

Session: Human Capital and Workforce Development

Dr. Mentewab Ayalew
Associate Professor of Biology
Spelman College

Ethiopia2050 Conference
Addis Abeba, December 19th, 2019

My Background

- Undergraduate: Ingenieur Agronome (Biotechnology), France
- PhD: Plant Cellular and Molecular Biology, France
- Postdoc: Applied and fundamental plant science research, USA (NC and TN)
 - Characterized the first antibiotic resistance gene in plants
- Associate Professor of Biology at Spelman College, USA

Spelman College

- Private four year liberal arts college for women
 - HBCU founded in 1881
 - Located in Atlanta, GA (USA)
- Today, an institution that empowers and equips black women - 'A Choice to change the world'
 - Strong STEM programs
 - Strong legacy in Social Justice



No. 1 HBCU Since 2006
Tied for No. 61, Nat'l Liberal Arts Colleges
(increased by 11 places in 2017)



75% 6-Year Graduation Rate
Cohort: Fall 2011 Source: Office of Institutional Research



43 Gates Millennium Scholars
Highest among colleges & universities in the country



**Among Top 35 producers of
Fulbright Fellows**



**Leading producer of Black women who
earn doctorates in STEM fields**

SPELMAN PRIDE POINTS

WSJ **Top 10%** of colleges and universities

WSJ **No. 3** in student satisfaction

The New York Times **No. 8** in overall **social mobility** among colleges in Georgia

ie **No. 25** Institute for Int'l Education
Open Door rankings for study abroad

BENJAMIN A. GILMAN **Top producer of Gilman Scholarships** by
INTERNATIONAL SCHOLARSHIP U.S. Department of State

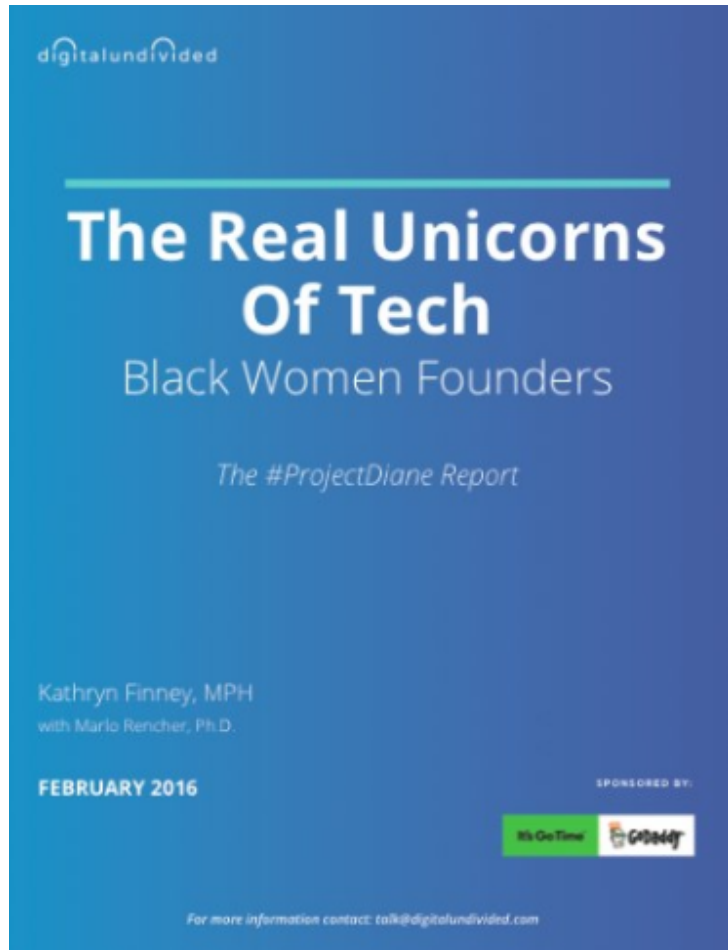
SPELMAN PRIDE POINTS

Top Baccalaureate Institutions that Produce Black Women who Complete PhDs in STEM Fields, 2008-2012

Academic institution	Doctorate recipients
Female, all institutions	2,956
Foreign or unknown	488
Top 53 U.S. institutions	1,064
Spelman C.	81
Howard U.	71
Xavier U. LA	54
Hampton U.	39
U. MD, Baltimore County	31
FL A&M U.	30
Jackson State U.	30
TN State U.	25
U. MD, College Park	25
Morgan State U.	23
AL A&M U.	22
Cornell U.	22

SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Survey of

Tech Founders



Spelman College is among the top 10 schools that produce Black women founders of technology companies

What are the elements that enable such success?

- Can it be replicated in other settings?
- The Spelman ecosystem (ecological model)
 - Leadership
 - Peers
 - Alumnae
 - Faculty
 - Other role models
 - Strategic partnerships
 - Funding

Visionary leaders

- The Founders: Sophia Packard and Harriet Giles
- Currently: 10th President Mary Schmidt-Campbell, PhD
 - Tech and Arts - Center for Innovation and the Arts
 - Data Science – AUC wide
 - Retention (scholarships)



Peers

- Critical mass of peers
 - Diversity!
- Interconnected (sense of belonging)
 - Study sessions
 - Interest groups, clubs, LLCs
 - e.g. LINCS Scholars
 - Student Government Association

High Impact Cohorts (A Selection)

- Social Justice Fellows
- SGA
- Afrikete
- Ethel Waddell Githii Honors
- LINCS
- Navy ROTC
- G-Stem Scholars
- Pauline E. Drake Scholars
- President's Book Circle
- WISDOM
- LEADS
- Bonner Scholars
- Miss Spelman and Court
- Sororities
- Arts groups
- American Chemical Society (student chapter)

Alumnae

- Alumnae are regularly invited to departmental fora or campus wide events
 - Role models, networking, mentoring
- Examples
 - Rosalind Brewer
 - Stacey Abrams
 - Evelyn Hammonds

Rosalind Gates Brewer

- Starbucks group president and chief operating officer
- chair of Spelman's Board of Trustees
- Previous CEO of Sam's Club
- Amazon Board member
- **Forbes 100 Most Powerful Women list 2019**





TED Speaker

Stacey Abrams

Politician

[Fair Fight Georgia](#)

[@staceyabrams](#)

TED Speaker

Former Georgia House Democratic Leader Stacey Abrams made history in 2018 when she earned the Democratic nomination for governor of Georgia.

The Washington Post

Democracy Dies in Darkness

Georgia purged 309,000 voters from its rolls. It's the second state to make cuts in less than a week.



A voting rights group founded by Democrat Stacey Abrams is fighting Georgia's mass purge of voters. (Michael A. McCay/AP)

By Reis Thebaud and Hannah Knowles

Evelyn Hammonds

- Barbara Gutmann Rosenkrantz professor and chair of the Department of History of Science
- investigating the relationship of race, science and medicine
- **newly elected member of the National Academy of Medicine**



Other role models

- Michelle Obama
- Nancy Pelosi
- Angela Davis
- Kamala Harris

Faculty

- Faculty-student interactions
 - highly committed to the students
 - diverse (role modeling)
 - high expectations
- Faculty Excel as Teacher-Scholars
 - Research active
 - Also a requirement for Biology majors
 - Innovative curricula and programs
 - e.g. Infusing quantitative and computational thinking in the Biology curriculum
 - e.g. AUC Data Science Initiative
 - Service
 - e. g. co-directing LINCS

Science and Research Funding

- Faculty Research
- Programs
 - Student research
 - Summer bridge
 - Centers



hhmi

Howard Hughes
Medical Institute

Strategic Partnerships

- Examples:
 - MIT Quantitative Biology Workshop
 - Attended by 5-6 students
 - Broad Institute of MIT and Harvard
 - Speaker series
 - Workshop for faculty
 - Summer research for students

Lessons learned

- The Spelman model
 - A clear vision informs strategies and activities
 - Sustainable: connectivity, layers, redundancy
- Paradigm shift in US higher education
 - ‘Inclusive Excellence’
 - Fixing the students > fixing the institutions
- Success in programs such as the Meyerhof program at UMBC