

# Diversity + STEM = X

Solving the Equation for Higher Education and the Workforce



A 10-year Retrospective on the  
**Posse STEM Program**

FEBRUARY 2018



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## Solving the Equation for Higher Education and the Workforce

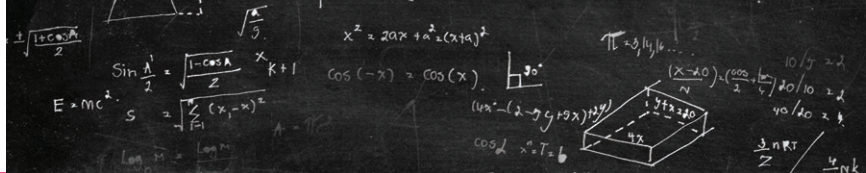
### A 10-year Retrospective on the **Posse STEM Program**

FEBRUARY 2018

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# Posse Concept, Mission + Goals



## Concept

Posse started in 1989 because of one student who said,

**“I never would’ve dropped out of college if I’d had my posse with me.”**

The Posse Foundation identifies public high school students with extraordinary academic and leadership potential who may be overlooked by traditional college selection processes. The Foundation extends to these students the opportunity to pursue personal and academic excellence by placing them in supportive, multicultural teams—Posses—of 10 students. The Foundation’s partner colleges and universities award Posse Scholars full-tuition leadership scholarships.

## Mission

The Posse model works for both students and college campuses and is rooted in the belief that a small, diverse group of talented students—a Posse—carefully selected and trained, can serve as a catalyst for increased individual and community development. As the United States becomes an increasingly multicultural society, Posse believes that the leaders of this new century should reflect the country’s rich demographic mix and that the key to a promising future for our nation rests on the ability of strong leaders from diverse backgrounds to develop consensus solutions to complex social problems. One of the primary aims of the Posse program is to train the leaders of tomorrow.

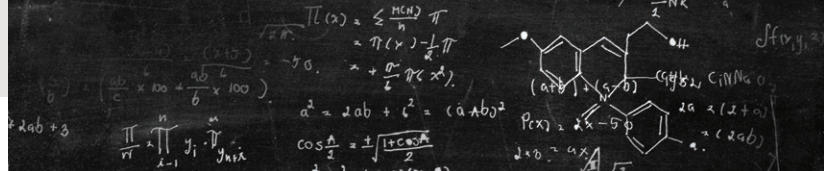
## Goals

1. To expand the pool from which top colleges and universities can recruit outstanding young leaders from diverse backgrounds.
2. To help these institutions build more interactive campus environments so that they can become more welcoming institutions for people from all backgrounds.
3. To ensure that Posse Scholars persist in their academic studies and graduate so they can take on leadership positions in the workforce.

## College + University Partners

- AGNES SCOTT COLLEGE
- BABSON COLLEGE
- BARD COLLEGE
- BOSTON UNIVERSITY
- BRANDEIS UNIVERSITY
- BRYN MAWR COLLEGE
- BUCKNELL UNIVERSITY
- CARLETON COLLEGE
- CASE WESTERN RESERVE UNIVERSITY
- CENTRE COLLEGE
- COLBY COLLEGE
- THE COLLEGE OF WOOSTER
- CONNECTICUT COLLEGE
- CORNELL UNIVERSITY
- DARTMOUTH COLLEGE
- DAVIDSON COLLEGE
- DENISON UNIVERSITY
- DEPAUW UNIVERSITY
- DICKINSON COLLEGE
- FRANKLIN & MARSHALL COLLEGE
- THE GEORGE WASHINGTON UNIVERSITY
- GRINNELL COLLEGE
- HAMILTON COLLEGE
- HOBART AND WILLIAM SMITH COLLEGES
- ILLINOIS WESLEYAN UNIVERSITY
- KALAMAZOO COLLEGE
- LAFAYETTE COLLEGE
- LEHIGH UNIVERSITY
- LAWRENCE UNIVERSITY
- MIDDLEBURY COLLEGE
- MOUNT HOLYOKE COLLEGE
- NORTHWESTERN UNIVERSITY
- OBERLIN COLLEGE
- PEPPERDINE UNIVERSITY
- POMONA COLLEGE
- SEWANEE: THE UNIVERSITY OF THE SOUTH
- SMITH COLLEGE
- ST. OLAF COLLEGE
- SYRACUSE UNIVERSITY
- TEXAS A&M UNIVERSITY
- TRINITY COLLEGE
- TULANE UNIVERSITY
- UNION COLLEGE
- UNIVERSITY OF CALIFORNIA, BERKELEY
- UNIVERSITY OF MICHIGAN
- UNIVERSITY OF NOTRE DAME
- UNIVERSITY OF PUGET SOUND
- UNIVERSITY OF ROCHESTER
- THE UNIVERSITY OF TEXAS AT AUSTIN
- UNIVERSITY OF VIRGINIA
- UNIVERSITY OF WISCONSIN-MADISON
- VANDERBILT UNIVERSITY
- VASSAR COLLEGE
- WELLESLEY COLLEGE
- WESLEYAN UNIVERSITY
- WHEATON COLLEGE

# Five Program Components



## The Posse Program achieves its goals through 5 program components.

### 1. Recruitment

From September to December each year, Posse conducts the Dynamic Assessment Process (DAP), a unique evaluation method designed to identify young leaders who might be missed by traditional admissions criteria, but who can excel at selective colleges and universities. Using nontraditional forums to evaluate potential, DAP offers students an opportunity to demonstrate their intrinsic leadership abilities, their skill at working in a team setting, and their motivation and desire to succeed. DAP has proven to be an extremely effective tool for identifying outstanding young leaders. In a three-part process, including large group and individual interviews, Posse staff and partner college and university administrators ultimately select a diverse group of 10 students for each college or university, thus forming a Posse.

### 2. Pre-Collegiate Training

From January to August of their senior year in high school, Posse Scholars meet weekly with staff trainers and their Posse peers for two-hour workshops. The Pre-Collegiate Training Program consists of workshops that address four areas: 1) team building and group support, 2) cross-cultural communication, 3) leadership and becoming an active agent of change on campus, and 4) academic excellence. The goal of the training is to prepare Scholars for leadership roles on campus and for the high-level academic expectations of their colleges.

### 3. Campus Program

The Campus Program works to ensure the retention of Posse Scholars and to increase the impact of Posse on campus. Posse staff members visit each college and university four times a year for meetings with Posse Scholars, campus liaisons and mentors. During a Posse's first two years on campus, Scholars meet with their mentor each week as a group and every other week individually. In addition, Posse facilitates an annual weekend-long PossePlus Retreat attended by members of the larger student body, faculty and administration with the goal of discussing an important campus issue identified by Posse Scholars.

### 4. Career Program

The Career Program supports Posse Scholars as they transition from being leaders on campus to becoming leaders in the workforce. Posse plays an integral role in the professional development of these young people by providing them with the tools and opportunities necessary to secure highly competitive, career-enhancing internships and jobs. One of the ways Posse achieves this is by partnering with exceptional companies and organizations, both nationally and abroad. The Career Program has three core components: 1) Internship Program, 2) Career Services and 3) The Alumni Network.

### 5. Posse Access

Posse Access is an online database designed to give Posse partner colleges and universities exclusive access to unselected student nominees to consider for regular admission. Through Posse Access, the hundreds of finalists nationwide who are not selected can opt to have their application profiles made available to each of Posse's partner institutions. By identifying candidates through the Posse Access database, partner schools benefit from Posse's holistic approach to evaluating student potential and see a much greater pool of highly qualified students.

# Who are Posse Scholars?

This year more than 17,000 students were nominated for 750 scholarship slots. Posse Scholars represent the most dynamic talent this country has to offer.

We identify Posse Scholars through our Dynamic Assessment Process (DAP)—a unique, nontraditional and highly competitive three-stage interview involving guidance counselors, community-based organizations and university admissions representatives.

DAP evaluates the whole student through the use of indicators such as leadership, communication skills, life experiences, problem-solving ability and perseverance. It identifies students who have proven their ability to succeed—whether or not they have high test scores. It identifies students who are natural leaders and want to make an impact in their communities.

Ask anyone to describe a Posse Scholar, and you get words such as: motivated, creative, intelligent, dynamic, highly involved, persistent, positive, enthusiastic, optimistic, funny, magnetic and determined.

Katharine Wright, a Posse mentor and Middlebury College faculty member, talked about the first time she met Posse Scholars: **“I noticed them the first week but by the third week I was just floored. These extraordinary students, just changing the dynamic of the whole class. I had no idea they were Posse students.”**

Posse Scholars are extraordinary. Posse Scholars intern on Capitol Hill, win Fulbrights and tutor their peers. Posse Scholars are study session leaders and student government presidents. They facilitate conversations on race and write for their college newspapers.

When Posse Scholars graduate, they take on leadership positions in the workforce. Posse alumni are scientists, doctors and researchers. They are CEOs, educators, artists, and political organizers. In 2020, the workforce will include 6,000 Posse graduates working in government, education, the arts and corporate America.

**The most recent class of Scholars (selected in fall 2017) had an average high school GPA of 3.8. Of this group, 56.3 percent are first-generation collegegoers.**

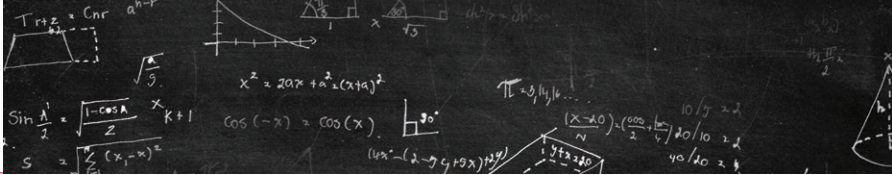
Posse Scholars persist and graduate at a rate of 90 percent. In our college graduating class of 2017:

- **80** percent held an official leadership position (founder, president, officer, etc.) in a student organization while on campus
- **54** percent studied abroad
- **83** percent plan on attending graduate school

Through DAP, The Posse Foundation is expanding the pool from which top colleges can recruit outstanding young leaders.



# Praise for Posse STEM Program



Posse STEM has proven to be one of the most successful of the many efforts across the country aimed at increasing the diversity of the STEM workforce. The idea to start it at Brandeis came to me because of the great success we have had with our traditional Posse program. It occurred to me that if all the Scholars in a Posse were aiming toward a future in STEM, the mutual support system of the Posse would tend to keep them pointed in that direction even when they encountered the inevitable obstacles that nearly all STEM students have to overcome. Supplementing the original Posse model with a summer immersion program and early exposure to research, the idea has succeeded beyond my wildest expectations.

**Irv Epstein, Professor of Chemistry, Brandeis University**



The results speak for themselves. After four semesters, our first STEM Posse cohort has earned a higher GPA in a science and math-heavy curriculum than their class as a whole. And this high performance is the norm. In last May's senior class, 17 percent of our STEM majors were first-generation college students, and they graduated with average GPAs right on a par with all their STEM major peers. Many of them are also engaged in hands-on research of real scientific significance on our campus and in acclaimed labs across the country, like the Argonne National Laboratory in Chicago. We invest resources to give students research opportunities with faculty, which every study I know of has validated. I cannot imagine F&M without our STEM Posse students. They have made F&M an even greater place—even more dynamic, even more a community, even more true to our ideals.

**Dan Porterfield, President, Franklin & Marshall College**



Building and sustaining a diverse STEM pipeline is a national imperative. We know that students who are underrepresented in various STEM disciplines are more likely to persist if they develop a sense that they belong in those fields. The Posse Foundation directly and effectively promotes that belonging as well as the partnerships that provide Posse students with amazing opportunities to pursue STEM education and careers. Bryn Mawr College shares these commitments and is proud of its partnership with The Posse Foundation and its STEM Posse students.

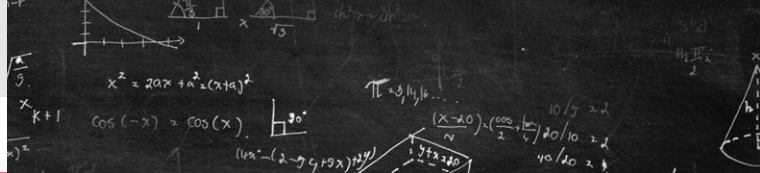
**Kim Cassidy, President, Bryn Mawr College**



Posse's STEM initiative has proven to be an outstanding model of success for this nation. We need Posse alumni leading in every STEM field and know they will bring a deep sense of social justice to their endeavors.

**Michael Strautmanis, Chief Engagement Officer, Obama Foundation**

# STEM Program Context + Background



The U.S. Economics and Statistics Administration projects **STEM JOBS WILL GROW BY 13 PERCENT OVER THE NEXT DECADE**, continuing to outpace other sectors.<sup>1</sup> To keep up with this demand, and to keep the United States competitive in the STEM fields, will require a considerable increase in the number of STEM graduates in the coming years. Despite the need, however, the U.S. Department of Education reports that only 16 percent of high school students are math-proficient and interested in working in a STEM field.<sup>2</sup> Of those who do major in STEM in college, only half ultimately pursue a STEM-related career.<sup>3</sup>

Racial minority groups are especially underrepresented in STEM and STEM-related fields. Although studies indicate these groups may be interested in pursuing STEM degrees at the same rates as non-minority groups, the research shows that minority students complete STEM degrees and pursue STEM career paths at rates well below average.<sup>4</sup> Despite a recent increase in STEM degree acquisition, the U.S. Department of Education reports that of all STEM degree recipients, only 7.5 percent were Black and 7 percent were Hispanic, a gross underrepresentation of the general population for both of these demographics.<sup>5</sup> In 2011, only 6 percent of STEM workers were Black and 7 percent were Hispanic.<sup>6</sup>

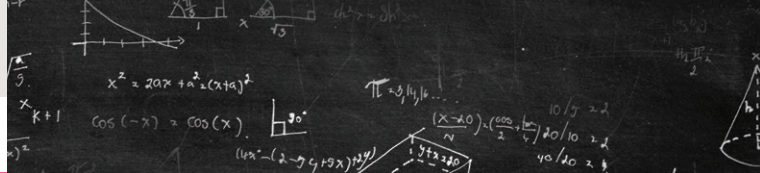
Women are also sorely underrepresented, staking only 24 percent of the largely male-dominated STEM workforce.<sup>7</sup> Whereas 20 percent of women with degrees in science and engineering are out of the labor force, the statistic is less than 10 percent for their male counterparts.<sup>6</sup> In addition, women account for only 18 percent of full professorships in science and engineering, despite holding 36 percent of STEM doctorates.<sup>8</sup>

Scientific and technological innovations are inextricably linked to our national health, security and global competitiveness. **WE WILL NEED LEADERS WITH CREATIVE, SCIENTIFIC, AND TECHNICAL SKILLS WHO COME FROM A TRUE DIVERSITY OF SOCIOECONOMIC, CULTURAL AND ETHNIC BACKGROUNDS.**

The Posse STEM Program recruits, trains and supports cohorts of students in science, technology, engineering and math. Posse, with its outstanding partner colleges and universities, helps improve the numbers and performance of underrepresented students majoring in STEM fields while simultaneously helping to develop more welcoming campus communities for students from diverse backgrounds.



# STEM Program Context + Background



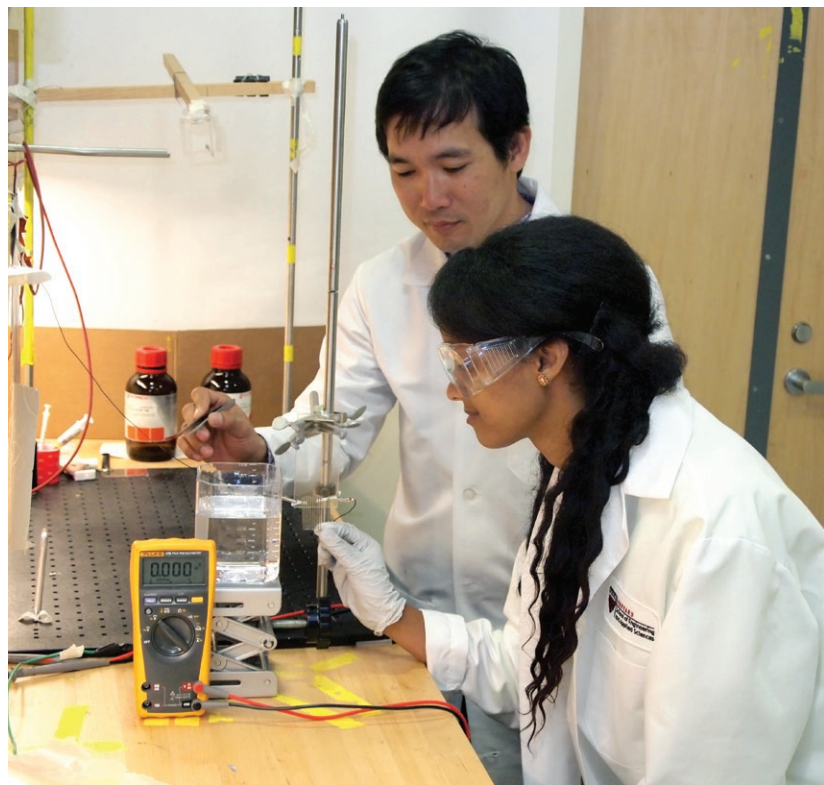
The Posse STEM Program began as a pilot at Brandeis University, a longtime Posse partner institution. Dr. Irv Epstein, a distinguished professor of chemistry, championed the initiative, believing the Posse cohort model could be applied to students interested in STEM with similar positive results. The first Brandeis STEM Posse matriculated in 2008. The experiment proved a success, with a 100 percent graduation rate.

From 2008 to 2013 the program expanded to four additional institutions: Bryn Mawr College, Franklin & Marshall College, Texas A&M University, and the University of Wisconsin–Madison.

In 2014, Posse announced at The White House Summit on Higher Education that it would double the size and scope of its successful program. Davidson College, Middlebury College, Pomona College, Smith College, University of Michigan and Wellesley College have since joined the initiative. Two major donors, Jeff Ubben, CEO of ValueAct Capital and Posse Board chair emeritus, and the Tortora Sillcox Foundation, pledged \$5,000,000 to help support the participating institutions in this expansion over a period of five years.

Over the past 10 years, the Posse STEM Program has supported 594 Scholars, the majority of whom are first-generation college-goers from underrepresented backgrounds. **POSSE STEM SCHOLARS BOAST A GRADUATION RATE ABOVE 90 PERCENT.** Close to 80 percent of the program's 105 alumni graduated with a degree in a STEM field. Forty-four alumni have gone on to graduate study, with most pursuing advanced STEM degrees. Posse STEM Scholars and alumni have received numerous awards, including highly coveted fellowships and grants from the National Science Foundation, GEM and Howard Hughes Medical Institute to name a few. Their success is proof positive the program works.

The following provides a picture of Posse's STEM program today.



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- 4 Higher Education Research Institute at UCLA, HERI Research Brief. (2010, January). Degrees of Success: Bachelor's Degree Completion Rates among Initial STEM Majors. Retrieved from <http://www.heri.ucla.edu/nih/downloads/2010%20-%20Hurtado,%20Eagan,%20Chang%20-%20Degrees%20of%20Success.pdf>
- 5 Abdul-Alim, J. (2013, October 17). Why are the Underrepresented Minorities Underachieving in STEM? Retrieved from <http://diverseeducation.com/article/56822/>
- 6 Landivar, L.C. (2013, September). Disparities in STEM Employment by Sex, Race, and Hispanic Origin. Retrieved from <https://www.census.gov/prod/2013pubs/acs-24.pdf>
- 7 Noonan, R. (2017, November 13). Office of the Chief Economist, Economics and Statistics Administration, U.S. Department of Commerce, ESA Issue Brief #06-17. Women in STEM: 2017 Update. Retrieved from <http://www.esa.doc.gov/sites/default/files/women-in-stem-2017-update.pdf>
- 8 Bidwell, A. (2017, March 7). Gender and Kids Matter in STEM Academia – But Not Just for Women. Retrieved from <https://www.usnews.com/news/blogs/data-mine/2014/03/07/gender-and-kids-matter-in-stem-academia-but-not-just-for-women>



# Special Thanks

In June of 2014, Posse President and Founder Deborah Bial announced the expansion of Posse's science, technology, engineering and math (STEM) program during a White House summit on higher education at which she was a panelist.

Focusing on issues of diversity in higher education, the summit included remarks by then-**President Barack Obama** and **First Lady Michelle Obama**, both of whom referenced the successes of Posse Scholars. We are thankful for their leadership in the discussion on STEM education in the United States and for their continued belief in the Posse Program.

We also thank the presidents of our 11 partner universities and colleges for their dedication to Posse Scholars and continued support of the Posse STEM Program:

**Brandeis University** President Ronald D. Liebowitz  
**Bryn Mawr College** President Kimberly Wright Cassidy  
**Davidson College** President Carol Quillen  
**Franklin & Marshall College** President Daniel R. Porterfield  
**Middlebury College** President Laurie L. Patton  
**Pomona College** President G. Gabrielle Starr  
**Smith College** President Kathleen McCartney  
**Texas A&M University** President Michael K. Young  
**University of Michigan** President Mark S. Schlissel  
**University of Wisconsin-Madison** Chancellor Rebecca M. Blank  
**Wellesley College** President Paula A. Johnson

**Jeff and Laurie Ubben** and the **Tortora Sillcox Family Foundation** have earned our heartfelt gratitude for their generous contributions in support of the development and expansion of the Posse STEM Program.

We extend further thanks to the **Altman Foundation**, **Carnegie Corporation of New York**, and the **Simons Foundation** for their significant grants supporting Posse's STEM program.

We are grateful for the additional funding for the program provided by **Con Edison**, **Stella and Charles Guttman Foundation**, **Leonetti/O'Connell Family Foundation**, **Linde Family Foundation**, **Leon Lowenstein Foundation** and **Redlich Horwitz Foundation**.

The success of the expanded Posse STEM Program would not have been possible without the knowledgeable and insightful work of Brandeis University **Professor Irv Epstein**—who, with funding from HHMI, helped pilot the Posse STEM model—and his colleagues **Associate Provost Kim Godsoe** and **Professor Melissa Kosinski-Collins**. From the inception of the Posse STEM Program, these three individuals and Brandeis as a community worked with our first Posse STEM Scholars and staff to hone a process that has yielded incredible results. Brandeis' leadership and curriculum development has paved the way for a growing community of colleges, universities and Posse Scholars invested in the work of STEM.

With expansion of the Posse STEM Program has come a robust network of advocates at each of our 11 partner colleges and universities. In particular, we must thank the Posse liaisons and STEM point people on each campus:

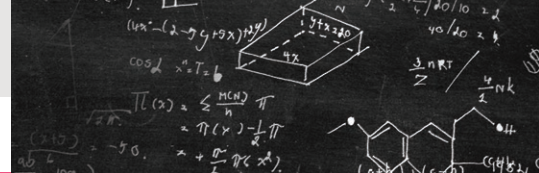
**Robert Bisor**  
**Peter D. Brodfuehrer**  
**Travis Brown**  
**Donnell Butler**  
**Verna Miller Case**  
**Vanessa Christman**  
**Sumana Datta**  
**Susan DeSimone**  
**Jocelyne Dolce**  
**Irving Epstein**  
**Miriam Feldblum**  
**Miguel Fernandez**  
**Kim Godsoe**  
**Sandra Gregerman**  
**Chris Gruber**  
**Ken Hess**  
**Emilie A. Hofacker**  
**Kedra Ishop**

**Valerie Joseph**  
**Melissa Kosinski-Collins**  
**Pedro Marengo**  
**Scott McDonald**  
**Denise McKahn**  
**Kate Queeney**  
**Stephanie Riegler**  
**Joy St. John**  
**Roger Sandwick**  
**Mike Schoenfeld**  
**Tim Scott**  
**Patrick Sims**  
**Audrey Smith**  
**Cathy Summa**  
**Sarah Theobald**  
**Peter de Villiers**  
**Jennifer Whitfield**

In addition to our partner institutions, Posse staff members have been dedicated and creative in their support of the STEM program and Scholars. We truly appreciate your effort.

Finally, we thank all the amazing Posse Scholars whose success and leadership have paved the way for expansion of this initiative, increasing opportunity for diverse young people interested in STEM.

# Posse STEM Pre-Collegiate + Immersion Programs



## Pre-Collegiate Training

Posse Scholars are selected in December and begin attending weekly after-school workshops at Posse offices in January. Workshops are facilitated by Posse trainers who continue to work with them once they have matriculated at college.

The curriculum consists of a series of workshops delivered over an eight-month period (January to August) and designed to train Posse Scholars to be successful college students and strong leaders. The program includes the following components:

- + Team Building and Group Support
- + Diversity and Cross-Cultural Communication
- + Leadership and How to Become an Active Agent of Change on Campus
- + Academic Excellence

## Specialized STEM Workshops

As part of the academic excellence component, Posse has incorporated five standard STEM workshops and activities that involve the partner institution more directly and are intended to provide college-level feedback to the Scholars.

1. Math Workshop Part I: Problem Set + STEM Culture on Campus
2. Math Workshop Part II: Applied Math
3. Lab
4. Book Report
5. Science Writing Workshops

## Two-Week Summer Immersion Program

Within their Pre-Collegiate Training experience, STEM Posse Scholars participate in a two-week summer immersion program designed to expose them to college-level STEM work. The immersion program takes place on campus where students meet with STEM professors, conduct lab work, and take part in field trips—all with the goal of familiarizing them with the rigors and rewards of study in STEM.



# Posse STEM Campus Program



## The Goal

The Campus Program helps institutions build more interactive campus environments so they can become more welcoming institutions for people from all backgrounds. It ensures that Posse Scholars persist in their academic studies and graduate so they can take on leadership positions in the workforce. The Campus Program has multiple elements.

## University Liaison

In addition to providing full-tuition leadership scholarships to Posse Scholars, each university identifies a key campus administrator to serve as liaison to the program, work closely with Posse to select Scholars and mentors, and develop a community of supporters on its campus. Strong commitment from our university partners ensures success for the program.

## STEM Point Person

Chosen from STEM faculty or senior administration, this STEM point person's main responsibility is to run the summer immersion program, coordinate with Posse staff to deliver specialized pre-collegiate workshops and advise the liaison on issues related to STEM at the university.

## STEM Mentor

Each year the partner institution and Posse work together to select a mentor, chosen from STEM faculty, for each incoming STEM Posse. The STEM mentor works collaboratively with Posse staff to support the STEM Posse on campus. Each mentor meets weekly with the Posse as a team and with each Scholar individually every two weeks during the first two years in college. Posse provides a curriculum for group meetings. The STEM Mentor also helps Scholars navigate the culture of STEM at the university and the paths to research opportunities.

## Campus Visits

Twice a semester, Posse staff visit the campus to meet with Scholars, explore career opportunities with Posse, check in with the liaison and other key faculty and staff, and provide support for mentors. Posse staff also facilitate a unique Posse graduation ceremony for our partners with graduating seniors.

## PossePlus Retreat

The PossePlus Retreat is a weekend of interactive, inspiring and challenging workshops focused on a topic chosen by Posse Scholars across the nation. A cross-section of the entire campus community, including students, faculty, and administrators, comes together to immerse themselves in an issue and invest in deepening their understanding of and communication with one another.

Retreats take place off-campus and are facilitated by Posse staff and retreat facilitators. PossePlus Retreats are a forum for social, cultural and political dialogue and also create a community for students, allowing their voices to be heard.

Recent PossePlus Retreats have centered on the following themes:

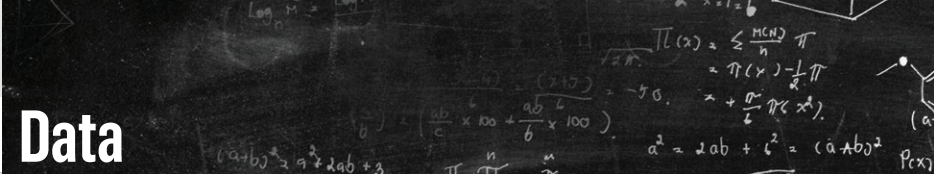
- + Hope, Hate and Race in the United States
- + Us vs. Them
- + Sticks & Stones: Language, Labels and Triggers
- + Crime & Punishment

## Off-Campus Campus Program

If a Scholar takes a leave of absence for any reason, Posse staff work to help the student return to school. They meet with the Scholar to develop a plan for re-enrollment, connecting the student to appropriate resources, and inspiring them to work diligently toward re-admission.

## Campus Research + Lab Opportunities

The partner college or university is strongly encouraged to offer research and laboratory opportunities to all STEM Posse Scholars. Beyond academic growth and networking benefits, research has shown that such opportunities increase persistence rates and more fully engage and inspire students in the STEM fields.



## 2017 Nomination Process

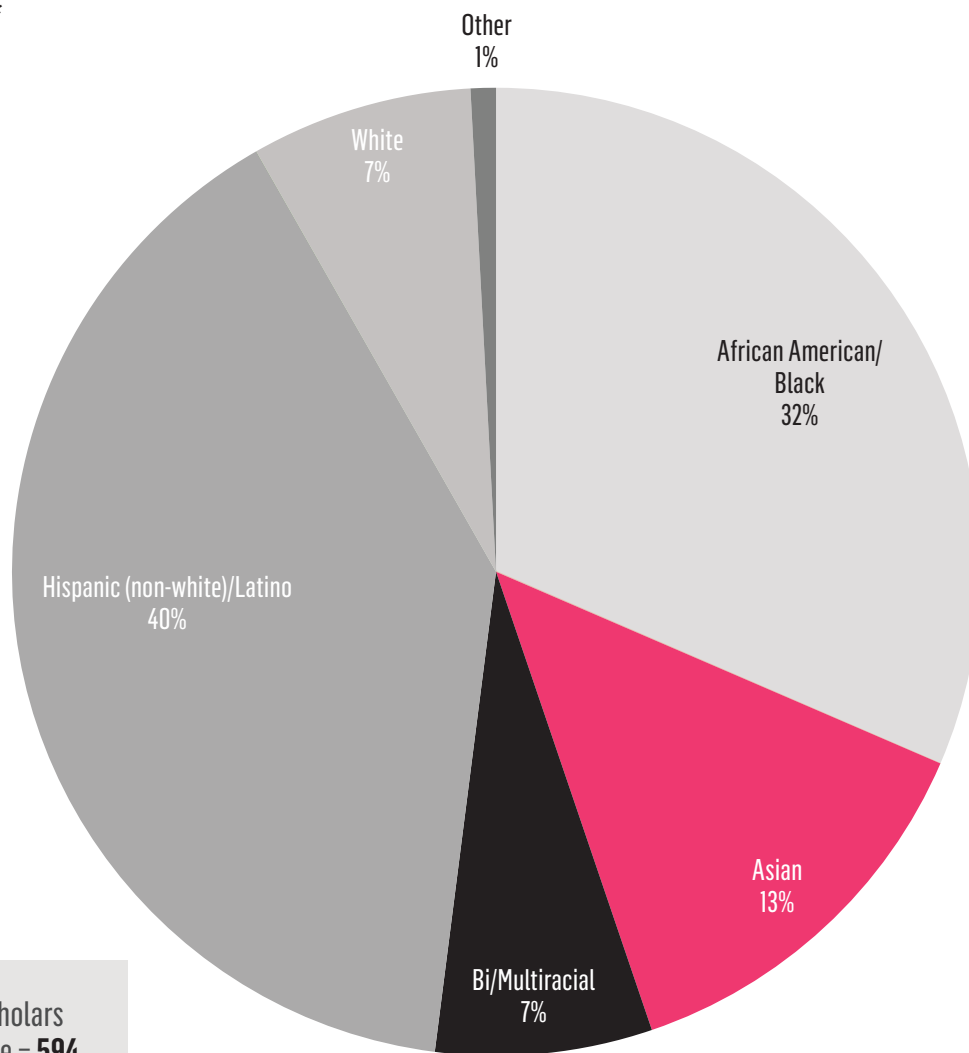
STEM Posse Nominations	4,944
Selected STEM Posse Scholars	110

## STEM Scholars Selected to Date (2007 to present)

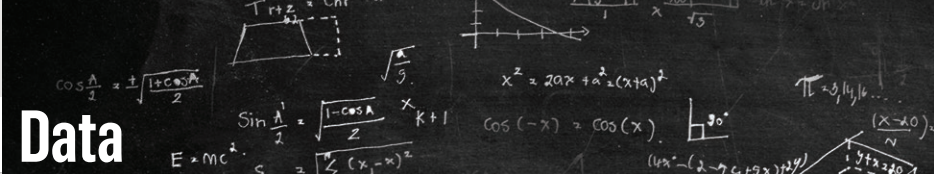
Total STEM Scholars Selected to Date	594
Average High School GPA	3.9
Average Reading + Math SAT	1208
Average ACT Composite	27
Average SAT Math Score	617
Average ACT Math Score	27

## STEM Scholars Selected to Date

### Race/Ethnicity\*

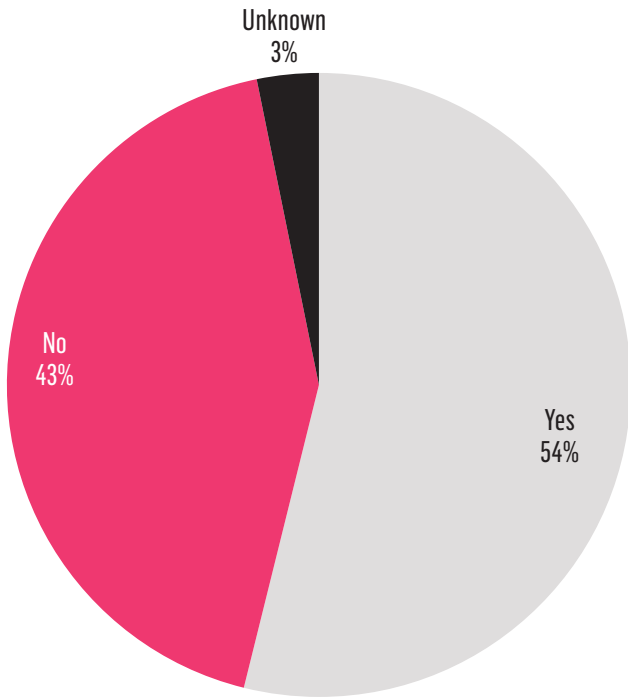


\*Total STEM Scholars Selected to Date = **594**

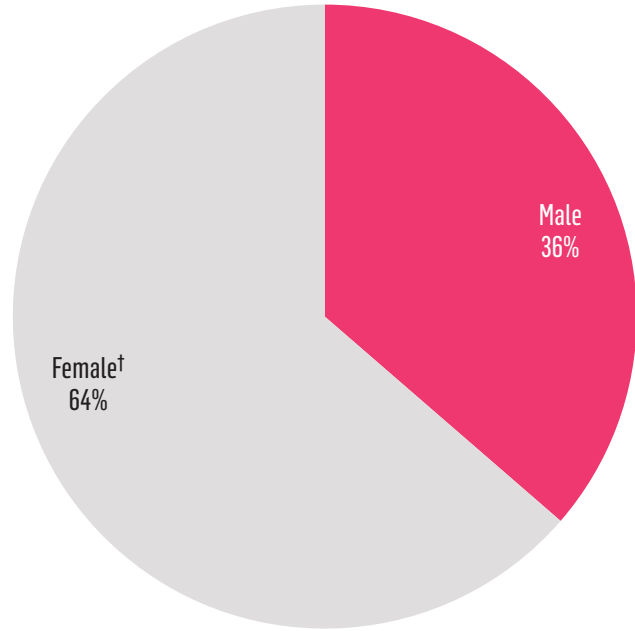


## STEM Scholars Selected to Date

### First-Generation Scholar\*



### Sex\*



\*Total STEM Scholars Selected to Date = **594**

† 3 of the 11 STEM partner institutions are women's colleges





## STEM Scholars on Campus

Total STEM Posse Scholars Currently on Campus	360
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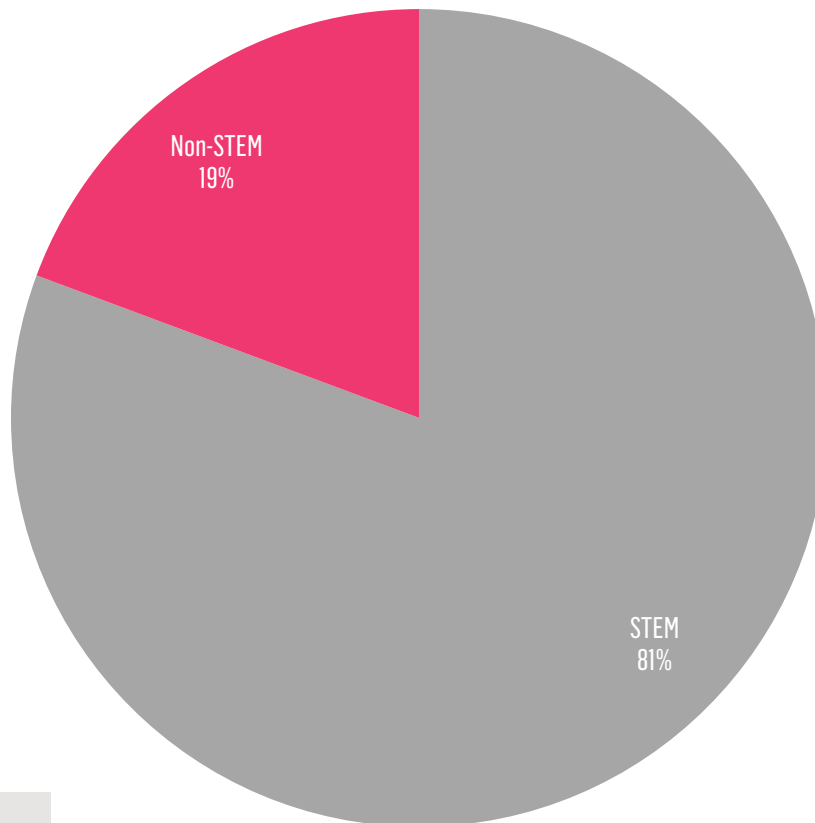
## GPA – Undergraduate STEM Scholars

### Cumulative GPA by class year

Overall	First Years	Sophomores	Juniors	Seniors
3.11	3.12	3.18	3.15	3.04

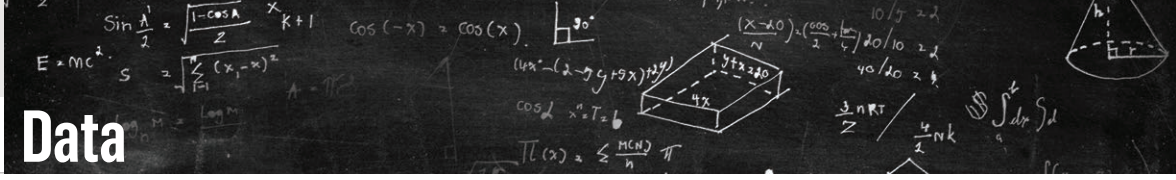
## STEM Majors – Current Juniors + Seniors\*

Definitions of STEM majors/degrees vary by institution of higher education. In order to designate STEM majors, Posse uses the STEM degree list approved by the U.S. government.<sup>†</sup>



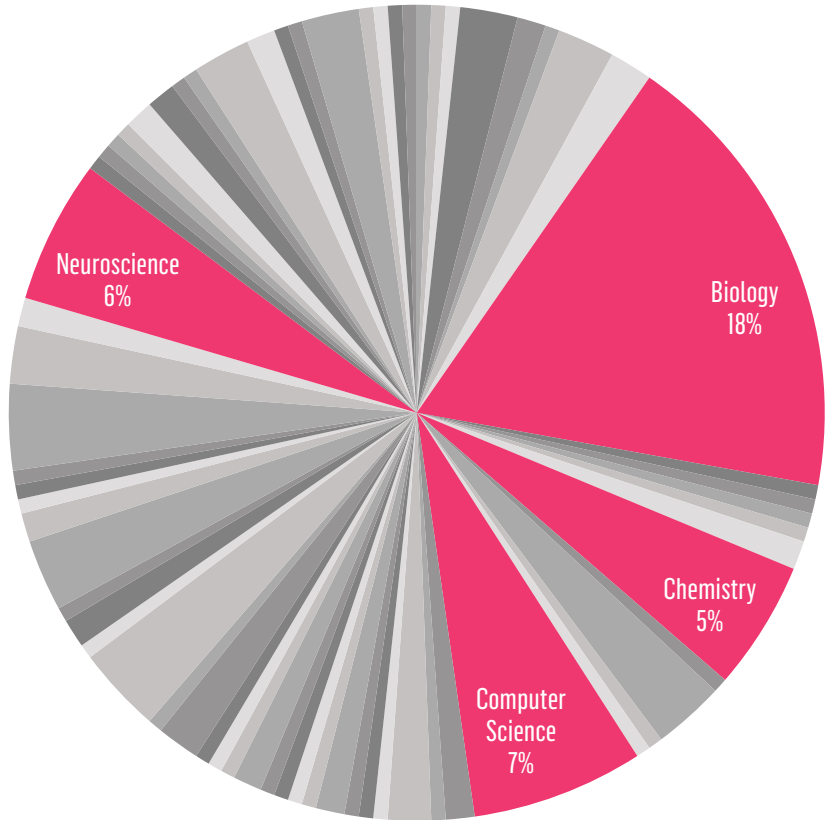
† Current STEM Juniors + Seniors = **150**

<sup>†</sup> STEM Designated Degree Program list, May 2016. <https://www.ice.gov/sites/default/files/documents/Document/2016/stem-list.pdf>



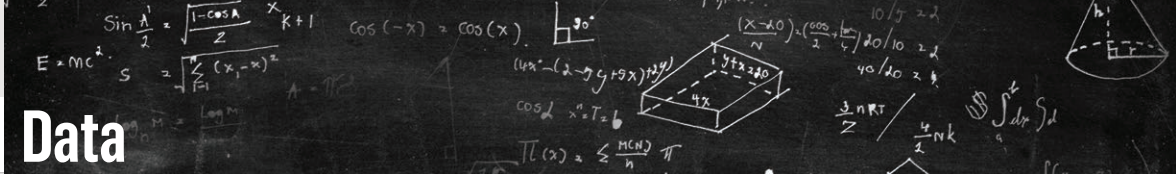
## Declared Majors – Current Juniors + Seniors\*

- 18.2% Biology
- 6.8% Computer Science
- 5.7% Neuroscience
- 5.1% Chemistry
- 3.4% Health: Science, Society and Policy
- 3.4% Mathematics
- 2.8% Civil Engineering
- 2.8% International Studies
- 2.3% Animal Behavior
- 2.3% Biochemistry
- 2.3% Molecular Biology
- 2.3% Psychology
- 2.3% Sociology
- 1.7% Biochemistry and Molecular Biology
- 1.7% Economics
- 1.7% Geology
- 1.1% Anthropology
- 1.1% Chemical Engineering
- 1.1% Construction Science
- 1.1% Engineering Science
- 1.1% Environmental Science & Policy
- 1.1% Industrial Distribution
- 1.1% Kinesiology
- 1.1% Neurobiology
- 1.1% Philosophy
- 1.1% Physics
- 1.1% Public Health
- 0.6% Aerospace Engineering
- 0.6% African and Afro-American Studies
- 0.6% Agricultural Business Management
- 0.6% Art History
- 0.6% Biomedical Engineering
- 0.6% Biomedical Sciences
- 0.6% Business
- 0.6% Business Management
- 0.6% Chemistry & Biochemistry
- 0.6% Communication Arts
- 0.6% Computer Engineering
- 0.6% East Asian Studies
- 0.6% Education Studies
- 0.6% Electrical Engineering
- 0.6% Engineering BA
- 0.6% English
- 0.6% Entomology
- 0.6% Environmental Analysis
- 0.6% Environmental Science



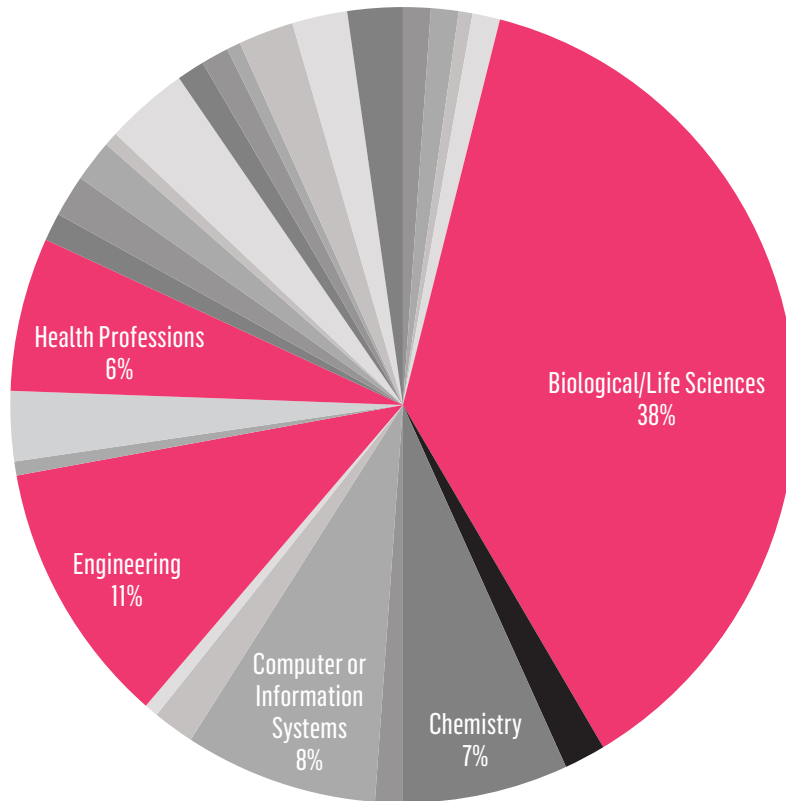
- 0.6% French
- 0.6% General Studies
- 0.6% Genetics
- 0.6% German
- 0.6% History of Art and Architecture
- 0.6% Interdisciplinary Studies
- 0.6% Language and Linguistics
- 0.6% Law
- 0.6% Legal Studies
- 0.6% Nuclear Engineering
- 0.6% Nursing
- 0.6% Nutritional Sciences
- 0.6% Petroleum Engineering
- 0.6% Political Science
- 0.6% Portuguese-Brazilian Studies
- 0.6% Public Policy Analysis
- 0.6% Scientific and Philosophical Studies of Mind
- 0.6% Technology Management
- 0.6% Theatre
- 0.6% Wildlife Ecology
- 0.6% Zoology

\*150 students  
had 176 majors



## Field of Study – Current Juniors + Seniors\*

- 37.5% Biological/Life Sciences
- 10.8% Engineering
- 8.0% Computer or Information Systems
- 6.8% Chemistry
- 6.3% Health Professions
- 3.4% Mathematics/Statistics
- 2.8% Foreign Languages/Linguistics
- 2.3% Political Science/Government
- 2.3% Psychology
- 2.3% Sociology
- 1.7% Business Commerce
- 1.7% Economics
- 1.7% Interdisciplinary Studies
- 1.7% International Relations
- 1.1% Anthropology/Archeology
- 1.1% Architecture/Environmental Design
- 1.1% Arts-Visual/Performing
- 1.1% Communications/Journalism
- 1.1% History
- 1.1% Other
- 1.1% Philosophy/Religion/Theology
- 0.6% Area/Ethnic Studies
- 0.6% Education
- 0.6% English/Literature
- 0.6% Law
- 0.6% Physics

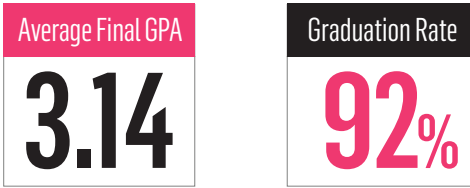


\*150 students had 176 fields of study



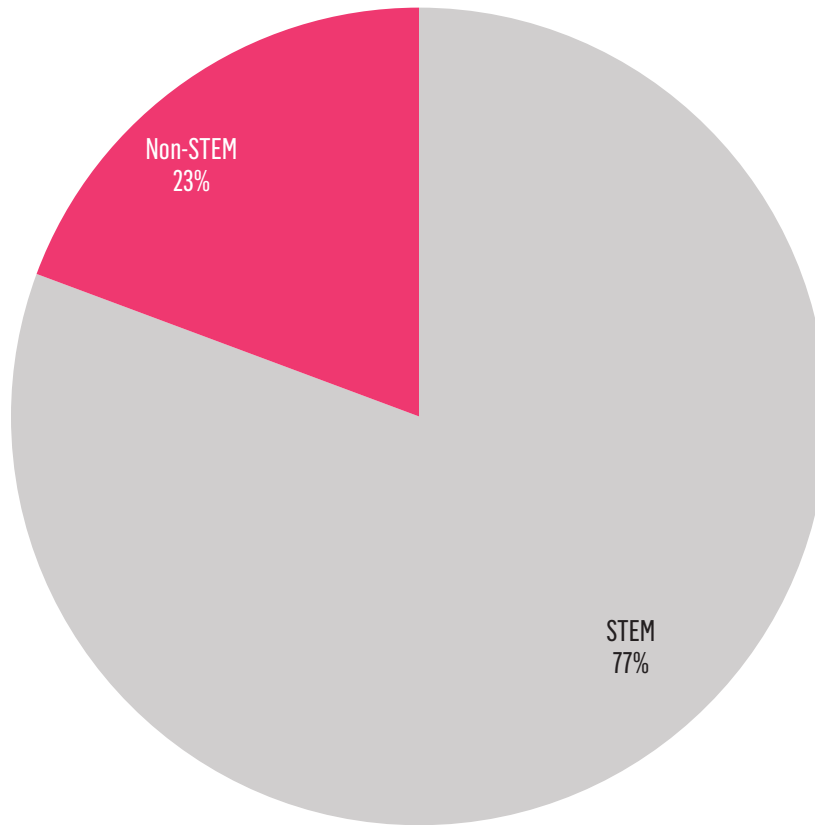


## STEM Alumni\*



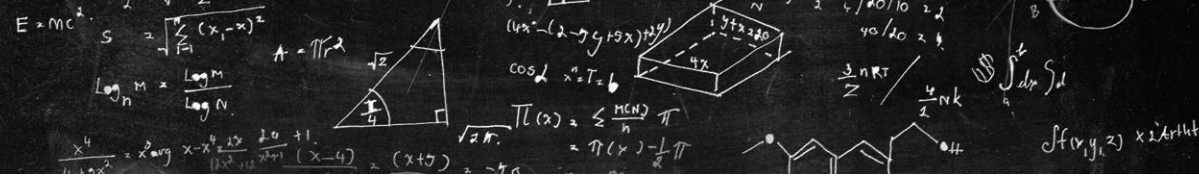
## Degree Major – STEM Alumni\*

Definitions of STEM majors/degrees vary by institution of higher education. In order to designate STEM majors, Posse uses the STEM degree list approved by the U.S. government.<sup>1</sup>



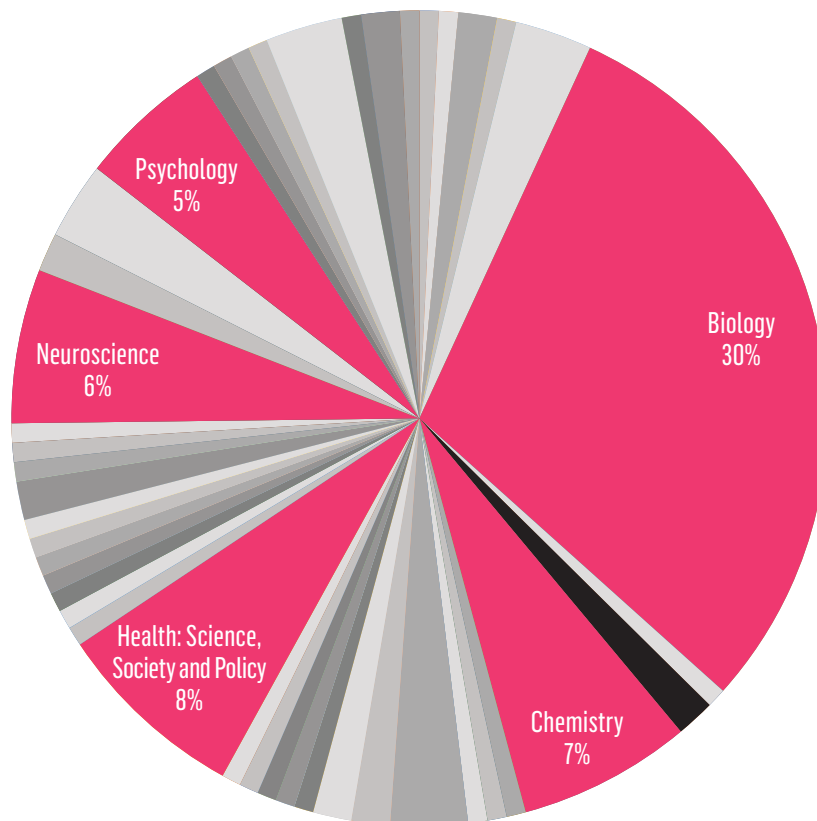
\*Total STEM alumni = **105**

<sup>1</sup> STEM Designated Degree Program list, May 2016. <https://www.ice.gov/sites/default/files/documents/Document/2016/stem-list.pdf>



## Undergraduate Majors – STEM Alumni\*

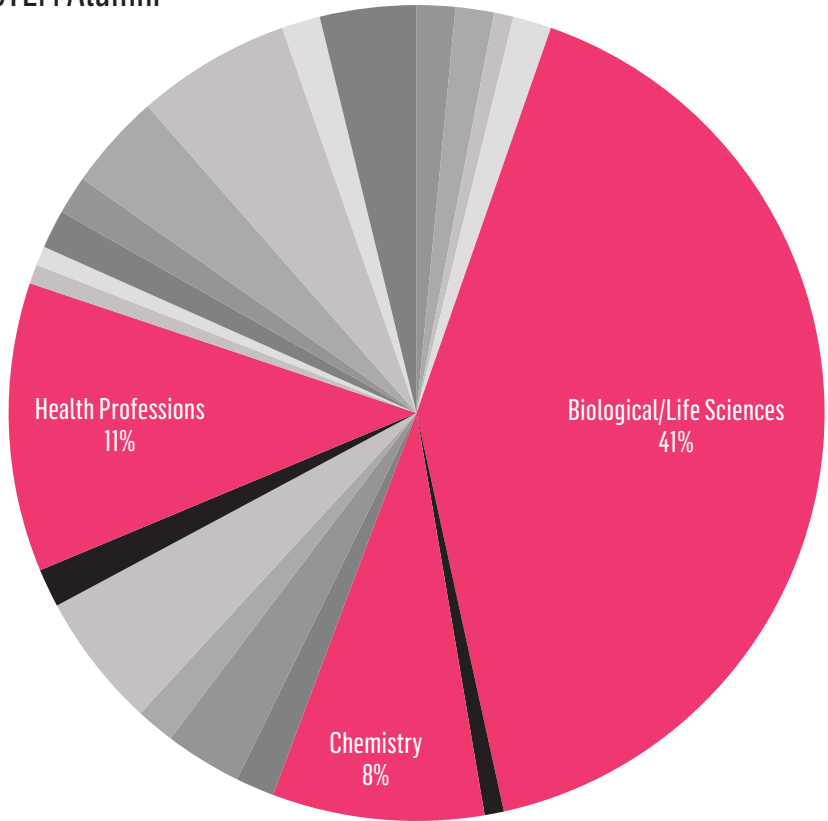
- 29.8% Biology
- 7.6% Health: Science, Society and Policy
- 6.9% Chemistry
- 6.1% Neuroscience
- 5.3% Psychology
- 3.1% Biochemistry and Molecular Biology
- 3.1% Computer Science
- 3.1% Physics
- 3.1% Sociology
- 1.5% Anthropology
- 1.5% Business
- 1.5% Economics
- 1.5% Environmental Sciences
- 1.5% Materials Science and Engineering
- 1.5% Petroleum Engineering
- 1.5% Women's and Gender Studies
- 0.8% AG- Bioenvironmental Sciences
- 0.8% Animal Science
- 0.8% Biochemistry
- 0.8% Biology - Evolutionary Biology
- 0.8% Chemistry (Chemical Biology Specialization)
- 0.8% Civil Engineering
- 0.8% Communication Arts
- 0.8% Financial Engineering
- 0.8% Gender and Women's Studies
- 0.8% Genetics
- 0.8% Geography
- 0.8% Geoscience
- 0.8% History
- 0.8% Human Development and Family Studies
- 0.8% Industrial Distribution
- 0.8% International Studies
- 0.8% Landscape Architecture
- 0.8% Language and Linguistics
- 0.8% Life Sciences Communication; with an emphasis in Strategic Communication and Data Analysis
- 0.8% Mathematics
- 0.8% Mathematics & Economics
- 0.8% Microbiology
- 0.8% Public Health
- 0.8% Scientific and Philosophical Studies of Mind (SPM)
- 0.8% Social Welfare
- 0.8% Social Work
- 0.8% Spanish
- 0.8% Zoology



\*105 alumni  
had 131 majors

## Undergraduate Degree Field of Study – STEM Alumni\*

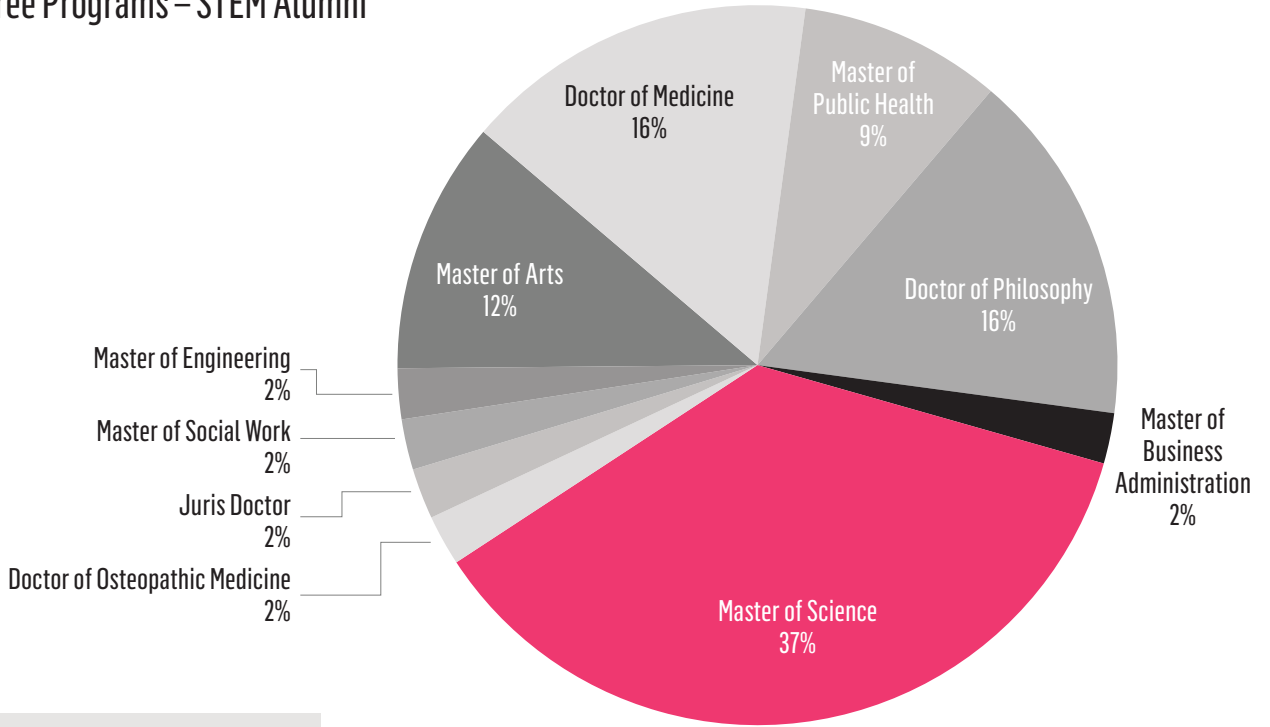
- 41.2% Biological/Life Sciences
- 11.5% Health Professions
- 8.4% Chemistry
- 6.1% Psychology
- 5.3% Engineering
- 3.8% Physical Sciences
- 3.8% Sociology
- 3.1% Computer or Information Systems
- 1.5% Agriculture and Natural Resources
- 1.5% Anthropology/Archeology
- 1.5% Area/Ethnic Studies
- 1.5% Communications/Journalism
- 1.5% Economics
- 1.5% Foreign Languages/Linguistics
- 1.5% Interdisciplinary Studies
- 1.5% Mathematics/Statistics
- 1.5% Social Work
- 0.8% Architecture/Environmental Design
- 0.8% Business Commerce
- 0.8% History
- 0.8% Human Development/Family Studies



\*105 alumni had 131 fields of study

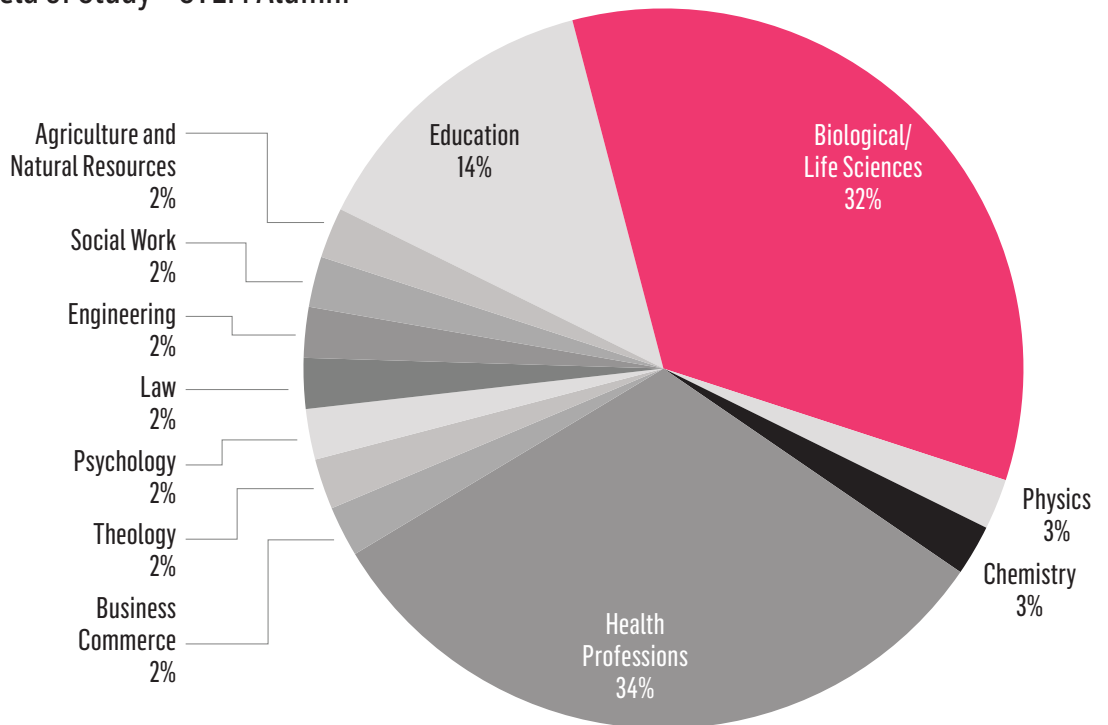


## Graduate Degree Programs – STEM Alumni\*

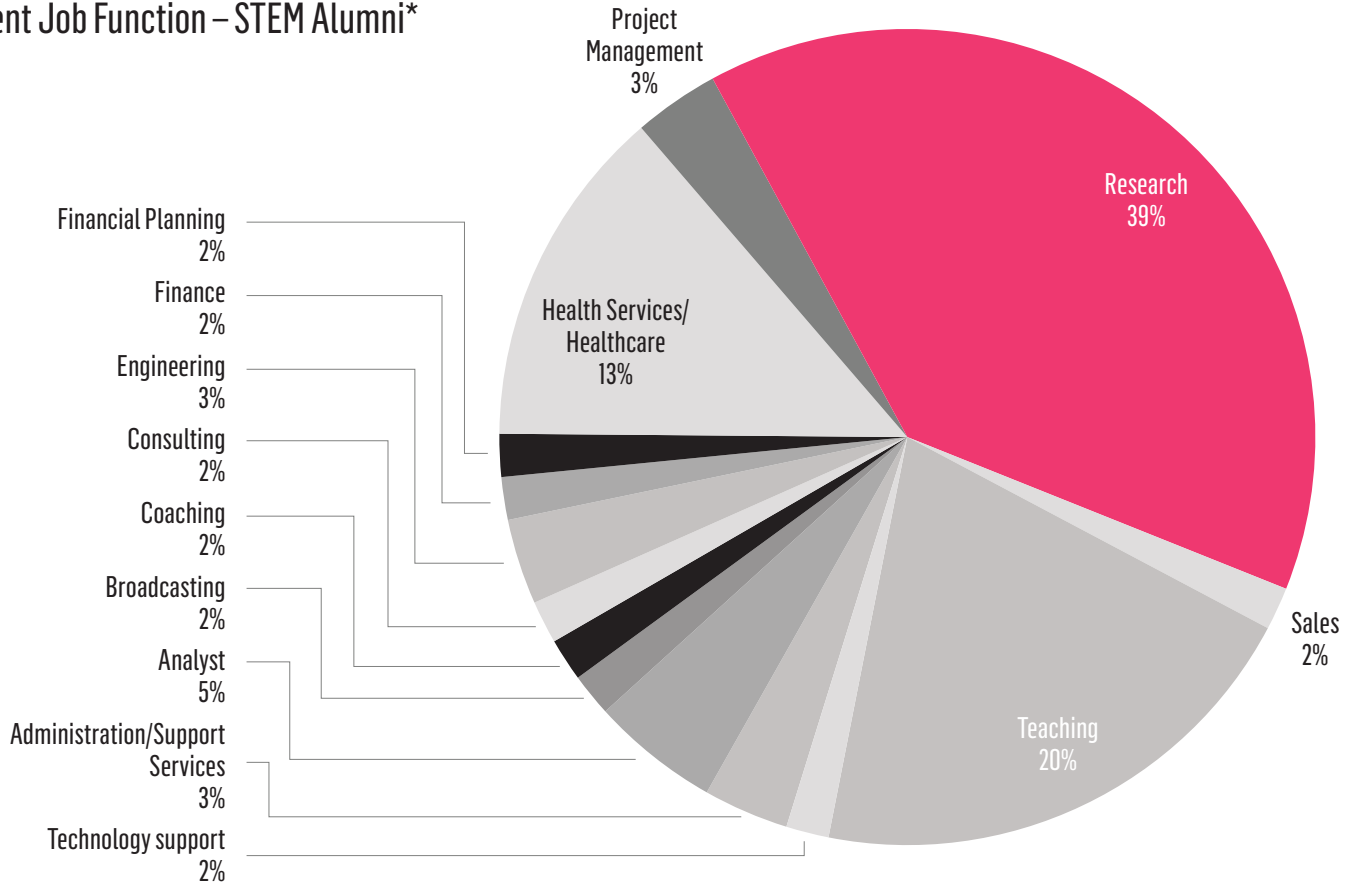


\*Total STEM alumni currently enrolled in or have completed graduate school = **44**

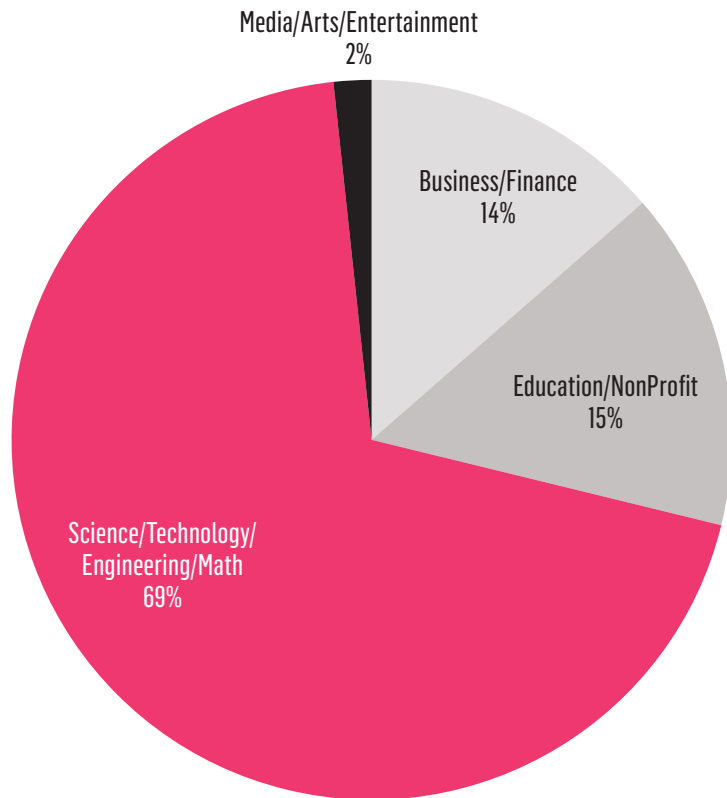
## Graduate Program Field of Study – STEM Alumni\*



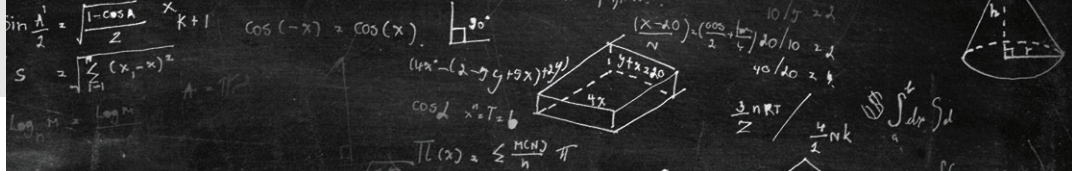
## Current Job Function – STEM Alumni\*



## Current Job Industry – STEM Alumni\*



\*n = 59



## Honors Received by STEM Scholars + Alumni

- 32BJ Training Fund Scholarship
- ABRCMS Presentation Award
- Albert Shanker College Scholarship, United Federation of Teachers
- American Physiological Society Excellence in Undergraduate Research Award
- American Physiological Society Outstanding Abstract Award
- Annual Biomedical Research Conference for Minority Students Travel Award
- Arista Scholar for Academic Excellence
- Asian & Pacific Islander American Scholarship
- Associate for Chemosensation Diversity Travel Fellowship
- Bicentennial Award
- Bonner Scholarship
- Brandeis University/NIDA Undergraduate Traineeship in Computational Neuroscience
- Brandeis University Division of Science Summer Research Fellowship
- Brandeis University India Initiative Fellowship
- Brandeis University Joel Friedland '76 Endowed Study Abroad Scholarship
- Brandeis University Sachar Scholarship
- Brandeis University Schiff Undergraduate Fellowship
- Brandeis University Student Support Services Program Scholarship
- Brandeis University Rose Schlow Award
- Carnegie Foundation Internship Award
- Cement and Concrete Workers District Council Scholarship
- Center for German European and European Studies Essay Competition, First Place
- Chandler Fulton Prize for Undergraduate Research
- CIEE GAIN Scholarship
- Clinton Global Initiative University Representative
- Committee on Grants Award
- Commonwealth Research Scholarship
- CTC Ten Fellowship
- Dana Scholar, Charles A. Dana Foundation
- Davidson Research Initiative DRI Grant
- Dean of College Travel Award
- Delphic Student-Athlete Honor Society
- Department of Multicultural Services Spotlight
- Division of Science Summer Undergraduate Research Fellowship
- Dorothy Strong Biology Scholarship
- Eli J. Segal Leadership Fellowship
- Emory International Global Health Innovation Award
- Eric C. Rackow, M.D. '67 Achievement Scholarship for Pre-Health Students
- Exceptional Research Opportunities Program (EXROP)
- Experiential Learning Fellowship
- Extreme Engineering Winning Team, SHPE National Conference
- FASEB MARC Travel Award Recipient
- Forbes 30 Under 30 Contributor
- Frank J. and Jean Raymond Entrepreneurship Scholarship
- Frontiers Master's Program, University of Michigan
- Fulbright U.S. Student Program
- Gates Millennium Scholarship
- GEM Associate Fellow
- Gilman International Scholarship Program
- Goldsmith Family Foundation Scholarship
- Greek Fraternity Leadership Award
- Hackman Research Residency Program
- Hackman Summer Scholars Program
- Harry S. Levitan Prize
- Hispanic Scholarship Fund
- Howard Hughes Medical Institute Capstone Research Fellowship
- Howard Hughes Medical Institute Research Grant
- Howard Hughes Medical Institute Medical Research Fellowship
- International Society of Automation (ISA) Scholarship, Houston Section
- International Society of Automation (ISA) Scholarship, Texas Channel Section
- Jack Kent Cooke College Scholarship
- Jaeger Mathematics Prize
- Jane's Travel Grant
- Jensen Engineering Diversity Scholarship
- Joel Friedland '76 Study Abroad Scholarship
- Kassenbrock Brothers Memorial Scholarship
- Kelsey Lynch Social Justice Scholarship
- Leaders in Engineering Excellence and Diversity Scholarship (LEED Scholar)
- Leser Grant for Biochemistry Research
- Margaret Eyer Award to Outstanding Pre-Medical Female Student
- Marshall Scholarship
- Mary Jagoda Fellowship
- Maurice J. and Fay B. Karpf & Ari Hahn Peace Endowment Award
- McKinley Pre-Honors Fellowship
- McNair Scholarship
- Mellon Mays Undergraduate Fellowship
- Meyerhoff Graduate Research Fellowship in Biomedical Sciences
- Miami-Dade County Fair & Exposition
- Michael and Irene Frangos Memorial Scholarship
- Middlebury College Scholar Distinction
- National Institutes of Health Undergraduate Scholarship Program
- National Science Foundation: Research Experience for Undergraduates (REU)
- National Society of Collegiate Scholars
- Nigerian American Multi-Service Association Scholarship
- O'Melveny & Myers Scholarship
- Outstanding General Chemistry Student Award
- Pensby Fellowship
- Phoenix Award
- President's Endowed Scholarship
- Provost's Undergraduate Award
- Rackham Merit Fellowship Program
- Rackow Summer Grant
- Rotary Scholarship of Coral Gables
- Rouse Scholarship
- SACNAS Travel Scholarship
- Scan|Design Foundation Study Abroad Scholarship
- Scholastic Art & Writing Awards, Gold Key
- Society of Hispanic Professional Engineers (SHPE) Rookie of the Year
- Society of Women Engineers Most Active Member Award
- Stanford Undergraduate Research Journal (published)
- Stephen D. Guarino Memorial Award
- Student Support Services Program Experiential Award
- Summer Medical and Dental Education Program
- Summer of Science Award
- Sustainability Fund Grant
- Terry Foundation Scholarship
- Undergraduate ALFALFA Team Research Award
- UW-Madison Engineering Freshmen Academic Achievement Award
- UW-Madison Undergraduate Research Scholar (URS)
- Vera and Donald Wallach Scholarship Award
- Wade Fetzer Award
- WiscAMP Advanced Opportunity Award
- Wisconsin Space Grant Consortium Research Award
- World of Work (WOW) Fellowship, Brandeis University



## Sultana Bhuiyan

Brandeis University, Class of 2021, Biology

Sultana joined the High School for Health Professions Science Research Program in 10th grade precisely because it provided mentorship with a Memorial Sloan Kettering Cancer Center researcher and opportunities to participate in national competitions. Sultana has earned an Emperor of Science Award for cancer research and volunteered for over 200 hours at Mount Sinai Hospital's Cardiovascular Institute. Still in her first year on campus at Brandeis, Sultana has joined the Muslim Students Association and is working toward a biology major with a possible minor in education. In long term goals, Sultana plans to earn a doctorate in cardiology and genetic therapy and spend time teaching after publishing.



## Alice Wu

Brandeis University, Class of 2020, Computer Science

Alice, a second-year student at Brandeis, has already secured two consecutive summer internships with Google. An indefatigable woman committed to a career in science, Alice is determined to excel as a coder. After teaching herself a range of skills using books, she founded her high school's robotics team. On campus at Brandeis she is a student worker at the MakerLab, a free-of-charge resource that aims to enable the entire community to improve the world by creating things with their hands, hearts and minds. Alice is also involved in the Asian-American Student Association and serves as a Student Support Services Program tutor.



## Yuying Guo

Bryn Mawr College, Class of 2018, Biology

Yuying is a first-generation college student and a senior majoring in biology. Both on and off campus, she is actively engaged in research. Throughout her four years at Bryn Mawr, Yuying has worked in a lab that studies genetic variation in budding yeast. Her interest in research also led her to work at the National Emerging Infectious Diseases Laboratories, where she explored the field of virology and studied the Ebola virus. Yuying is passionate about mentoring and tutoring younger children. She aspires to become a pediatric dentist and hopes to continue to conduct research within her profession.



## Ann Tran

Bryn Mawr College, Class of 2018, Computer Science and Mathematics

Ann Tran is a senior at Bryn Mawr with a major in computer science and minor in mathematics. An active member of the campus community, Ann was the co-class president for her first and second year. She has spent time serving as a student coordinator for Adelante, a STEM enrichment program for middle school students. In that role, Ann plans weekly lessons on STEM-related topics while incorporating a social justice component. She has also worked with a professor in the biology department, learning and applying computational biology and program language to find trends in large-scale data sets related to environmental issues. Ann has held internships in science fields for the past three summers. She was an intern at the New England Aquarium, developing her passion for whales and environmental science. In 2016, she worked at Blue Cross Blue Shield as a software developer. This past summer Ann was a technology consultant intern at PwC, and has since been hired to a full-time position following her graduation.



## Claudia Hernandez

Davidson College, Class of 2020, Chemistry

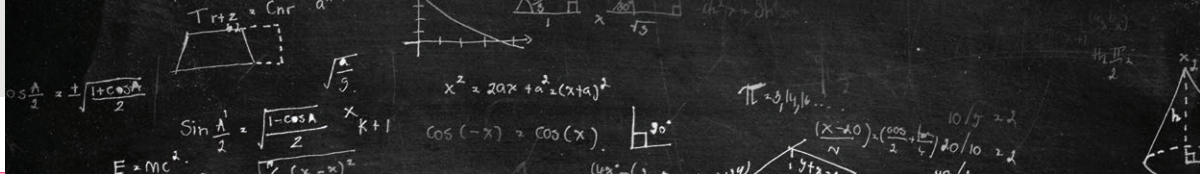
Claudia's love of chemistry started when she took a challenging high school AP class. That experience fueled a passion to work towards becoming a chemist. She dreams of working in a national laboratory, doing groundbreaking research with other chemists from around the world. Claudia's commitment to community and serving others has led to weekly volunteering with the Davidson College Presbyterian Preschool, membership in the American Chemical Society, and participation with the Davidson Civic Engagement Center. Claudia's altruism and zeal to make life better for others have been shaped by a personal love of super heroes. She is a firm believer that there is a hero in all of us.



## Jonathan Nicoleau

Davidson College, Class of 2021, Undeclared

Jonathan lives by the phrase "If you're not making someone's life better, then you're wasting your time." He spends time as a peer leader in his church, mentoring and guiding young students throughout the year. Jonathan is captain of the Davidson lacrosse team and involved in the French Honor Society. He also co-founded a nonprofit called Restore Hope Haiti that collects school supplies, toys and toiletries for needy communities in Haiti. As part of Breakthrough Miami, he teaches science to a 5th grade class and sets up workshops around Haiti to help reinforce math and English skills. Combining his passions for helping others and for science, Jonathan is interested in following a pre-med track at Davidson College.



## Jamila Gowdy

Franklin & Marshall College, Class of 2021, Biochemistry

Jamila grew up in a military family, with each of her parents deployed at multiple times during her life. In response, she created Jamila's Patriots Project which gives back to paraplegic veterans returning from combat. Pulling from her experience

as captain of her school's golf team, Jamila raises funds in the community to purchase ParaGolfer equipment for paraplegic veterans. "I never want someone to allow society or their limitations to define them," she says. Jamila plans to major in biochemistry and molecular biology at Franklin & Marshall College. She hopes to become an anesthesiologist.



## Kate Meyers

Franklin & Marshall College, Class of 2019, Chemistry

Kate is a general chemistry tutor at Franklin & Marshall College, taking pride in helping students understand the fundamentals of chemistry. She is also a Brooks house advisor, a recruitment advisor for Phi Sigma Pi, a trumpet player in the

F&M Orchestra and Philharmonic, and part of Environmental Action Alliance. Kate has had the opportunity to complete chemistry research alongside Professor Ken Hess. "It was a wonderful experience that introduced me to so many brilliant people in the department and really solidified my love for the subject," she says. She plans on attending graduate school for environmental chemistry.

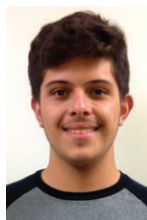


## Paola Meza

Middlebury College, Class of 2019, Neuroscience

Paola Meza is currently a junior at Middlebury College. In her first two years on campus she co-founded Underrepresented in STEM, which aims to help support students of color in the STEM field. The organization was awarded the Outstanding

New Organization Award by Middlebury College. Last year, Paola was selected for the prestigious Ubben Fellowship program, which gave her the opportunity to work directly with Karen and Irwin Redlener, founders and executive directors of the Children's Health Fund (CHF). As an Jeff Ubben Fellow at the CHF, Paola developed tutoring and teaching materials for children from low-income families who require homeschooling due to chronic health conditions. Off campus in Vermont, Paola translates at a local free low-income clinic, primarily for Spanish-speaking agricultural workers. She has served as facilitator for Middlebury's JusTalks, a forum for conversations and workshops about identity as seen through the lenses of race, class, gender, sexuality and ability. JusTalks are targeted to first-year students acclimating to college and aim to increase community dialogue and participation. Paola is also a first-generation student mentor through Middlebury's new first-generation student orientation program.



## Anthony Turcios

Middlebury College, Class of 2020, Computer Science

Anthony Turcios is a sophomore at Middlebury College. He has achieved College Honors recognition for every semester on campus so far and currently boasts a 3.70 GPA. As a first-year student, Anthony secured a teacher's assistant

position for the physics lab course "Electricity and Magnetism." This past summer he conducted research in a physics laser lab where he explored the efficacy of lasers in identifying optimal administration sites for intravenous medication. Anthony has declared a computer science major and he also tutors math and physics at the Center for Teaching, Learning and Research.

Additionally, Anthony received full funding to participate in Middlebury's Student Trek in Technology in California, where he shadowed alumni and explored Silicon Valley in a living and learning experience. Student Trek candidates are chosen based on desire for a future career in the tech industry, demonstrated through activities and coursework. While in California, Anthony shadowed professionals at Google, Paypal, TapFwd and Salesforce, and participated in events with industry representatives. He hopes to be an aerospace engineer one day, designing aircraft for military and consumer use.



## Theodore Lang

Pomona College, Class of 2019, Molecular Biology

Theodore Lang is a junior at Pomona College majoring in molecular biology. While at Pomona, he spearheaded the creation of the first Black Student Union on campus and mentors young men of color at a local high school as co-director of The Young

Men's Circle. Theodore's research interests center on cancer biology, and he hopes to attend medical school to become a pediatric hematologist or oncologist. He would like to use scientific knowledge to not only combat disease, but also to inspire future generations. His long-term goal includes building programs aimed at increasing underrepresented minorities in the sciences and in the field of medicine. As an advocate of social and health equity, Theodore wants to empower those who desire success and work with underserved communities to dismantle healthcare disparities.



## Kristina Reed

Pomona College, Class of 2019, Neuroscience

Kristina is a member of the first Miami STEM Posse at Pomona College, where she is now a junior neuroscience major. Her proudest accomplishments in college include running her first half-marathon and achieving fluency in

Spanish. She is involved in the Christian Fellowship and the Global and Public Health Committee of the Pomona Student Union. Kristina is particularly interested in studying the neuroscience of trauma, which she plans to apply to a career in emergency medicine and public health.



# Scholar Profiles



## Mariama Jaiteh

Smith College, Class of 2020, Computer Science

Mariama fell in love with Smith College in high school, drawn to the community and the focus on research. She arrived on campus already with a reputation as a diligent and ambitious academic. Now a second-year student, Mariama has used her

January term to serve on the STEM Teaching Fellows recruiting committee, where she was introduced to educational pedagogy, lesson planning, classroom management and standards while working in elementary and middle school science classrooms. Mariama is a thoughtful participant in Posse gatherings and has her sights set on more fruitful semesters ahead. To date her academic focus has been statistical and data sciences. Mariama hopes her work ethic will help her emerge as a top candidate for a career with an industry-leading company such as Accenture, Google or Girls Who Code—a program of which she is an alumna.



## Jennifer Moran

Smith College, Class of 2019, Sociology

Jennifer is a junior at Smith College and a first-generation college student. As a first-year student, Jennifer served as the vice president for her class' Smith College Class Council and has continued in student government ever since. She

has been an Elections and Appointments committee member, helping to organize and run all college and class elections. While working two jobs, Jennifer also led a Latino/a youth ministry group and served as a class reunion ambassador. She completed the Cultural Vistas program in Argentina last summer, and the School for International Training Study Abroad Social Innovation and Community Development Program in Brazil.



## Tracy Ike

Texas A&M University, Class of 2019, Petroleum Engineering

Tracy was awarded a paid three-month internship with Shell. Her experience in the field has solidified her desire to pursue a career in engineering. On campus, she works diligently to create

welcoming spaces for engineer majors generally and has become a retreat facilitator for aspiring petroleum engineering majors. Tracy uses her training as a Posse Scholar to engage the campus community in team-building activities, aiming to help others find their passion.



## Vennela Puthugunta

Texas A&M University, Class of 2019, Chemical Engineering

Vennela is well on her way to a degree in chemical engineering with a minor in business administration. She was one of 60 students selected for a 48-hour design experience at the

Engineering Innovation Center, TAMU's rapid prototyping lab. Her team won a prize to continue their project. She also joined an all-women's team in their creation of a competition-ready "super mileage" fuel-efficient car. Vennela was part of the Freshman Leadership Committee in the Society of Women Engineers and is now the committee's professional development chair. She is also a math and chemistry tutor for the TAMU and Posse community. Vennela's competitive academic record has enabled her to take on a co-op with ExxonMobil this semester. She has made her presence known on campus and intends to do the same in the workforce.



## Sopuluchukwu "Sopulu" Anidobu

University of Michigan, Class of 2021, Undeclared

The summer before Sopulu's junior year in high school, she was thrilled to attend a STEM Camp at Prairie State College. She had the chance to spend six weeks participating in classroom discussions, group projects, labs and field trips that revolved

around STEM topics. Sopulu knows that becoming a doctor will take hard work in the classroom, but she also has a deep understanding of the value of hands-on experience. She has successfully completed her first semester of college, earning a spot in the Dean's Honors List in the College of Language, Arts and Sciences. She hopes to continue solidifying her path towards becoming a doctor.



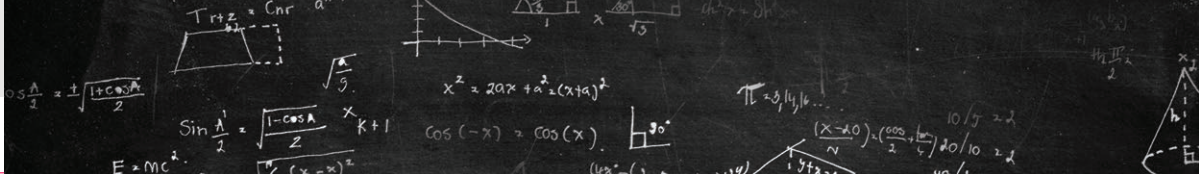
## Angelica Rose Galvan

University of Michigan, Class of 2020, Undeclared

Angelica arrived to Michigan with an unrivaled love for STEM that quickly made its mark on campus. After her first year she received funding to stay in Ann Arbor to conduct research through the Undergraduate Research Opportunities Program

(UROP) and the Intel Semiconductor Research Fellowship. She worked closely with a professor to optimize the manufacturing of a polymer scaffold conduit used for nerve repair, committing herself to her daily research from 8am-4pm. The experience sealed her love for the lab and encouraged her to work on getting her findings published.

# Scholar Profiles



## Damien Outar

University of Wisconsin-Madison, Class of 2018,  
Electrical Engineering

Damien is currently pursuing a degree in electrical engineering. He is a part of UW's Cooperative Education Program, where he has received a real-world, full-time, competitively paid engineering work assignment under the supervision of an engineer. Damien has a deep commitment to education, instilled in him by parents who immigrated to the United States from Guyana. He has served as a student leader in the UW's STEM Ambassador Initiative, a program that seeks to increase levels of retention and graduation of STEM students from underrepresented backgrounds. He has also worked as a student assistant for first-year engineering design classes, supporting students as they conceive, design and implement a product, which is then presented to a client. Damien's dream is to build robots that increase the precision and success rate of surgical procedures.



## Rizza Pineda

University of Wisconsin-Madison, Class of 2019, Biology

As someone who commuted 90 minutes each way to high school and used that time to study, Rizza understands the commitment required to excel in STEM. Now a junior at UW, Rizza thrives when she is challenged, and plans to complete a biology major on a pre-medical track. Building on this vision, she began work in the Paskewitz entomology lab on campus, and segued that opportunity into a paid position for the academic year. In June, Rizza anticipates participating in either the Summer Internship Program at Johns Hopkins University or a newly piloted health professional mentoring program managed by UW's Center for Pre-Health Advising.



## Shania Baldwin

Wellesley College, Class of 2021, Undeclared

Within the first weeks of arriving on campus, Shania ran for and was elected co-president of her class at Wellesley. She and her running mate ran on a ticket of inclusivity, emphasizing that every woman at Wellesley has a voice. Shania makes a point to model this philosophy. She tries to be a leader wherever possible, whether in the classroom, in her Posse meetings, or as a member of a Wellesley acapella group where she strives to use her voice for positive social change.



## Kimberly Hernandez

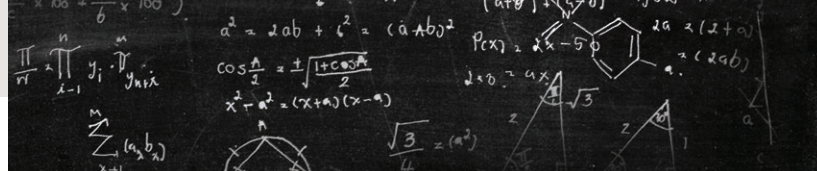
Wellesley College, Class of 2021, Undeclared

After one semester on campus, Kimberly has made a name for herself in classes with her curiosity and drive. She has made a point to explore all that Wellesley and the neighboring campuses have to offer. She has connected with the engineering community at MIT and is now a member of their Society of Hispanic Professionals in Engineering. Kimberly takes every opportunity to further her knowledge by finding online workshops and webinars to attend in her free time. She was recently invited to attend a Latina conference at Harvard this spring.



Carl J. Shapiro Science Center, Brandeis University

# Alumni Profiles



**Nicholas Medina**  
Brandeis University, Class of 2014  
Doctoral Candidate, Rackham Merit  
Fellowship, University of Michigan

Nicholas Medina attended Brandeis University as part of the first STEM Posse. He graduated with a double major in biology and environmental studies.

A New York City native,

Nicholas' interest in biology began in seventh grade when a science teacher's enthusiasm captured his curiosity. He continued to study science throughout high school and was nominated for the Posse program by his AP biology teacher.

Nicholas credits his success at Brandeis to the support he received from Posse.

"Faculty and administrators, including Katie Cousins, Kim Godsoe, Melissa Kosinski-Collins, and Irv Epstein, were vital to our growth and development as scientists," he says. "They offered personal encouragement, sent out research and summer opportunities, and wrote letters of recommendation. Such guidance was critical when many of us were unsure of what career we wanted to pursue."

As a student, Nicholas was awarded a Gilman Scholarship to study sustainability in Panama and funding from the Brandeis Hiatt Career Center to conduct climate change research in Costa Rica.

"My Posse and our mentor, trainers and liaisons were all critical to the way my college experience developed, both in the sciences and in my personal academic growth," he says.

Nicholas has now earned the Rackham Merit Fellowship at the University of Michigan and is a Ph.D. pre-candidate in ecology and evolutionary biology. His research focuses on soil ecology in agricultural environments.

In addition, Nicholas recently completed a master's thesis in Michigan's Frontiers Program on the future of nutrient recycling in forests. He has presented his findings at academic conferences hosted by the Ecological Society of America and the American Geophysical Union.

"Research is what I want to do with my life," says Nicholas. "I like the idea of answering hard scientific questions and creating new knowledge on topics such as climate change."



**Gloriya Nedler**  
Brandeis University, Class of 2012  
Doctor of Medicine Candidate,  
Technion-Rappaport Faculty of Medicine

Gloriya Nedler is a Fulbright Scholar and a current M.D. candidate at the Technion-Rappaport Faculty of Medicine in Israel. She is a member of the first STEM Posse at Brandeis University.

At Brandeis, Gloriya founded the school's chapter of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) and the Autism Art Gala. She was campus liaison for Autism Speaks and served as president of the Pre-Health Society and as a member of the Emergency Medical Corps.

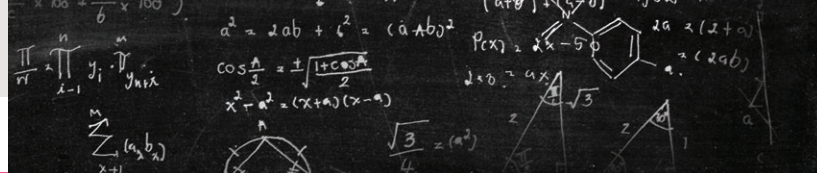
"Having the support of professors, mentors and the many others committed to the Posse STEM Program was key to solidifying my commitment to science," says Gloriya. "It helped lay the groundwork for my medical career."

Gloriya graduated with a B.S. in biology, going on to serve as a patient experience specialist at Memorial Sloan Kettering Cancer Center and director of the Languages in Healthcare Project at the AES World Languages and Cultures Institute, which empowers patients, providers and administrators in ESL communities. She has volunteered at the Hole in the Wall Gang camp and participated in the Harvard Business School Summer Venture in Management Program.

Gloriya was awarded a Fulbright Fellowship to study local healthcare administration in Eastern Europe. She hopes to apply that experience to her medical studies and future career.

"As the first person in my family to attend college, the Posse STEM Program embodied the American Dream that my parents sought for their children when immigrating to the U.S. from the Ukraine," says Gloriya. "There is no one path to a successful career in the sciences. There is no end to the success that can be achieved with the gracious support of Posse."

# Alumni Profiles



**Dr. Nana D. Sarpong**  
Brandeis University, Class of 2012  
Orthopedic Surgery Resident,  
Columbia University Medical Center

Dr. Nana O. Sarpong is a graduate of Tufts University School of Medicine and the Heller School for Social Policy and Management at Brandeis University. He is a member of the first STEM Posse at Brandeis.

Nana emigrated from Ghana to New York City at the age of seven with his mother, older sister and younger brother. An early focus on science led Nana to Life Sciences Secondary School, a small charter high school in Manhattan.

"During my junior year of high school I had an internship at Mount Sinai Hospital, which sparked my interest in medicine," says Nana.

A guidance counselor nominated Nana for the Posse Scholarship, and he was selected to be part of the inaugural class of the STEM program at Brandeis. Although the curriculum was challenging and the academic environment very competitive, Nana earned the high grades needed to gain admission to a first-rate medical school.

"I studied with kids from my Posse, especially during the first two years," says Nana. "It was a great support system."

To gain additional experience, Nana secured a summer fellowship in Ghana with Unite for Sight and a grant for a research project at the Brandeis University Agar Lab.

Nana was accepted into the highly selective Tufts Early Assurance Program as a sophomore at Brandeis, guaranteeing admission to Tufts upon successful completion of his undergraduate degree. He graduated magna cum laude with a bachelor's degree in biology and went on to earn a master's in business administration from the Heller School.

"I think a physician needs to be well versed in business and medicine," says Nana. "Hospital administration is integral to the process of providing medical attention to patients, and the need for leaders who are firmly grounded in both medicine and business has never been greater."

Nana graduated at the top of his medical school class and was inducted into the Alpha Omega Alpha Honor Society, which recognizes high academic achievement, humanistic ideals, and service to others. He is currently an orthopedic surgery resident at Columbia University Medical Center.



**Carol Bowe**  
Bryn Mawr College, Class of 2017  
Master of Education Candidate,  
Woodrow Wilson Teaching Fellowship

Carol Bowe graduated cum laude from Bryn Mawr College in 2017, with a degree in physics. She is a member of the first STEM Posse at Bryn Mawr.

"Neither of my parents attended college, and I always knew that to attend myself I would have to get a scholarship," says Carol. "Since the moment I got the phone call saying I would be a STEM Posse Scholar, I have felt extremely blessed."

During her time at Bryn Mawr, Carol worked at the Quantitative Center tutoring students in calculus, multivariable calculus and physics. She also was a student researcher at the Spectroscopy Lab, collecting data about the long-range states of molecular hydrogen.

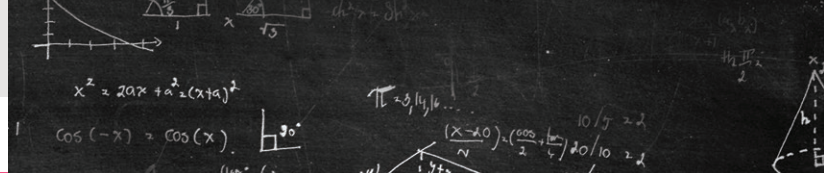
Carol spent time as an intern at Biogen Idec. in Cambridge, teaching lab techniques to middle school and high school students. She is especially proud of designing and facilitating a bioethics workshop for that group.

"I was afraid to go away to school, but being part of a Posse made it much easier," says Carol. "I have two siblings at home, and although I had to leave them, my Posse became new family."

Carol was awarded a Woodrow Wilson Teaching Fellowship, committing to teach high school physics in a high-need community while pursuing a master's degree in teaching.

"Women are so underrepresented in the sciences and it often feels like you are alone," she says. "Being part of a Posse of other women who are striving to go into science fields, who are passionate about science and math, has been so important. We are not going to let anything get in our way."

# Alumni Profiles



**Carolina Giraldo**  
Franklin & Marshall College, Class of 2016  
Research Specialist, University of Pennsylvania

Carolina Giraldo graduated from Franklin & Marshall College (F&M) in 2016 with a degree in biochemistry and molecular biology. She is a member of the first STEM Posse at F&M.

Carolina's family immigrated from Colombia to Miami when she was seven years old. She attended Maritime and Science Technology Academy, where she learned about Posse and won a four-year full-tuition scholarship to F&M.

An extra support network turned out to be critical when Carolina's father unexpectedly passed away during her freshman year.

"Posse was there for me when I needed it the most," she says. "They all stepped up to the plate and made sure my family and I were cared for. Along with the resources and guidance offered by F&M, Posse was what kept me going through the hardest time of my life, sophomore and junior years."

Carolina persevered. While at F&M she earned a Leser Grant for biochemistry research, the Eric C. Rackow Achievement Scholarship for Pre-Health Students and the Margaret Eyler Award to the Outstanding Pre-Medical Female Student. She also participated in the Hackman Research Residency Program.

In addition to her achievements in STEM, Carolina was recognized as a Mid-Atlantic Rowing All-Conference athlete, as a class officer in Student Government and as a finalist for the Whitesell Prize for first-year seminar writing.

"My interest in science combined with the death of my dad drew me to medicine," she says. "I knew that I was willing to do everything in my power to save my dad's life. If I was willing to do this for him, why shouldn't I do it for someone else's loved one?"

She is now a research specialist at the University of Pennsylvania, and is in the process of applying to medical school. Her success has served as inspiration for her brother, Luis, who also became an F&M Posse Scholar.

"My goal is to become a physician who can use her Hispanic heritage to connect underrepresented minorities to the healthcare they need," says Carolina. "None of these dreams would be possible without the help of Posse and Franklin & Marshall."



**Marvin Nicoleau**  
Franklin & Marshall College, Class of 2016  
Research Technologist, Penn State College of Medicine

Marvin Nicoleau graduated from Franklin & Marshall College (F&M) in 2016 with a bachelor's in biochemistry and molecular biology. He is a member of the first STEM Posse at F&M.

Marvin grew up in Miami and attended Miami Norland High School where he was president of the Math Honor Society and on the Junior Council of the City of Miami Gardens. Marvin also participated in the High School Careers in Medicine Workshop at the University of Miami Miller School of Medicine the summer of his junior year.

"That was a solidifying moment in my decision to pursue a career in medicine," says Marvin.

After consulting with his college advisor on ways to pursue a career in science, he was nominated and eventually selected for the STEM Posse scholarship at F&M. Marvin received support from his Posse and Posse mentor, which helped him stay on track to apply to medical school.

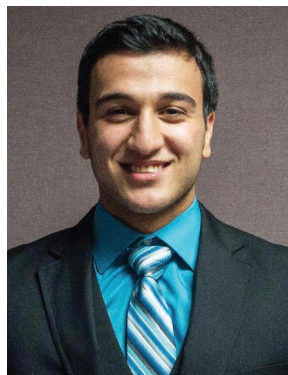
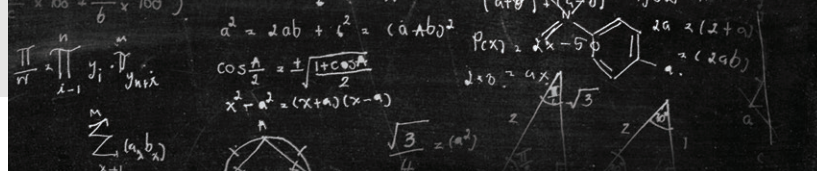
"I knew I could always go to anyone in my Posse for advice," says Marvin. "All my undergraduate clinical and research experiences were a result of one-on-one sessions and advice from my Posse mentor."

At F&M, Marvin earned the American Physiological Society Excellence in Undergraduate Research Award, the Commonwealth Research Scholarship and participated in the Lancaster General Hospital Preceptorship program.

Marvin now works at Penn State College of Medicine in pediatric pulmonary immunology and physiology as a research technologist. His current project focuses on pediatric patients undergoing post-surgical systemic inflammation from cardiac bypass surgery.

An aspiring physician, Marvin is in the process of applying to medical school.

# Alumni Profiles



**Mustafa Hussein**  
Texas A&M University, Class of 2017  
Field Engineer, Halliburton Oilfield Services

Mustafa Hussein graduated from Texas A&M University cum laude with a B.S. in petroleum engineering. He is a member of the first STEM Posse at Texas A&M.

Mustafa and his family immigrated from Iraq to the United States

during his freshman year of high school. Settling in Houston, Texas, he attended Westside High School, where he was active as a member of the National Honor Society, Business Professionals of America and the Football Rugby Club. Mustafa also gained professional experience through Genesys Works, a high school internship program.

His specific interest in petroleum engineering grew the summer after his first year at Texas A&M, during an internship for the Bristow Group, an oil and gas industry leader in transportation and support services. Mustafa went on to explore other professional experiences in the industry, including an internship with Shell.

While on campus, Mustafa became involved in the Society of Petroleum Engineers. He was inducted into two national honor societies, Phi Eta Sigma and the National Society of Collegiate Scholars. Mustafa also took advantage of Texas A&M's extensive study abroad program, spending time working and learning in Qatar.

Fluent in Arabic and proficient in Spanish, Mustafa's goal is to expand his skills further by earning an MBA, eventually becoming a leader in the gas and oil industry.

He is now a field engineer at Halliburton Oilfield Services.



**Dirk Spencer**  
University of Wisconsin-Madison, Class of 2016  
Doctoral Candidate, Stanford University

Dirk Spencer graduated from University of Wisconsin-Madison (UW) in 2016 with a bachelor's degree in molecular genetics. He is a member of the first STEM Posse at UW.

Dirk's interest in science began at the High School for Health Professions and Human Services in New York City, when

he began working in the Cell and Molecular Dynamics Lab at Columbia University. Dirk brought what he learned at Columbia back to his local Harlem Children's Society, eager to get other students interested in STEM studies.

As an undergraduate STEM Scholar at UW, Dirk excelled in the McNair Scholarship Program, a national initiative designed to prepare undergraduate students for doctoral studies. For multiple summers, he performed research at the Cancer Biology & Genetics program at Sloan-Kettering Institute. Dirk was also an active member of the campus community. Together with a fellow Posse Scholar, he co-founded STEM Outreach, a mentoring program dedicated to serving minority students in the surrounding area.

"Starting that organization was one of my proudest moments," Dirk says. "It was all about identifying an issue and then trying to help solve it in the community."

Dirk thought he disliked plant science until his freshman year at UW, when a botany professor showed him a video of a plant responding to physical damage. Dirk found the experience so inspiring that he has devoted his academic career to plant science. He is now a biology Ph.D. candidate at Stanford University.

At Stanford, Dirk concentrates on plant science but is also interested in broader biological issues. Of particular interest to him is understanding the processes by which organisms use information from the environment to produce observable responses—such as the way plants respond to seasonal changes or stressful conditions.

Dirk hopes to become a professor at a research university where he can teach and contribute to the field of botany.

# Appendix: U.S. Government Approved Degree List of STEM Majors

Acoustics	Biology Technician/Biotechnology Laboratory Technician
Actuarial Science	Biology/Biological Sciences, General
Aeronautical/Aerospace Engineering Technology/Technician	Biomathematics, Bioinformatics, and Computational Biology, Other
Aeronautics/Aviation/Aerospace Science and Technology, General	Biomedical Sciences, General
Aerospace Ground Equipment Technology	Biomedical Technology/Technician
Aerospace Physiology and Medicine	Biometry/Biometrics
Aerospace, Aeronautical and Astronautical/Space Engineering	Biophysics
Agricultural and Horticultural Plant Breeding	Biopsychology
Agricultural Animal Breeding	Biostatistics
Agricultural Engineering	Biotechnology
Agroecology and Sustainable Agriculture	Botany/Plant Biology
Agronomy and Crop Science	Botany/Plant Biology, Other
Air and Space Operational Art and Science	Business Statistics
Air and Space Operations Technology	CAD/CADD Drafting and/or Design Technology/Technician
Air Science/Airpower Studies	Cardiovascular Science
Aircraft Armament Systems Technology	Cell Biology and Anatomy
Algebra and Number Theory	Cell Physiology
Analysis and Functional Analysis	Cell/Cellular and Molecular Biology
Analytical Chemistry	Cell/Cellular Biology and Anatomical Sciences, Other
Anatomy	Cell/Cellular Biology and Histology
Animal Behavior and Ethology	Ceramic Sciences and Engineering
Animal Genetics	Chemical and Biomolecular Engineering
Animal Health	Chemical Engineering
Animal Nutrition	Chemical Engineering Technology/Technician
Animal Physiology	Chemical Engineering, Other
Animal Sciences, General	Chemical Physics
Animal Sciences, Other	Chemical Process Technology
Animation, Interactive Technology, Video Graphics and Special Effects	Chemical Technology/Technician
Applied Mathematics, General	Chemistry, General
Applied Mathematics, Other	Chemistry, Other
Aquatic Biology/Limnology	Civil Drafting and Civil Engineering CAD/CADD
Archeology	Civil Engineering Technology/Technician
Architectural and Building Sciences/Technology	Civil Engineering, General
Architectural Drafting and Architectural CAD/CADD	Civil Engineering, Other
Architectural Engineering	Clinical and Industrial Drug Development
Architectural Engineering Technology/Technician	Clinical Laboratory Science/Medical Technology/Technologist
Artificial Intelligence	Cognitive Psychology and Psycholinguistics
Astronomy	Cognitive Science
Astronomy and Astrophysics, Other	Combat Systems Engineering
Astrophysics	Command & Control (C3, C4I) Systems and Operations
Atmospheric Chemistry and Climatology	Comparative Psychology
Atmospheric Physics and Dynamics	Computational and Applied Mathematics
Atmospheric Sciences and Meteorology, General	Computational Biology
Atmospheric Sciences and Meteorology, Other	Computational Mathematics
Atomic/Molecular Physics	Computational Science
Automation Engineer Technology/Technician	Computer and Information Sciences, General
Automotive Engineering Technology/Technician	Computer and Information Sciences, Other
Behavioral Sciences	Computer and Information Systems Security/Information Assurance
Biochemical Engineering	Computer Engineering Technologies/Technicians, Other
Biochemistry	Computer Engineering Technology/Technician
Biochemistry and Molecular Biology	Computer Engineering, General
Biochemistry, Biophysics and Molecular Biology, Other	Computer Engineering, Other
Bioengineering and Biomedical Engineering	Computer Graphics
Bioinformatics	Computer Hardware Engineering
Biological and Biomedical Sciences, Other	Computer Hardware Technology/Technician
Biological and Physical Sciences	Computer Programming, Other
Biological/Biosystems Engineering	Computer Programming, Specific Applications

# Appendix: U.S. Government Approved Degree List of STEM Majors

- Computer Programming, Vendor/Product Certification
- Computer Programming/Programmer, General
- Computer Science
- Computer Software and Media Applications, Other
- Computer Software Engineering
- Computer Software Technology/Technician
- Computer Support Specialist
- Computer Systems Analysis/Analyst
- Computer Systems Networking and Telecommunications
- Computer Technology/Computer Systems Technology
- Computer/Information Technology Services Administration and Management, Other
- Condensed Matter and Materials Physics
- Conservation Biology
- Construction Engineering
- Construction Engineering Technology/Technician
- Cyber/Computer Forensics and Counterterrorism
- Cyber/Electronic Operations and Warfare
- Cytotechnology/Cytotechnologist
- Dairy Science
- Data Modeling/Warehousing and Database Administration
- Data Processing and Data Processing Technology/Technician
- Developmental and Child Psychology
- Developmental Biology and Embryology
- Digital Communication and Media/Multimedia
- Directed Energy Systems
- Drafting and Design Technology/Technician, General
- Drafting/Design Engineering Technologies/Technicians, Other
- Ecology
- Ecology and Evolutionary Biology
- Ecology, Evolution, Systematics and Population Biology, Other
- Econometrics and Quantitative Economics
- Educational Evaluation and Research
- Educational Statistics and Research Methods
- Educational/Instructional Technology
- Electrical and Electronic Engineering Technologies/Technicians, Other
- Electrical and Electronics Engineering
- Electrical, Electronic and Communications Engineering Technology/Technician
- Electrical, Electronics and Communications Engineering, Other
- Electrical/Electronics Drafting and Electrical/Electronics CAD/CADD
- Electromechanical and Instrumentation and Maintenance Technologies/Technicians, Other
- Electromechanical Engineering
- Electromechanical Technology/Electromechanical Engineering Technology
- Elementary Particle Physics
- Endocrinology
- Energy Management and Systems Technology/Technician
- Engineering Acoustics
- Engineering Chemistry
- Engineering Design
- Engineering Mechanics
- Engineering Physics/Applied Physics
- Engineering Science
- Engineering Technologies and Engineering-Related Fields, Other
- Engineering Technology, General
- Engineering, General
- Engineering, Other
- Engineering/Industrial Management
- Engineering-Related Fields, Other
- Engineering-Related Technologies, Other
- Entomology
- Environmental Biology
- Environmental Chemistry
- Environmental Control Technologies/Technicians, Other
- Environmental Engineering Technology/Environmental Technology
- Environmental Health
- Environmental Science
- Environmental Studies
- Environmental Toxicology
- Environmental/Environmental Health Engineering
- Epidemiology
- Evolutionary Biology
- Exercise Physiology
- Experimental Psychology
- Explosive Ordinance/Bomb Disposal
- Financial Mathematics
- Food Science
- Food Science and Technology, Other
- Food Technology and Processing
- Forensic Chemistry
- Forensic Science and Technology
- Forest Engineering
- Forest Sciences and Biology
- Genetics, General
- Genetics, Other
- Genome Sciences/Genomics
- Geochemistry
- Geochemistry and Petrology
- Geographic Information Science and Cartography
- Geological and Earth Sciences/Geosciences, Other
- Geological/Geophysical Engineering
- Geology/Earth Science, General
- Geometry/Geometric Analysis
- Geophysics and Seismology
- Geotechnical and Geoenvironmental Engineering
- Hazardous Materials Information Systems Technology/Technician
- Hazardous Materials Management and Waste Technology/Technician
- Health/Medical Physics
- Heating, Ventilation, Air Conditioning and Refrigeration Engineering Technology/Technician
- Horticultural Science
- Human Biology
- Human Computer Interaction
- Human/Medical Genetics
- Hydraulics and Fluid Power Technology/Technician
- Hydrology and Water Resources Science
- Immunology
- Industrial and Physical Pharmacy and Cosmetic Sciences
- Industrial Engineering
- Industrial Production Technologies/Technicians, Other
- Industrial Radiologic Technology/Technician
- Industrial Safety Technology/Technician
- Industrial Technology/Technician
- Informatics



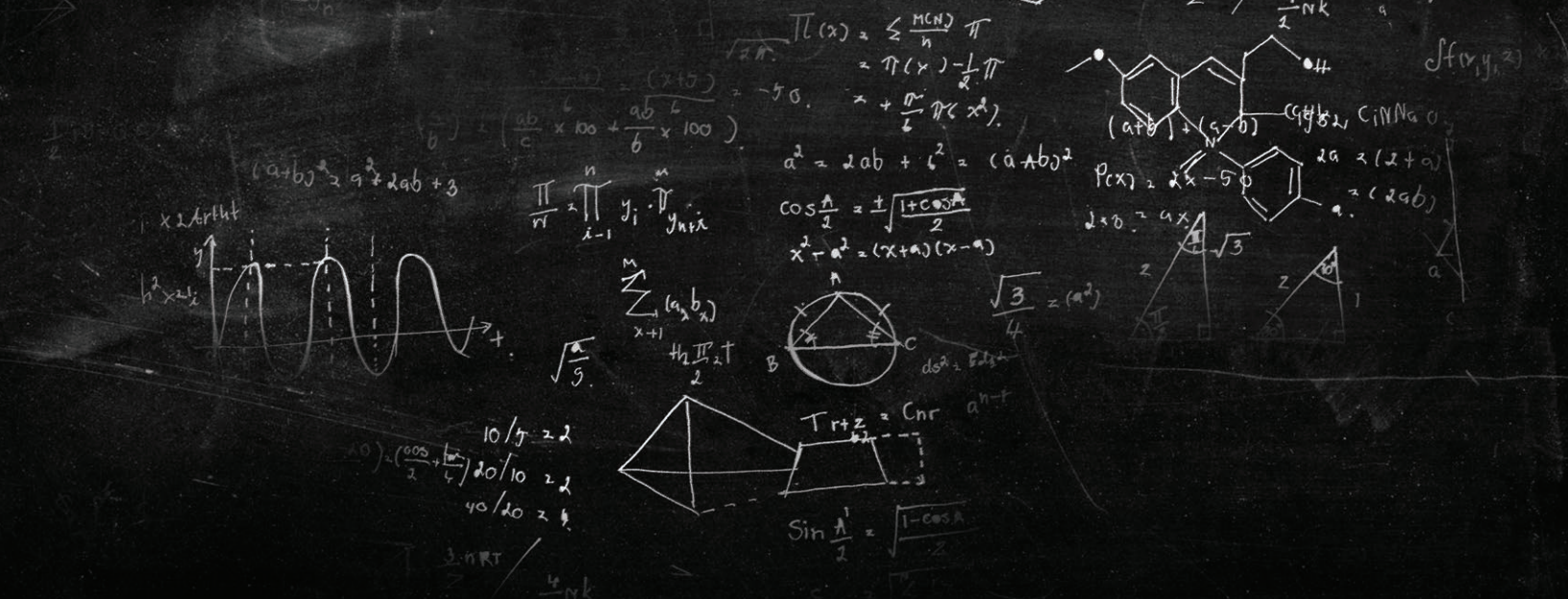
# Appendix: U.S. Government Approved Degree List of STEM Majors

Information Operations/Joint Information Operations  
Information Science/Studies  
Information Technology  
Information Technology Project Management  
Information/Psychological Warfare and Military Media Relations  
Inorganic Chemistry  
Instrumentation Technology/Technician  
Integrated Circuit Design  
Intelligence, Command Control and Information Operations, Other  
Intelligence, General  
Joint Command/Task Force (C3, C4I) Systems  
Laser and Optical Engineering  
Laser and Optical Technology/Technician  
Livestock Management  
Low-Observables and Stealth Technology  
Management Science  
Management Science and Quantitative Methods, Other  
Manufacturing Engineering  
Manufacturing Engineering Technology/Technician  
Marine Biology and Biological Oceanography  
Marine Sciences  
Materials Chemistry  
Materials Engineering  
Materials Science  
Materials Sciences, Other  
Mathematical Biology  
Mathematical Statistics and Probability  
Mathematics and Computer Science  
Mathematics and Statistics  
Mathematics and Statistics, Other  
Mathematics, General  
Mathematics, Other  
Mechanical Drafting and Mechanical Drafting CAD/CADD  
Mechanical Engineering  
Mechanical Engineering Related Technologies/Technicians, Other  
Mechanical Engineering/Mechanical Technology/Technician  
Mechatronics, Robotics, and Automation Engineering  
Medical Informatics  
Medical Microbiology and Bacteriology  
Medical Scientist  
Medicinal and Pharmaceutical Chemistry  
Metallurgical Engineering  
Metallurgical Technology/Technician  
Meteorology  
Microbial and Eukaryotic Genetics  
Microbiological Sciences and Immunology, Other  
Microbiology and Immunology  
Microbiology, General  
Military Applied Sciences, Other  
Military Information Systems Technology  
Military Systems and Maintenance Technology, Other  
Military Technologies and Applied Sciences, Other  
Mining and Mineral Engineering  
Mining and Petroleum Technologies/Technicians, Other  
Mining Technology/Technician  
Missile and Space Systems Technology  
Modeling, Virtual Environments and Simulation  
Molecular Biochemistry  
Molecular Biology  
Molecular Biophysics  
Molecular Genetics  
Molecular Medicine  
Molecular Pharmacology  
Molecular Physiology  
Molecular Toxicology  
Munitions Systems/Ordinance Technology  
Mycology  
Nanotechnology  
Natural Products Chemistry and Pharmacognosy  
Natural Resources Conservation and Research, Other  
Natural Resources/Conservation, General  
Natural Sciences  
Naval Architecture and Marine Engineering  
Naval Science and Operational Studies  
Network and System Administration/Administrator  
Neuroanatomy  
Neurobiology and Anatomy  
Neurobiology and Behavior  
Neurobiology and Neurosciences, Other  
Neuropharmacology  
Neuroscience  
Nuclear and Industrial Radiologic Technologies/Technicians, Other  
Nuclear Engineering  
Nuclear Engineering Technology/Technician  
Nuclear Physics  
Nuclear/Nuclear Power Technology/Technician  
Nutrition Sciences  
Occupational Safety and Health Technology/Technician  
Ocean Engineering  
Oceanography, Chemical and Physical  
Oncology and Cancer Biology  
Operational Oceanography  
Operations Research  
Optics/Optical Sciences  
Organic Chemistry  
Packaging Science  
Paleontology  
Paper Science and Engineering  
Parasitology  
Pathology/Experimental Pathology  
Personality Psychology  
Petroleum Engineering  
Petroleum Technology/Technician  
Pharmaceutical Sciences  
Pharmaceutics and Drug Design  
Pharmacoeconomics/Pharmaceutical Economics  
Pharmacology  
Pharmacology and Toxicology  
Pharmacology and Toxicology, Other  
Photobiology  
Physical Chemistry  
Physical Science Technologies/Technicians, Other  
Physical Sciences  
Physical Sciences, Other

# Appendix: U.S. Government Approved Degree List of STEM Majors

- Physics, General
- Physics, Other
- Physiological Psychology/Psychobiology
- Physiology, General
- Physiology, Pathology, and Related Sciences, Other
- Planetary Astronomy and Science
- Plant Genetics
- Plant Molecular Biology
- Plant Pathology/Phytopathology
- Plant Physiology
- Plant Protection and Integrated Pest Management
- Plant Sciences, General
- Plant Sciences, Other
- Plasma and High-Temperature Physics
- Plastics and Polymer Engineering Technology/Technician
- Polymer Chemistry
- Polymer/Plastics Engineering
- Population Biology
- Poultry Science
- Pre-Engineering
- Psychometrics and Quantitative Psychology
- Psychopharmacology
- Quality Control and Safety Technologies/Technicians, Other
- Quality Control Technology/Technician
- Radar Communications and Systems Technology
- Radiation Biology/Radiobiology
- Range Science and Management
- Reproductive Biology
- Research and Experimental Psychology, Other
- Robotics Technology/Technician
- Science Technologies/Technicians, General
- Science Technologies/Technicians, Other
- Semiconductor Manufacturing Technology
- Signal/Geospatial Intelligence
- Social Psychology
- Soil Chemistry and Physics
- Soil Microbiology
- Soil Science and Agronomy, General
- Soil Sciences, Other
- Solar Energy Technology/Technician
- Space Systems Operations
- Statistics, General
- Statistics, Other
- Strategic Intelligence
- Structural Biology
- Structural Engineering
- Surveying Engineering
- Surveying Technology/Surveying
- Sustainability Studies
- System, Networking, and LAN/WAN Management/Manager
- Systematic Biology/Biological Systematics
- Systems Engineering
- Systems Science and Theory
- Telecommunications Technology/Technician
- Telecommunications Engineering
- Textile Sciences and Engineering
- Theoretical and Mathematical Physics
- Theoretical Chemistry
- Topology and Foundations
- Toxicology
- Transportation and Highway Engineering
- Undersea Warfare
- Urban Forestry
- Veterinary Anatomy
- Veterinary Infectious Diseases
- Veterinary Microbiology and Immunobiology
- Veterinary Pathology and Pathobiology
- Veterinary Physiology
- Veterinary Preventive Medicine Epidemiology and Public Health
- Veterinary Toxicology and Pharmacology
- Virology
- Vision Science/Physiological Optics
- Water Quality and Wastewater Treatment Management and Recycling Technology/Technician
- Water Resources Engineering
- Water, Wetlands, and Marine Resources Management
- Web Page, Digital/Multimedia and Information Resources Design
- Web/Multimedia Management and Webmaster
- Welding Engineering Technology/Technician
- Wildlife Biology
- Wildlife, Fish and Wildlands Science and Management
- Wood Science and Wood Products/Pulp and Paper Technology
- Zoology/Animal Biology
- Zoology/Animal Biology, Other





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