Southern University Institution, Research Portfolio, and Collaborations

Mohammad Abdus Salam
Professor and Graduate Coordinator
Department of Computer Science
Southern University, Baton Rouge, Louisiana
md.salam@sus.edu
More than 140 years ago, in 1880, three delegates to the Louisiana State Constructional Convention presented a vision for an institution of higher learning that would serve anyone — particularly Black Americans — who desired to further their education.

That vision — presented by P.B.S. Pinchback, T. T. Allain, T. B. Stamps, and Henry Demas — became a reality when Southern University opened its doors in New Orleans in 1914 that same year with a budget appropriation of $10,000 and 12 students.

Receiving a portion of a $50,000 national land-grant appropriation in 1914, the “new” Southern University opened in this part of Baton Rouge, the capital of the state.

Throughout the 20th Century and beyond, the university has made great strides.
Southern University – Highlights

• Southern University has more than 30 academic programs awarding bachelor’s, master’s, and doctoral degrees. SUBR campus has more than 7,404 students.

• SU hosts students from more than 20 countries.

• The university’s athletic programs have witnessed a resurgence and its world-acclaimed marching band — the Human Jukebox — is inarguably one of the most elite college marching bands in the nation.

• Southern University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS).

• It is part of the five-campus Southern University System, the only historically Black university system in the nation. More than 12,000 students in 5 campuses.
Research Portfolio

The **vision for research** is to build and sustain an infrastructure that encourages greater participation by faculty in sponsored and elective research and related activities. The ultimate measurable outcomes of achieving this vision are that such research efforts would result in:

- increased number of publications in refereed journals
- greater and more significant opportunities for its graduate and undergraduate students to participate in scholarly activities and research with their professors, and
- building nationally reputable and competitive academic departments, colleges, schools, and centers.

University Commitment to Research

*The University is committed to a broad program of research, both basic and applied, and creative work to stimulate the faculty and students in a quest for knowledge and to aid society in resolving its scientific, technological, socioeconomic, and cultural problems.*
Recent projects and collaborations include a partnership with energy company Entergy to support classroom and lab infrastructure improvements to increase the number of minority engineers;

- Partnership with international technology company DXC, which aims to expand the number of degrees awarded annually in computer science, management, and STEM-related fields;

- Build a continued relationships with Fortune 500 companies (IBM, Microsoft) and government agencies such as NASA and NSF

- The recent establishment of the Valdry Center for Philanthropy, which offers programming in the philanthropic and nonprofit fields.
Collaborations – Research Activities

FY 2018-2020: July 1, 2018 – June 30, 2019
Proposals Submitted 71, Amount Requested: $37,127,447.60
Proposals Funded: 61, Amount Awarded: $16,002,770.24

FY 2019-2020: July 1, 2019 – June 30, 2020
Proposals Submitted 89, Amount Requested: $38,103,320.31
Proposals Funded: 52, Amount Awarded: $20,513,117.20

FY 2020-2021: July 1, 2020 – June 30, 2021
Proposals Submitted 93, Amount Requested: $48,335,711.95
Proposals Funded: 78, Amount Awarded: $21,334,426.80

Fiscal Year: 2018-2021

<table>
<thead>
<tr>
<th>Year</th>
<th>Proposed Amount</th>
<th>Funded Amount</th>
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<td>2018-2020</td>
<td>$37,127,447.60</td>
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Collaborations - Funding Agencies
Collaborations with Other Universities

- Louisiana State University
- University of Louisiana at Lafayette
- Grambling State University
- Tulane University
- The University of Alabama
- Northwestern State University
- University of Delaware
- The University of Kentucky Research Foundation
- University of Iowa
- The FinTech Center at Morgan State University
- North Carolina Central University, and many other universities.
Thank you!

md.salam@sus.edu
Spelman College: Preparing the Next Generation of Computer Scientists

DR. RAQUEL HILL
CHAIR, COMPUTER AND INFORMATION SCIENCES DEPARTMENT
Spelman College

- Global Leader in the education of women of African descent
- Recognized by the National Science Foundation as the leading producer of Black women who go on to earn doctorates in the sciences
  - 1/3 of our students enter graduate or professional school immediately after graduation
- More than 2100 students from 43 states and 10 foreign countries
- Graduation Rate is 76% (six year average) is the highest among all HBCUs and is well above the national graduation rate (44%) for African American students.
- Ranked among the top 20 “Best Women’s Colleges” in 2016 (BestColleges.com)
- Ranked as the No. 1 historically Black College and University in the country for over 10 consecutive years (U.S. News and World Report)
- In 2022: #24 in Best Undergraduate Teaching (tie), #7 In Most Innovative Schools (tie), #4 in Top Performers on Social Mobility (U.S. News and World Report)
# Spelman College: Retention Rate

<table>
<thead>
<tr>
<th>Cohort Year</th>
<th>Spelman College</th>
<th>Liberal Arts Colleges*</th>
<th>National Average**</th>
<th>HBCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>89%</td>
<td>84%</td>
<td>74%</td>
<td>67%</td>
</tr>
<tr>
<td>2014</td>
<td>90%</td>
<td>84%</td>
<td>75%</td>
<td>67%</td>
</tr>
<tr>
<td>2015</td>
<td>91%</td>
<td>84%</td>
<td>75%</td>
<td>65%</td>
</tr>
<tr>
<td>2016</td>
<td>89%</td>
<td>80%</td>
<td>72%</td>
<td>62%</td>
</tr>
<tr>
<td>2017</td>
<td>91%</td>
<td>***</td>
<td>***</td>
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</tr>
</tbody>
</table>

*Liberal Arts Colleges: Carnegie Classification. Baccalaureate Colleges: Arts & Sciences Focus
**National Average includes all 4-year institutions in the United States of America.
***Comparison group data are not yet available for the 2017 Cohort in the IPEDS Data Center

## Second-Year Retention Rates

![Second-Year Retention Rates Chart](chart.png)
Computer Science at Spelman: Funding

• Endowed Scholarship
  • 2020: The CIS Department created an Endowed Scholarship to honor the service of Dr. Andrea Lawrence [https://www.spelman.edu/academics/majors-and-programs/computer-and-information-sciences](https://www.spelman.edu/academics/majors-and-programs/computer-and-information-sciences)

• Reboot Representation ($1,064,500)
  • 1-yr Summer Bridge for rising Sophomores
  • 1-yr Summer Bridge for incoming Freshman
  • Scholarship support for rising Sophomores
    • 20 scholarships/year for three years
  • Community outreach and engagement
  • Community building
Computer Science at Spelman

• Students
  • 2020-2021, 84 majors, not including students enrolled in the Dual Degree Engineering Program
  • Fall 2021, at least 50 Freshman enrolled in the CS Freshman Seminar

• Student Organizations
  • Spelbots: Research, Outreach, Training and Competition
  • Programming Team: Training, Competition
  • Girls Who Code: Outreach, Tutoring
  • CTF: Inaugural Competition, Spring 2022

• Faculty
  • Three tenured Faculty, including one Associate and two Full Professors
  • Three Assistant Professors, including one starting Fall 2022
  • Two Instructors
  • Open Positions: Recruiting Fall 2022
    • Three Tenure-Track, One Senior Instructor
Cybersecurity at Spelman

• **Current**
  - CIS 465 Networks and Security Elective course for CS majors
  - CIS 105 Security Module in general education course for non-STEM majors
  - New CTF competition Team
  - Spelman Cybersecurity Operations Training Center
    - Partnership with CIO, John Wilson
  - Security and Privacy Lab (Fall 2022)
Questions
Lightning Talk at 2022 CRA

1. Texas Southern University
2. Department of Computer Science
   - Research Portfolio
   - Collaborations and Partnerships

Wei Wayne Li
July 20, 2022
1. Texas Southern University (TSU)
   - Classified as a R2: Doctoral University
   - One of the largest HBCU in US
   - TSU Presidential plan to R1
1. Texas Southern University (TSU)
   - Classified as a R2: Doctoral University
   - One of the largest HBCU in US
   - TSU Presidential plan to R1
   - Student Enrollment Trends
1. Texas Southern University

- Classified as a **R2**: Doctoral University

![Diagram showing various departments and disciplines at Texas Southern University](image)
2. Department of Computer Science

- Both BS and MS Degree Programs in CS
2. Department of Computer Science

- Both BS and MS Degree Programs in CS
- A new Computational Sciences PhD Program (Pending)
- Average 160 BS and 20 MS annually
- 10 Regular Faculty ++
- BS Concentrations in
  - ML & Data Analytics
  - Networking
  - Computer Science
2. Department of Computer Science

- CS Research Portfolio
  - PI for NSF CREST Center
  - PI for NSF AGEP
  - PI for NSF PAWR
  - PIs for NSF, AF et al
  - Books in Springer
  - Papers IEEE&ACM
  - NSF Panelists
  - Conference organizer
  - Best Papers Awards
2. Department of Computer Science

- CS Collaboration and Partnership
  - Advanced Networks (6G and beyond)
  - Cybersecurity and Machine Learning
  - Data Science & ML
  - Cloud Computing
  - Faculty Collaboration
  - Student Internship
  - Academy & Industry
  - Rice/UH/PVAMU

Thanks!
Computer Science at the University of Hawaii at Hilo

Lightning Talk
Dr. Michael R. Peterson
CRA Conference at Snowbird
July 19-21, 2022
UH-Hilo Overview

• Located on Hawaii, the Big Island
• 31 Majors across 6 Colleges
• Total Enrollment:
  • 3243 (FA21)
  • 70.4% Full time Enrollment
  • 64.26% Female
  • 84.5% Undergraduate
  • 42.7% 6-Year graduation rate (1st time freshmen enrolled FA15)
  • 52% Pell-Eligible
• Tied #1 most ethnically-diverse campus in the United States per US News & World Report
• Designated Minority-Serving Institution
  • AANAPISI & ANNH
UH Hilo Computer Science Overview

- **Academic Programs**
  - B.S. in Computer Science
  - Computer Science Minor
  - Subject Certificates
    - Data Science
    - Visualization
    - Database Management

- **Enrollment**
  - 80-100 majors
  - ~15 BS degrees awarded/year

- **Current Faculty**
  - 4 tenured teaching+research faculty
  - 1 tenure-track research support faculty specialist
UHH CS Challenges & Opportunities

• Improving Native Hawaiian & Pacific Islander participation in CS major
  • 24.0% Native or Part Hawaiian CS majors (FA20)
  • 33.7% Total campus enrollment

• Improving participation of women in CS major
  • 26.3% Female (FA21)
  • 64.3% Total campus enrollment

• Improve Faculty numbers
  • Currently 3.5 teaching faculty; needs to be ~6
  • Sparse access to local qualified lecturers

• Shrinking departmental equipment/supplies budget
  • ~$5K/year, was as high as $22K/year in 2005

• Development of Interdisciplinary Data Science Major
UHH CS Faculty Research Interests

• Interdisciplinary Data Science Education
• Machine Learning
• Visualization
  • Natural Resource Management & Public Health Applications
  • Image Processing
• Human-in-the-loop Cybersecurity
• Opportunities for local collaboration
  • Astronomical Observatories
  • Earth Science
  • Marine Science & Biology
  • Rural Health
Questions?

Fun fact: the Kilauea caldera in Hawaii Volcanoes National Park is a prime location for the disposal of evil rings of power!