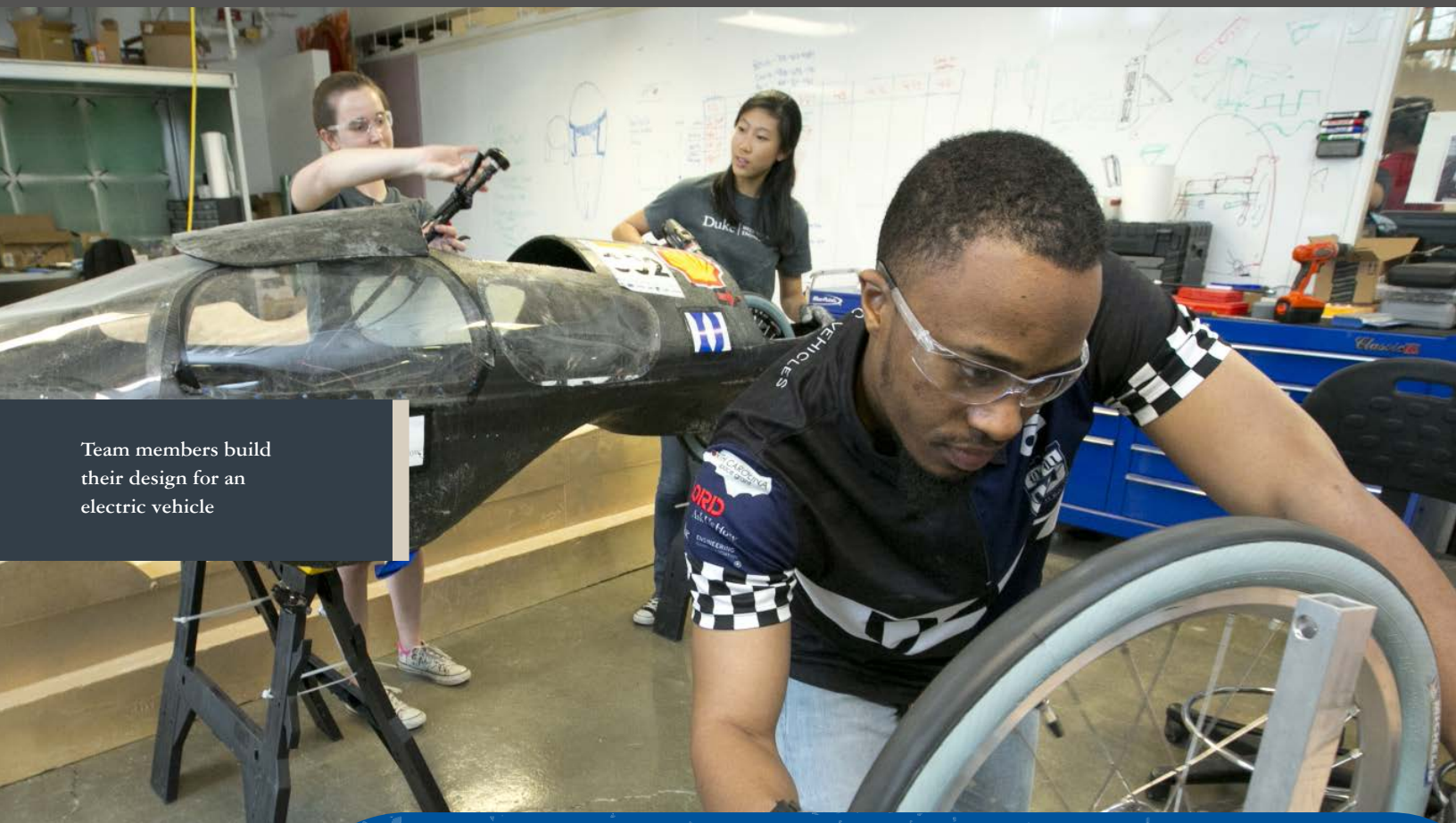
Outreach endeavors

More engaged research

Student Advisory Council

GRADUATE CO-CHAIR
Mercy DeMenno, Sanford School of Public Policy
UNDERGRADUATE CO-CHAIR
Jake Lennert, Trinity College of Arts & Sciences '16

Carly Bandt, Trinity College of Arts & Sciences '18
Anuhita Basavaraju, Trinity College of Arts & Sciences '18
Erin Ji-Su Choe, Trinity College of Arts & Sciences '17
Samip Desai, Pratt School of Engineering '17
Sarah Diringer, Graduate School
Sharine Forbes, School of Nursing
Jemi Galani, Trinity College of Arts & Sciences '17
Danalaxshmi Shanen Ganapathee, Trinity College of Arts & Sciences '17
Kunal Goel, Trinity College of Arts & Sciences '16
Anna Johns, Law School, Graduate School
Kevin Liang, Pratt School of Engineering
Helen Liu, Trinity College of Arts & Sciences '17
Melissa Manus, Duke Global Health Institute
Alexander Merriman, Trinity College of Arts & Sciences '17
Neelesh Moorthy, Trinity College of Arts & Sciences '18
Meghan O'Neil, Graduate School
Joshua Rivenbark, Sanford School of Public Policy, School of Medicine
Indrani Saha, Trinity College of Arts & Sciences '17
Aaron Towers, Graduate School
Taylor Trentadue, Trinity College of Arts & Sciences '16
Jill Wentzell, Ph.D., Trinity College of Arts & Sciences (Postdoc)
Jennie Xu, Trinity College of Arts & Sciences '16



Team members build their design for an electric vehicle

2015-2016 LEADERSHIP

EDWARD BALLEISEN
Vice Provost for Interdisciplinary Studies
HALLIE KNUFFMAN
Director for Administration and Program Development
SARAH DWYER
Assistant Director for Communications and Administration
LAURA HOWES
Associate Director for Strategy and Operations

Bass Connections is centrally housed in the university-wide Office of the Vice Provost for Interdisciplinary Studies, and has five thematic areas, each given an intellectual and administrative home within a university-wide institute or initiative. Faculty and student advisory councils play a vital role in the program's leadership.

THEMES

BRAIN & SOCIETY
Duke Institute for Brain Sciences

INFORMATION, SOCIETY & CULTURE
Information Initiative at Duke

GLOBAL HEALTH
Duke Global Health Institute

EDUCATION & HUMAN DEVELOPMENT
Social Science Research Institute

ENERGY
Energy Initiative

THEME LEADERS

Brain & Society
DEBORAH JENSON
Trinity College of Arts & Sciences
LEONARD WHITE
School of Medicine

Education & Human Development
TOM NECHYBA
Trinity College of Arts & Sciences and Sanford School of Public Policy

Global Health
MARY STORY
Duke Global Health Institute and School of Medicine

Information, Society & Culture
ROBERT CALDERBANK
Trinity College of Arts & Sciences and Pratt School of Engineering
VICTORIA SZABO
Trinity College of Arts & Sciences
HANS VAN MIEGROET
Trinity College of Arts & Sciences

Energy
LORI BENNEAR
Nicholas School of the Environment, Trinity College of Arts & Sciences and Sanford School of Public Policy
RICHARD NEWELL
Nicholas School of the Environment, Trinity College of Arts & Sciences and Sanford School of Public Policy

Faculty Advisory Council

CHAIR: DAVID TOOLE, DIVINITY SCHOOL

Nicole Barnes, Trinity College of Arts & Sciences
Martin Brooke, Pratt School of Engineering
Nicholas Carnes, Sanford School of Public Policy
Grainne Fitzsimons, Fuqua School of Business
Lisa Huettel, Pratt School of Engineering
Lisa Keister, Trinity College of Arts & Sciences
Daniel Laskowitz, School of Medicine
Frederick Mayer, Sanford School of Public Policy
Marilyn Oermann, School of Nursing
Jonathan Wiener, Law School
Bass Connections theme leaders (please see list above)

EX-OFFICIO

Edward Balleisen, Vice Provost, Interdisciplinary Studies
Lee Baker, Dean, Academic Affairs, Trinity College of Arts & Sciences
John Klingensmith, Associate Dean for Academic Affairs, Graduate School
Steve Nowicki, Dean and Vice Provost, Undergraduate Education

STUDENT REPRESENTATIVES

Tara Bansal, Trinity College of Arts & Sciences '17, Undergraduate Student Representative, Duke Student Government
Bradley Barth, Pratt School of Engineering, Graduate and Professional Student Council Representative

ILLUSTRATIVE PROJECT TEAMS

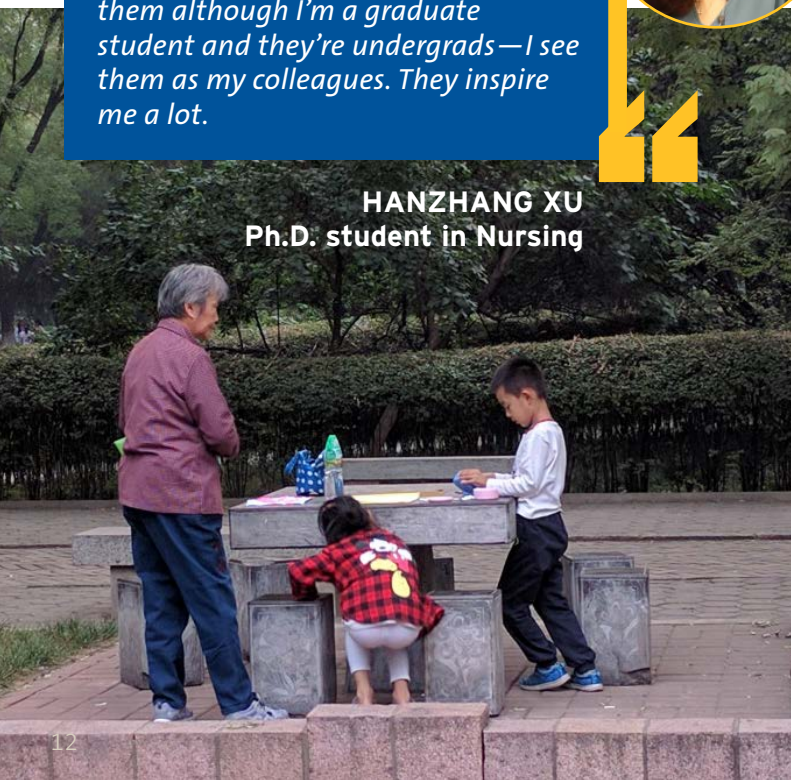
selected examples from 2015-2016

Community Care of Frail Elders in Cross-cultural Settings

Led by Bei Wu (School of Nursing), this project team investigated the formal and informal caregiving arrangements and needs of Chinese elders who are experiencing cognitive or physical decline. The team pursued fieldwork in Shanghai to assess the quality of care provided to dementia patients, as well as the barriers to improved care. In November 2015, team members shared findings at the Gerontological Society of America annual meeting.

We have a large group meeting every month with faculty and we have a collaboration with Chinese university hospitals. Currently we have three undergrad students; one is majoring in economics and global health, another is pre-med and computer science and the third is computer science and statistics. It's really a fascinating experience for me. I wouldn't exactly say I'm mentoring them although I'm a graduate student and they're undergrads—I see them as my colleagues. They inspire me a lot.

HANZHANG XU
Ph.D. student in Nursing



Reviewing Retrospective Regulatory Review

How well do government regulations work in practice? And when government agencies look back to review the impacts of their regulations, is that process as effective as it could be?

Led by Edward Balleisen (Trinity College of Arts & Sciences), Lori Bennear (Nicholas School of the Environment) and Jonathan Wiener (Law School), this project team examined how government agencies and other bodies are conducting retrospective regulatory review. What methodologies do these reviews adopt, which regulations receive scrutiny and which impacts do reviewers assess?

Through substantive case studies at the local, national and international levels, team members examined current practices and how to improve them. The team's objective was to create a signature Duke report on retrospective regulatory review. Team members conducted interviews in Washington with officials at several federal agencies. The forthcoming report offers recommendations for policymakers and scholars engaged in regulatory review.

Participation on the team has enriched my own research project. I have been able to share and discuss with the team the results from my dissertation research (e.g., interviews of regulators from the European Commission and the UK); to produce and compare new analyses; and to learn from the different perspectives and backgrounds of my team members.

DANIEL RIBEIRO
S.J.D. student in Law

It's thrilling to watch the students go through the period of brainstorming and come up with new ideas that can address these problems. Working on teams is such a rich way to learn from each other. I find that I want more and more of that small group experience and exploration in my research and teaching.

EMILY M. KLEIN
Professor of Earth and Ocean Sciences

Energy and the Environment: Design and Innovation

What are the key challenges facing new sources of clean, affordable and reliable energy, and what are some innovative approaches to help solve those challenges? Emily M. Klein (Nicholas School of the Environment) and Josiah Knight (Pratt School of Engineering) led a project team to identify, design and prototype new energy technologies, systems or approaches. Small groups addressed trade-offs among design choices, environmental impact and economic viability. Outputs included prototypes of a human-powered water purification system and an urban electric vehicle, along with a report with recommendations on facilitating advanced materials for energy.

I have a background in project management, and I saw an opportunity to bring that to the team. I was able to add experience in setting up timelines, budgets, holding people accountable and teamwork.

CHRIS DOUGHER
MBA student

Team member Tara Bansal interviews a community leader in Bangalore

Studying the Real 'Slums' in Bangalore

More than one billion people live in slums worldwide, as these forms of urban housing rapidly expand across the developing world. Yet policymakers still often ignore these places of crowded urban residential life, as do other city residents and many development scholars.

Led by Anirudh Krishna (Sanford School of Public Policy) and Erik Wibbels (Trinity College of Arts & Sciences), this project team refined a satellite-based methodology for identifying slums and slum types in Bangalore, India, and investigated how political networks and distributive politics impact the security of property rights, access to public services and human well-being. The research will be used to better identify the political networks that influence distribution of goods and services by the Indian government.

I used to teach pretty traditional classes. My undergraduate courses are now much more applied. It made me realize how capable students are of doing research, and that it can start right away.

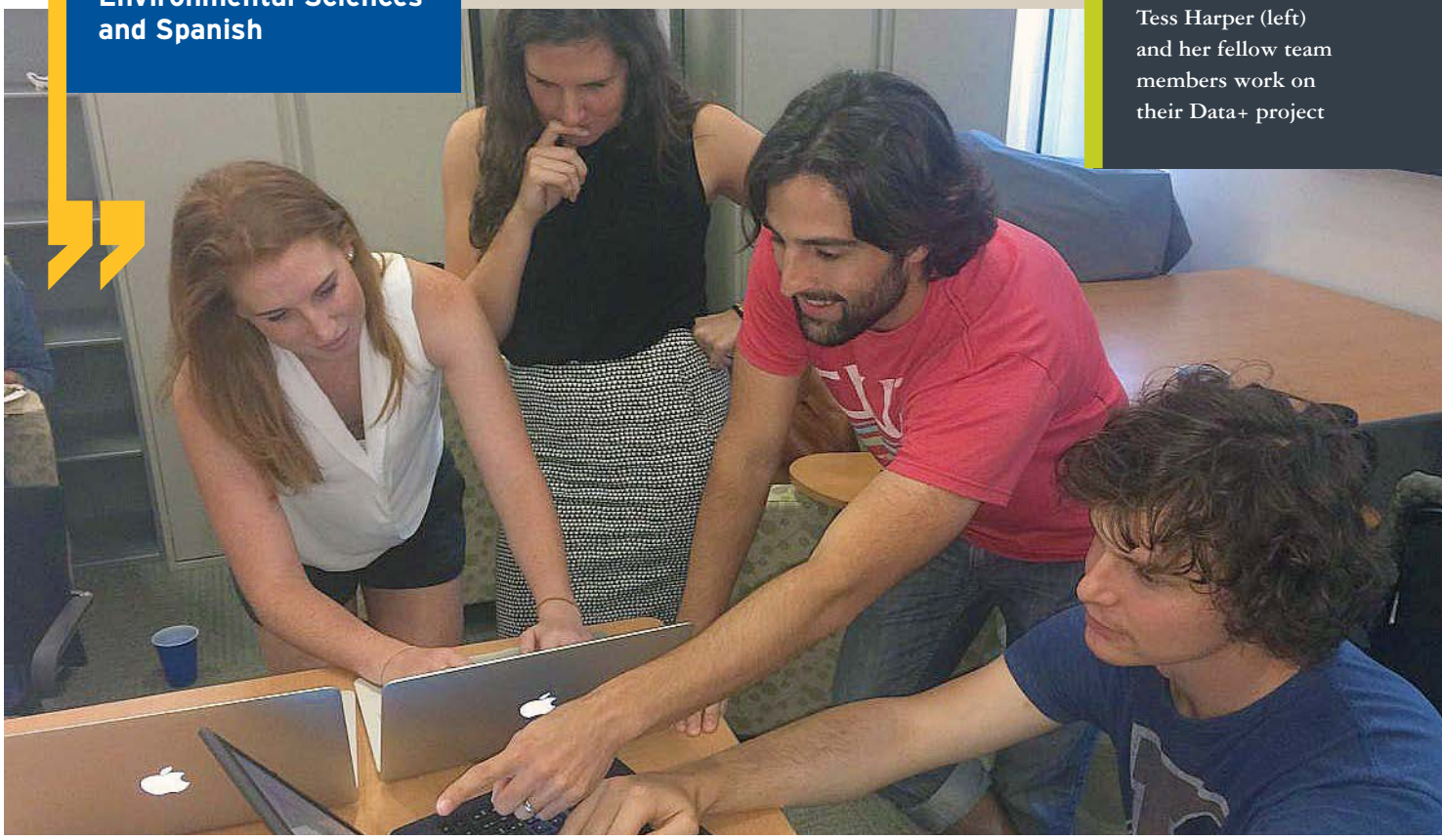
ERIK WIBBELS
Professor of Political Science

Interactive Environmental Data Applications

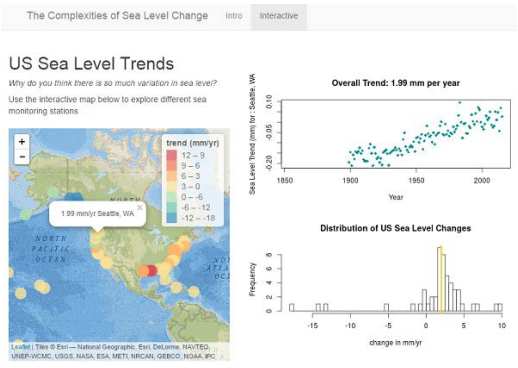
As part of the Data+ summer research program, undergraduates Tess Harper and Molly Rosenstein developed six interactive data applications for use in Environmental Science 101, a Duke course taught by Rebecca Vidra (Nicholas School of the Environment). Mentored by Statistical Science doctoral student Aaron Berdanier and Ecology doctoral student Matt Ross, Harper and Rosenstein created web-based apps exploring climate change, sea level rise, biodiversity, solar power, watershed hydrology and mountaintop mining. Their work on mountaintop mining contributed to a study whose findings were featured in a *New York Times* editorial, "How the Coal Industry Flattened the Mountains of Appalachia."

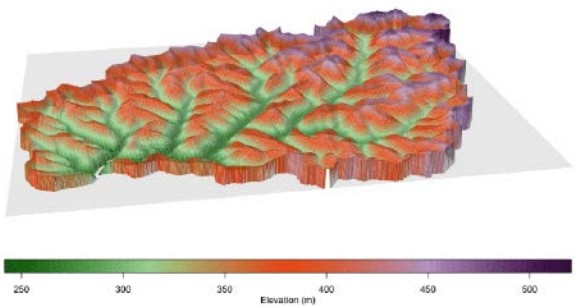
Getting our first app up and running was really exciting. Molly and I didn't have a strong background in computer science, and we've still been able to hold our own.

TESS HARPER '15
Environmental Sciences and Spanish



Tess Harper (left) and her fellow team members work on their Data+ project





LEFT
Interactive data application on sea level rise

RIGHT
Elevation map of West Virginia's Mud River watershed before and after mountaintop mining became widespread

Faces really provide the most absorbing source of information for us as humans. We are constantly attracted to faces and we see them everywhere. Artists have always had an obsession with faces, and recently scientists have also begun grappling with this obsession. Even in a really abstract representation of a face, people still scan it like they would a face. They are looking for the same social information regardless of how abstract the work is.

SOPHIE KATZ '17
Neuroscience

Art, Vision and the Brain

Faces fascinate us. From our earliest moments as infants, humans prefer to look at faces and face-like images. How does the brain use faces to make sense of our world, and what's going on in the brain when we look at particular kinds of art?

Led by Elizabeth Johnson and Eleonora Lad (School of Medicine), Guillermo Sapiro (Pratt School of Engineering) and Marianne Wardle (Nasher Museum of Art), this project team organized an exhibition exploring the intersection of art and neuroscience at the Nasher Museum (March 18–July 24, 2016), produced an exhibition catalogue and led gallery talks. Team members also created an interactive demo for Brain Awareness Week at the Duke Institute for Brain Sciences.

Environmental Epidemiology in Latin America

William Pan (Nicholas School of the Environment) and colleagues have led a Bass Connections project team since 2013. Their research on the health effects of illegal gold mining in the Peruvian Amazon made an important policy impact this year.

In May 2016 Peru's government declared a public health emergency to address the mercury pollution caused by mining along the Madre de Dios River. According to an article by Barbara Fraser in *Nature*, "Peru's government used the Duke team's latest study to determine which riverside communities should receive the emergency aid." The Duke researchers "found high levels of mercury (above the maximum recommended by the World Health Organization) in hair samples from 40% of the Madre de Dios residents that they tested," writes Fraser. "The Duke team has examined about 800 people living along a major highway in the region, 100 people living beside the river and 2,000 in the Amarakaeri Indigenous Reserve. Some communities in the region are closer to the gold-mining activities than others, but the 40% exposure rate held across the highway, river and reserve."

> *Duke's contribution is very important as it serves to set out the course of action for future work.*
>
> **DR. JAIME F. FLORES**
> **Executive Director,**
> **Alto Amazonas Health Network,**
> **Regional Government of Loreto, Peru**

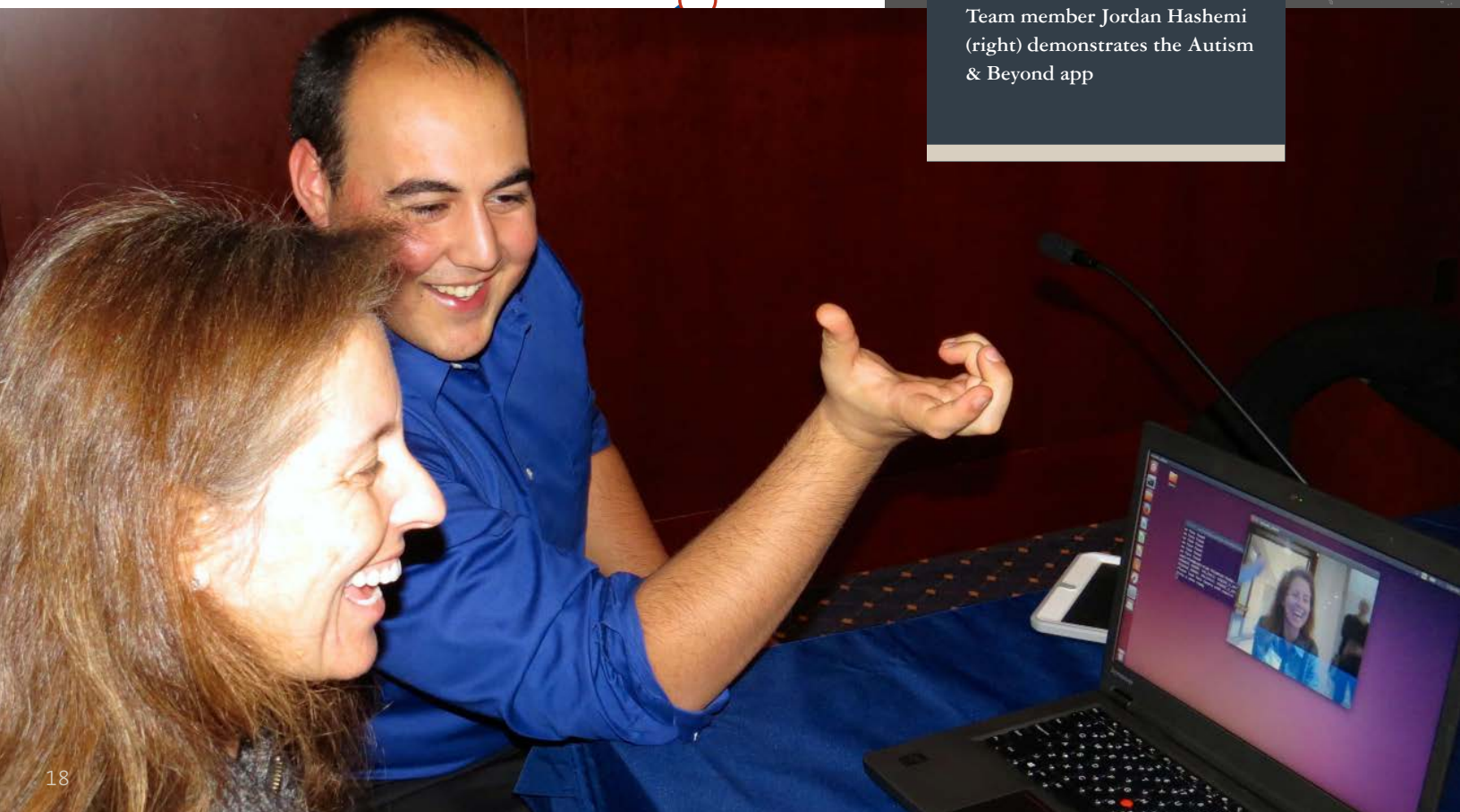
Team members present an educational session to children in Peru

We are really happy with our results. We had a high level of participation and the data are usable. We keep learning things that we weren't expecting; that's what happens with over 1,000 families participating. And we're going into Africa, South America and India.

GUILLERMO SAPIRO
Professor of Electrical and Computer Engineering

Autism & Beyond

One exciting achievement this year was the fruit of a previous Bass Connections project team, Information, Child Mental Health and Society. Led by Helen Egger (School of Medicine and Sanford School of Public Policy) and Guillermo Sapiro (Pratt School of Engineering), the team contributed to a collaboration among researchers at Duke University and Duke Medical Center that created an Apple ResearchKit app called Autism & Beyond. "We're honored to work with world-class medical institutions and provide them with tools to better understand diseases and ultimately help people lead healthier lives," said Jeff Williams of Apple.



Team member Jordan Hashemi (right) demonstrates the Autism & Beyond app

Citizenship Lab: Civic Participation of Refugee Youth in Durham

How do refugee youth create a meaningful and dignified life after resettlement to the United States? How can youth civic engagement programs promote a robust sense of citizenship and improve college readiness among refugee youth? Led by Suzanne Shanahan (Trinity College of Arts & Sciences) with Nadia El-Shaarawi and William Tobin (Kenan Institute for Ethics), this project team explored such questions with 30 young refugees who attend Githens Middle School, Jordan High School and Riverside High School in Durham. As a final project, the youth created a Photovoice exhibition, Community Is and Can Be.

I study civic education theoretically but never would have gotten such a hands-on experience as a grad student without this.

ALEXANDRA OPREA
Ph.D. student in Political Science

Young refugees visit West Campus and interview Duke students

Team members collaborated with the group of young refugees every week at the Kenan Institute for Ethics

INTERDISCIPLINARY COURSES

NEUROSCI/MUSIC 289

Bass Connections seeks to create a full problem-centered curriculum, which includes courses that highlight interdisciplinary thinking, collaborative assignments and interaction with community organizations. One such course is NEUROSCI/MUSIC 289 – Music and the Brain.

In this course, taught jointly by Scott Lindroth (Trinity College of Arts & Sciences) and Tobias Overath (Duke Institute for Brain Sciences), students explore how music affects the brain and how humans learn to create and perform music.

Scientific research is motivated by wonderment, which is fundamentally an emotional connection with a question or puzzle. Musicians dedicate their lives to the creation of wonderment and emotional engagement through a sonic utterance. The class allows me to experience music from a very different lens and perspective.

SCOTT LINDROTH
Vice Provost for the Arts and Professor of Music

TOBIAS OVERATH
Assistant Research Professor, Duke Institute for Brain Sciences

New Courses

This year Duke faculty were invited to submit proposals for course development funds to complement existing offerings in the Bass Connections themes.

These funds were awarded to four groups of faculty members whose pedagogical ideas will expand interdisciplinary curricular options for undergraduates as well as graduate and professional students. The courses are:

MANAGING NETWORKS

ENGINEERING AND ANTHROPOLOGY OF BIOMEDICAL ENGINEERING DESIGN IN UGANDA

HISTORY OF GLOBAL HEALTH

INTEGRATING ENVIRONMENTAL SCIENCE AND POLICY

FUNDING

The university of the future will be defined as much by collaboration as it is by individual accomplishment, and as much by the opportunity to engage with problems as it is by the accumulation of knowledge. Deeply constructive partnerships across areas of expertise, between researchers and practitioners, and among students and faculty of diverse perspectives must be the norm rather than the exception.

PRESIDENT RICHARD H. BRODHEAD

Bass Connections is fast becoming a cornerstone of the Duke experience. The program amplifies Duke's commitment to interdisciplinary education by providing structured pathways for undergraduates as well as graduate students to engage in team-based collaboration across schools and majors. For undergraduates in particular, the opportunity to work in small, innovative research teams is rare within higher education. Through Bass Connections, students are delving into complex and rewarding team-based work and taking their research further through completing a senior honors thesis, participating in a related DukeEngage summer program and many more opportunities.

The program is supported exclusively through gifts and donations to Duke, primarily from individual donors. By investing in Bass Connections, our alumni and friends play a vital role in building this transformative program to its full potential and helping to set Duke apart among top universities. And through the Bass Challenge, which matches one dollar for every two dollars contributed (a 1:2 match) of all endowment or expendable gifts to the program from $100,000 and up, donors' impact can increase dramatically.

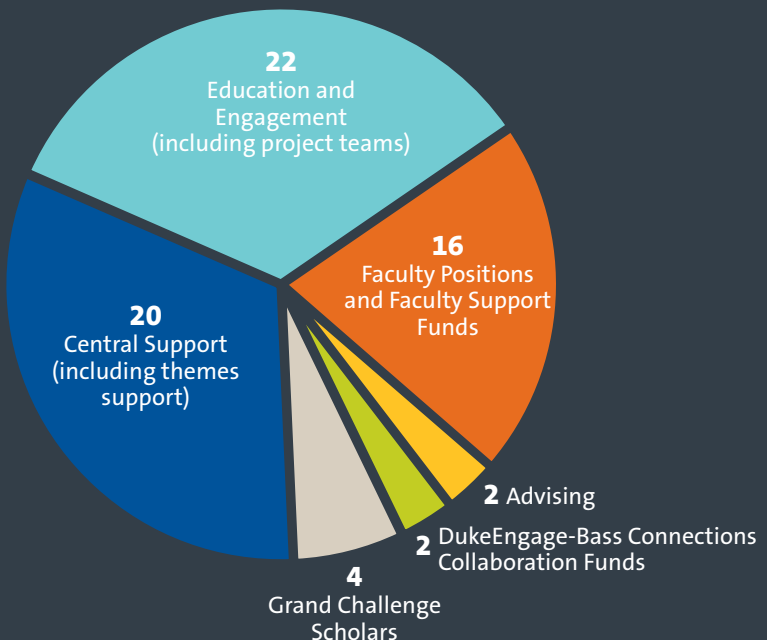
Donor investments are helping Duke educate a new generation of versatile leaders who are adept at working in diverse teams to solve global problems. Continued support from leadership donors will help to sustain the program's momentum.

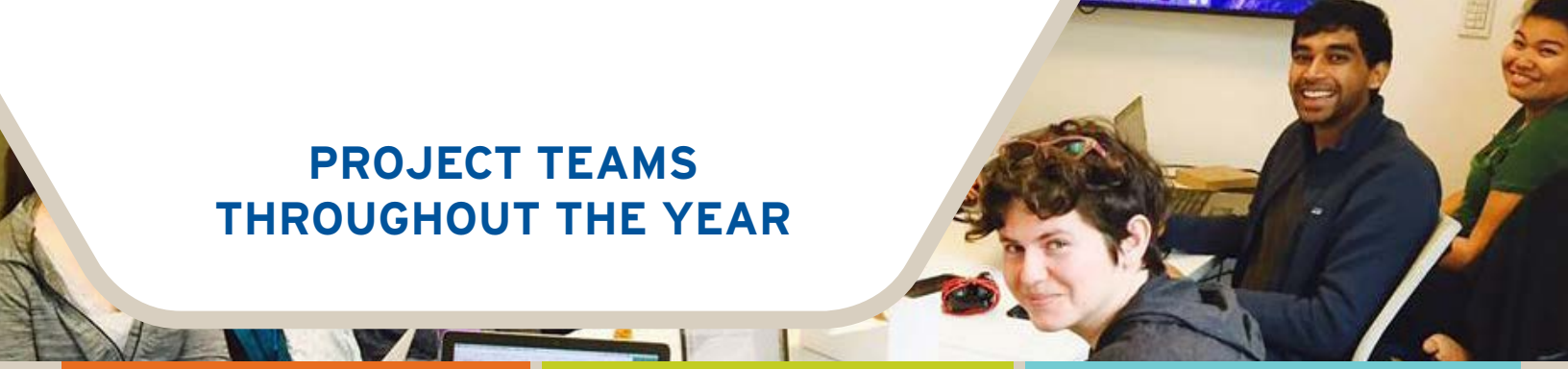
Together we can meet growing demand from faculty and students who are excited to be participants in a program that is transforming higher education for the 21st century.

$36M IN GIFTS HAVE LEVERAGED $17.6M IN MATCHING FUNDS.

TO DATE, 60 GIFTS HAVE CREATED 66 FUNDS:

as of 11/22/16





PROJECT TEAMS THROUGHOUT THE YEAR

FALL

- **PROJECT TEAMS BEGIN**
  or continue after beginning in summer
- Faculty, graduate/professional students, postdocs propose projects for next year
- Faculty propose Data+ projects

SPRING

- **PROJECT TEAMS CONTINUE**
- Students apply to join next year's project teams

SUMMER

- **SOME NEW PROJECT TEAMS BEGIN**
  all remaining new teams begin in fall
- Data+ summer program

Top 5 undergraduate majors represented in Bass Connections

58% OF UNDERGRADUATES WHO PARTICIPATE IN BASS CONNECTIONS PROJECT TEAMS ALSO PARTICIPATE IN STUDY ABROAD, DUKEENGAGE OR DUKEIMMERSE

THE VAST MAJORITY OF ALL PARTICIPANTS WOULD RECOMMEND THAT A PEER PARTICIPATE IN BASS CONNECTIONS

97% OF UNDERGRADUATES

92% OF FACULTY TEAM LEADERS

88% OF GRADUATE STUDENTS

> It is an incredibly unique experience in which you are able to work alongside fellow students and faculty members as colleagues.

> *I got invaluable experience mentoring undergraduates and leading them as a team. I also established new interdisciplinary collaborations that allowed me to learn new skills and new topic areas, and was important for my professional development. Finally, I hope to be publishing multiple first-author publications based on our team's research, which will help boost my CV.*
>
> **GRADUATE STUDENT TEAM MEMBER**

Community partners

Most Bass Connections project teams work with community partners outside Duke, including private companies, nonprofits, universities, school systems, hospitals and government agencies at the federal, state and local levels. **79% OF TEAMS IN 2015-2016 HAD SOME FORM OF EXTERNAL ENGAGEMENT.**

Since 2013, Bass Connections project teams have engaged more than:

560 UNDERGRADUATE STUDENTS

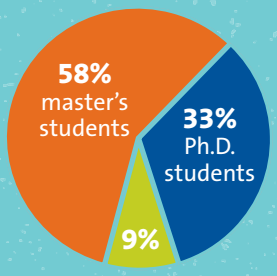
33% of Bass Connections undergraduate team members complete senior theses

compared to **22%** of the senior class as a whole

240 FACULTY MEMBERS

15 POSTDOCS

230 GRADUATE & PROFESSIONAL STUDENTS



other advanced programs such as J.D. and M.D.

> *The most rewarding aspect was the collaborative working environment we developed as a team and the interactions with in-country stakeholders. I learned an immeasurable amount from both my Duke and Bangladeshi colleagues and was offered a much broader lens through which to view both the problem and potential solutions.*
>
> **COURTNEY CAIOLA '15**
> **Ph.D. in Nursing**

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