Overview

• Mission and Vision
• Background
• Comparative Advantage and Value
• Past Performance
• Contract research efforts
• Morehouse SoM Team — Combined Capabilities
**Mission**
We exist to:  
i) improve the health and well-being of individuals and communities;  
ii) increase the diversity of the health professional and scientific workforce; and  
iii) address primary health care through programs in education, research, and service

**Vision**

*Leading the creation and advancement of health equity.*

**Vision Imperatives**

- Translating Discovery into Health Equity
- Building Bridges Between Healthcare and Health
- Preparing Future Health Learners and Leaders
Morehouse SoM Programs at a Glance

80 clinicians, 140 residents

Clinical Affairs & Services

Bioinformatics, Health IT & Medical AI

Clinical Res & Ethics

Health Policy & Advocacy

Community Outreach & Engagement

Primary Care & Networks

Biotechnology & Healthcare Training

Basic Research

MSM Value

3 million patient visits
600,000 covered lives
~$120 million (annual revenue)

~$45 to $55 million in Annual Research Revenue from 140 grants & contracts

Translational Res of Diagnostics & Drugs

Tech Transfer & Commercialization

27 products in development and 200 patents

1) NIH-funded Core Facilities
2) Health Policy & Advocacy
3) Community & Patients served
4) Phase I/II testing
5) Health IT for disparities
6) Post-market surveillance

75 scientists

350 MD, 60 MPH, 30 PhD, and 10 MS students

80 clinicians, 140 residents

3 million patient visits
600,000 covered lives
~$120 million (annual revenue)
Contract Research & Service Capabilities

Information Technology (Health IT) Services
- Analysis, Testing, and Evaluation
- Health Sciences Technical Support
- *Data Analytics
- *Software & Services for Biomedical Research and Healthcare
- General IT & Telecom

Medical, Life Sciences, & Environmental Services
- Analytical Chemistry & Toxicology
- Proteomics & Bioengineering
- *Gene Profiling & Genomics
- *Bioinformatics

Healthcare & Social Services
- *Health, Medical, Social Science, and Demographic R&D
- Learning Disabilities and Sociology R&D
- *Health Policy Development & Advocacy
- *Public Health Informatics

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Past Performance – Research & Training Funding

Figure from April 2016

- FY16: $56,509,022 with a breakdown of $47,360,863 from continuing grants, $8,797,409 as new awards and competitive renewals representing $350,750.
- FY15: $44,597,475 with a breakdown of $30,445,880 from continuation grants, $11,051,595 as new awards and competitive renewals represent $3,100,000 of the total.

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## Past Performance – Intellectual Property Created

### Cumulative Totals

<table>
<thead>
<tr>
<th>Year</th>
<th>Remaining Issued Patents</th>
<th>Remaining Pending Patent</th>
<th>Licensed Patent Applications</th>
<th>Issued &amp; Pending Patents</th>
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<td>2016-pres</td>
<td></td>
<td>36</td>
<td>111</td>
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</tbody>
</table>

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Past Performance – Contracts with Large/Medium Businesses

• Health IT & Analytics Subcontract Services
  – **Awarded** DoT-IRS TIPSS4 exclusive HBCU/MI partner with Northrop Grumman (deal valued at $2m/yr for 10 yrs)
  – **Awarded** Navy Omnibus 3 exclusive HBCU/MI partner with General Dynamics (deal valued at $1m/yr for 5 yrs)
  – **Awarded** HHS CIO-SP3 LB exclusive HBCU/MI partner with SRA Intl
  – **Awarded** HHS CIO-SP3 SB exclusive HBCU/MI partner with PSI Intl
  – **Not Awarded** DHS Eagle III exclusive HBCU/MI partner with PSI Intl
  – **Not Awarded** CDC and NCI nutritional survey with Reveal Analytics

• Life Sciences Subcontract Services
  – **Awarded** nine SBIR/STTR subcontract awards

• Clinical & Social Subcontract Services
  – **Awarded** NIH OD OT2OD025284-01 “All of Us”
  – **Awarded** NIH Fogarty D43TW009340 “UJMT Global Consortium”
Past Performance — contracts with Small Businesses

Commercialization & Industry Engagement

• 12 Morehouse SoM technologies have been licensed to small to mid-size businesses that have raised over $80 million in private equity.
• Four of these companies were awarded $2.2 million in SBIR/STTR grant awards. Morehouse SoM-associated companies lead the state of Georgia in STTR funding in 2013 and 2014.
• $850,000 SBIR/STTR subcontracts awarded to Morehouse SoM
Detailed Summary of Commercialization Efforts

Nine Faculty startups and Three Partnerships (focus & track record)

- **4DGenome 13’ (Song)**: chromosome-specific haplotyping software and single cell isolation equipment ([$225,000 SBIR award](#)).
- **AccuHealth Technologies 12’ (Ofili)**: app for chronic disease care & clinical trials.
- **Akumba Diagnostics 13’ (Stiles)**: saliva-based tests for parasitic infections.
- **BrainGEN 13’ (Ford)**: neuregultin/chimeras to treat CNS injuries and stroke IVD.
- **Complexa 11’ (Chen)**: synthetic nitro fatty acid (CXA-10) to treat acute renal injury (completed Phase I trial after raising [$21 million](#) in funding). Enrolling subjects for Phase II clinical study.
- **Heat Biologics 08’ (Pattillo)**: clinical-stage company developing cell-based immunotherapy for the treatment of a wide range of cancers. Raised [$48 million](#) through IPO.
- **Haplomics 11’ (Lillard)**: rFVIII and therapies for African American hemophilia A patients ([$575,000 from two STTR and one SBIR awards](#)).
- **JYANT Technologies 10’ (Lillard, R Gonzalez, R Singh, S Singh)**: chemokine/chemokine receptor/obesity receptor antagonists and nanotechnologies for cancer, inflammatory diseases, and their diagnosis ([$1.2 million from one SBIR and three STTR awards](#)).
- **Orumil Pharma 15’ (Bond)**: mortalin/HSP65 peptide inhibitor to treat cancers, inflammatory disease, and viral infections.
- **Nutriglobal 12’ (Hibbert)**: medicinal foods for sickle cell anemia and cachexia.
- **R & Z, Inc. 14’ (Xiong/Simon) & Shenzhen Anshide Asset Co Ltd 16’**: peptide and small molecule ASIC1a inhibitors for CNS injuries associated with acidosis.

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TRANSLATIONAL TECHNOLOGIES
MOREHOUSE SCHOOL OF MEDICINE
## SBIR/STTR Awards to Date

<table>
<thead>
<tr>
<th>AWARD</th>
<th>PROJECT NAME</th>
<th>PI/FACULTY NAME(S)</th>
<th>TOTAL AWARD AMOUNT</th>
<th>PROJECTED AWARD TO MSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>4DGenome R43HG007621-01</td>
<td>Cost-effective and high-throughput chromosomal haplotyping</td>
<td>Song</td>
<td>$218,556</td>
<td>$65,567</td>
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<tr>
<td>Exscien Corporation R41NS086267-01A1</td>
<td>Enhancing mtDNA Repair During Stroke Reperfusion to Reduce Brain Damage</td>
<td>Wilson / Simon</td>
<td>$149,171</td>
<td>$59,668</td>
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<td>Haplomics R41MD008156-01A1</td>
<td>Evaluation of the Antigenicity of Restricted FVIII Haplotypes</td>
<td>Lillard</td>
<td>$184,545</td>
<td>$73,818</td>
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<td>Haplomics R41MD008809-01</td>
<td>Novel Pharmacogenomic Approach for Identifying T Cell Epitopes in Replacement FVIII Therapy</td>
<td>Lillard</td>
<td>$203,848</td>
<td>$81,539</td>
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<tr>
<td>Haplomics R43MD008660-01</td>
<td>H3 FVIII for Hemophilia A Patients at High Risk for Anti-Drug Antibodies</td>
<td>Lillard</td>
<td>$243,349</td>
<td>$97,340</td>
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<tr>
<td>JYANT Technologies R43DK096857-01A1</td>
<td>Treatment of Colitis and Ileitis using a Novel CXCR3 Biologic Antagonist</td>
<td>Lillard / R Singh</td>
<td>$317,247</td>
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<td>JYANT Technologies R41CA183399-01A1</td>
<td>Novel adjuvant therapy for triple negative breast cancer</td>
<td>Gonzalez / Lillard</td>
<td>$225,000</td>
<td>$90,000</td>
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<td>JYANT Technologies R41MD010320-01</td>
<td>Anti-CXCL13 mAb to mitigate prostate cancer health disparities</td>
<td>S Singh / Lillard</td>
<td>$315,320</td>
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<td>JYANT Technologies R41CA214080-01</td>
<td>Anti-CCL25 mAb to treat castration resistant prostate cancer</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>$2,172,356</strong></td>
<td><strong>$847,086</strong></td>
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Contract Research & Service Capabilities
Strategically Partnering to Add Depth and Breadth

Information Technology (Health IT) Services

Medical, Life Sciences, & Environmental Services

Healthcare & Social Services

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Working Example:

*Precision Medicine Initiative in Oncology*
IMPACT

Right Patient
Right Treatment
Right Time
African American Females 50+ years old Stage III breast cancer HER2+ Previously treated with Tamoxifen Eligible Patients for Clinical Trial Right Patient Right Treatment Right Time
Power of Integrating Big Data

- Ability to discover new biomarkers & drug targets
- Enhanced ability to match patient to right treatment or clinical trial
- Superior data set for clinical decision-making
- Improved ability to track & understand patient treatments, outcomes & costs

Clinical Data
Tissue
Molecular Data

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Thanks

For more information contact:
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Pioneering breakthroughs in Biomedical Research for nearly 70 years
Over 400 active grants and contracts (700+ active and closed annually)
Submits **30 contract applications per month**
Broad expertise in **toxicology, pharmacology, gene therapy**, on **clinical trials**
Development of novel models of infectious disease (**emerging pathogens**), **Alzheimer’s** disease, and cancer
Increasing focus on Pharmaceutical R&D, dosing paradigms, endpoints
Facilities, staff, processes needed to support all study aspects
Successfully **administer** commercial and **federal** grants and **contracts**

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• Founded in 1987
• Headquarters in Alexandria, VA
• Employs a mix of skill sets to include-engineers, scientists, programmers, technicians, logisticians and administrative personnel
• Working on Three Continents
• **High-end Engineering, Software Services & Logistics Support**
• SENTEL’s is a recognized provider of innovative products, imaginative solutions and quality services, with five core pillars of competency: Engineering Services, Mission Support, **Information Technology**, Logistics and **Business Support** Services
• ISO 9001:2008 Certification and CMMI Level II Certification

Email: jlillard@msm.edu
Translating protein drug or biomarker into final product
• Founded in 2010, biorepository and genomics company based in Atlanta
• State of the art automation and robotics with suite of genomics platforms
• Operates in 14,000 sq. ft. purpose built laboratories and offices
• More than 120,000 samples processed in 2014
• Performs to high regulatory standards
• **CLIA/CAP compliant Biorepository services**: biobanking to regulatory standards, DNA/RNA extraction, QC & quantitation services, genomics services, assay development services for customers, informatics, molecular cytogenomics testing
• Awarded **Veteran’s Affairs – MVP Contract**

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Background

• Established: May 3, 2004
• Certifications: SBA (A) / 8a, SWaM
• Dunns/Cage: 825333961
• 53FF5
• Headquarters: 7001 Loisdale Road, Suite C45, Springfield, VA 22150

• www.supremesolutionsinc.com

Services

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Neo-Biz Solutions, LLC

- Over 17 years of experience working in research administration.
- Expert knowledge of application guidelines for SBIR/STTR submissions.
- Submitted thousands of applications to numerous federal agencies.
- SBIR/STTR Pre and Post Award Management

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