Minority Health and Health Disparities Research at NIH

Prepared for GRC Annual Webinar Series at the American Association of State Colleges and Universities

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Section I: Brief Introduction of NIH
The NIH Funding Cycle

1. Applicant Initiates Research Idea
2. University Submits Application
   - Electronic Submission
     - GRANTS.GOV
3. National Institutes of Health
4. Assign to Institute and Study Section
   - NIH center for scientific review
5. Peer Review
   - 1st NIH Study Section 1946
   - Review of Scientific Merit
7. Institute
   - (24 with funding authority)
8. Advisory Council
   - Evaluate Relevance
9. Institute Director
   - Recommend Action
10. Institute Director
    - Takes Action
11. Allocation of Funds
12. Conducts Research
Research Training and Career Development

Fellowships & Career Awards

- Pre-doctoral Fellowships (NRSA -- F30, F31, T32)
- Post-doctoral Fellowships (NRSA -- F32, T32 -- NIH Intramural Program)
- K99-R00 Pathway to Independence Award
- K22 Career Transition Award
- K01 Mentored Research Scientist Development Award
- K08 Mentored Clinical Scientist Development Award
- K23 Mentored Patient-Oriented K Award
- K25 Mentored Quantitative K Award
- K02 Independent Scientist Award
- K24 Mid-career Award in Patient-Oriented Research

Research Grants

- R03 Small Grant
- R21 Exploratory-Developmental Grant
- R01 Research Project Grant
Funding Opportunities

- Ask colleagues/mentors in your scientific field
- Talk with your Office of Sponsored Research
- Visit NIH IC website (council meeting video, new concepts)
- Sign on listserv (e.g., NIMHD)
- Search on-line databases - https://www.grants.gov/
- Attend scientific meetings/workshops
- Consult NIH Program Staff
Definition of New Investigator:
- Not previously competed successfully as PD/PI for a significant NIH independent research award (R01)

Definition of Early Stage Investigator:
- Within 10 years of completing terminal research degree or within 10 years of completing medical residency (or the equivalent)

Applies only to R01 applications

New Investigators/Early Stage Investigators will be clustered together for review
NIH Extramural Team

- Before Applying: Program Officers [POs]

- After Submitting: Scientific Review Officers [SROs]

- After the Review Meeting: Program Officers, Grants Officers
## Grant Application Scoring System

<table>
<thead>
<tr>
<th>Score</th>
<th>Descriptor</th>
<th>Additional Guidance on Strengths/Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exceptional</td>
<td>Exceptionally strong with essentially no weaknesses</td>
</tr>
<tr>
<td>2</td>
<td>Outstanding</td>
<td>Extremely strong with negligible weaknesses</td>
</tr>
<tr>
<td>3</td>
<td>Excellent</td>
<td>Very strong with only some minor weaknesses</td>
</tr>
<tr>
<td>4</td>
<td>Very Good</td>
<td>Strong but with numerous minor weaknesses</td>
</tr>
<tr>
<td>5</td>
<td>Good</td>
<td>Strong but with at least one moderate weakness</td>
</tr>
<tr>
<td>6</td>
<td>Satisfactory</td>
<td>Some strengths but also some moderate weaknesses</td>
</tr>
<tr>
<td>7</td>
<td>Fair</td>
<td>Some strengths but with at least one major weakness</td>
</tr>
<tr>
<td>8</td>
<td>Marginal</td>
<td>A few strengths and a few major weaknesses</td>
</tr>
<tr>
<td>9</td>
<td>Poor</td>
<td>Very few strengths and numerous major weaknesses</td>
</tr>
</tbody>
</table>

| High Impact | | Moderate Impact | | Low Impact |
|--------------|----------------|----------------|-------------|
| Score       | Descriptor      | Score       | Descriptor  | Score       |
| 1           | Exceptional     | 4           | Very Good   | 7           |
| 2           | Outstanding     | 5           | Good        | 8           |
| 3           | Excellent       | 6           | Satisfactory| 9           |
How Funding Decisions are Made?

- Peer Review: scientific & technical merit
- Program Staff Recommendation: program priorities
- Institute National Advisory Council
- Director’s Decision: programmatic priorities and availability of funds
Resource: Office of Extramural Research

- Overview of the NIH Grants Process
  http://grants.nih.gov/grants/grants_process.htm
- NIH Guide for Grants and Contracts
  http://grants.nih.gov/grants/guide/
- Writing Your Application
  http://grants.nih.gov/grants/writing_application.htm
- Extramural Training Opportunities
  http://grants.nih.gov/training/extramural.htm
Resource: Center for Scientific Review

- CSR’s Early Career Reviewer Program: http://www.csr.nih.gov/ECR
- Applicant Webinars: http://www.csr.nih.gov/webinar
- CSR Study Section Information – Descriptions, Rosters, Meeting Dates, etc.: http://public.csr.nih.gov/StudySections
Section II: National Institute on Minority Health and Health Disparities
Eliseo J. Pérez-Stable, M.D.,
Director, NIMHD
Established as an Office under the NIH Director through DHHS Secretary Louis W. Sullivan, M.D. in 1990

Transitioned to a Center through legislation championed by Representative Louis Stokes (D-OH) in 2000

Patient Protection and Affordable Care Act contained language championed by Senator Ben Cardin (D-MD) to transition to an Institute in 2010

John Ruffin, Ph.D. led all the entities until his retirement in March 2014; Yvonne T. Maddox, Ph.D. became Acting Director

Eliseo J. Pérez-Stable, M.D., started September 1, 2015

FY 2016 budget is about $280 million with 3.2% increase
NIMHD Mission

NIMHD’s mission is to lead scientific research that advances understanding of minority health and health disparities

- Supports research in minority health, as defined by racial/ethnic groups in U.S. Census
- Supports research to understand the causes of and reduce health disparities in specific populations
- Supports the training of a diverse scientific workforce as part of broad NIH mandate
- Translates and disseminates research information
- Fosters innovative collaborations and partnerships
NIMHD Strategy to Advance the Science of Health Disparities

- Define minority health and health disparities to:
  - Scientifically investigate the health of racial/ethnic minority groups as defined by OMB US Census
  - Better design projects to reduce health disparities among traditionally disadvantaged groups

- Ensure that the best scientific strategies to address minority health and health disparities are part of all NIH Institutes and Centers research portfolio
Minority Populations

- African American or Black
- Asian
- American Indian or Alaska Native
- Native Hawaiian or other Pacific Islander
- Latino or Hispanic

Source: https://www.whitehouse.gov/omb/fedreg_1997standards
Health Disparity Populations

- Health disparity populations include:
  - Racial/ethnic minorities
  - Less privileged socio-economic status
  - Underserved rural residents, and/or
  - Sexual gender minorities

- Populations have poorer health outcomes attributed in part to social disadvantage, being subject to discrimination, and being underserved in health care.
Minority Health Research

- Minority Health Research focuses on health determinants that lead to specific outcomes within a minority group and in comparison to others.

- Race and ethnic minorities share a social disadvantage and/or are subject to discrimination as a common theme.
A health disparity is defined as a health difference that adversely affects disadvantaged populations, based on one or more of the health outcomes.

Health disparities research is devoted to:

- Advancing scientific knowledge about defining mechanisms of how health determinants affect disparities; and
- How this knowledge is translated into interventions to reduce disparities.
Questions for Health Disparities Research

- **How** does the difference in risk factors translate to a health disparity or not?
- **What** social determinants interact with the behavior, environment, and biology that results in a health disparity?
- **Why** do more aggressive biological forms of disease exist in some populations?
- **How and where** does one intervene?
- **What** defines better health outcomes among traditionally disadvantaged groups?
Health Disparity Outcomes

- Higher incidence and/or prevalence
- Burden of disease measured by *Disability-Adjusted Life Years* (DALYS)
- Premature and/or excessive *mortality* in areas where populations differ
- Poorer health-related quality of life and/or daily functioning using standardized measures
Mechanisms Leading to Health Disparities

- Individual Behaviors, Lifestyle, Beliefs, and Response to Stress
  - Racism, adverse conditions, food insecurity, witness to violence, immigration, LEP status

- Biological processes and Genetics
  - Earlier age of onset, gene variants, metabolic differences, susceptibility, faster progression, greater severity

- Physical Environment
  - Place, social system, neighborhood, infrastructure

- Cultural Environment
  - Family, social interactions, network, community cohesion

- Clinical Events and Health Care
  - Differential treatments, poor communication, adverse events to medications, falls, progression of disease, access, use/abuse of appropriate services end of life care
## Minority Health and Health Disparities Research Framework

### Fundamental Factors: Race/Ethnicity, Low Socioeconomic Status, Rural Residence

<table>
<thead>
<tr>
<th>Domains: Health Determinants</th>
<th>Levels of Influence</th>
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<tbody>
<tr>
<td><strong>Biological</strong></td>
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<tr>
<td>Vulnerability Mechanisms</td>
<td>Caregiver-Child Interaction, Family Microbiome</td>
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<tr>
<td><strong>Behavioral</strong></td>
<td></td>
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<tr>
<td>Health Behaviors</td>
<td>Family Function, School/Work Function</td>
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<tr>
<td>Coping Strategies</td>
<td></td>
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<tr>
<td>Limited English</td>
<td></td>
</tr>
<tr>
<td><strong>Physical Environment</strong></td>
<td></td>
</tr>
<tr>
<td>Personal Environment</td>
<td>Household School Work</td>
</tr>
<tr>
<td><strong>Sociocultural Environment</strong></td>
<td></td>
</tr>
<tr>
<td>Sociodemographic Cultural Identify Discrimination</td>
<td>Networks Family/Peer Discrimination</td>
</tr>
<tr>
<td><strong>Healthcare System</strong></td>
<td>Access Congruent w/Patient</td>
</tr>
<tr>
<td><strong>Health Outcomes</strong></td>
<td>Individual Health</td>
</tr>
</tbody>
</table>

Lifecourse
Research Supplements to Promote Diversity in Health-Related Research (Admin Supp)

PA-15-322

A. Individuals from racial and ethnic groups that have been shown by the National Science Foundation to be underrepresented in health-related sciences on a national basis (see data at http://www.nsf.gov/statistics

B. Individuals with disabilities, who are defined as those with a physical or mental impairment that substantially limits one or more major life activities, as described in the Americans with Disabilities Act of 1990, as amended (http://www.ada.gov

C. Individuals from disadvantaged backgrounds, defined as:

1. Individuals who come from a family with an annual income below established low-income thresholds. These thresholds are based on family size, published by the U.S. Bureau of the Census; adjusted annually for changes in the Consumer Price Index; and adjusted by the Secretary for use in all health professions programs. The Secretary periodically publishes these income levels at http://aspe.hhs.gov/poverty/index.shtml (http://aspe.hhs.gov/poverty/index.shtml).

2. Individuals who come from an educational environment such as that found in certain rural or inner-city environments that has demonstrably and directly inhibited the individual from obtaining the knowledge, skills, and abilities necessary to develop and participate in a research career.
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Connect with us on Facebook
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Follow us on Twitter
@NIMHD
Section III: Academic Research Enhancement Award

https://area.nih.gov
Academic Research Enhancement Award (Parent R15) (PA-16-200)

- Release Date: April 18, 2016
- Expiration Date: May 8, 2019
- R15 Participating Institutes and Centers: NCCIH, NCI, NEI, NHGRI, NHLBI, NIA, NIAAA, NIAID, NIAMS, NIBIB, NICHD, NIDA, NIDCD, NIDCR, NIDDK, NIEHS, NIGMS, NIMH, NIMHD, NINDS, NINR, NLM, ORIP
- Electronic Submission – SF424 (R&R) form through Grants.gov
- NIMHD Scientific/Research Contact: DeLoris L. Hunter, PhD, Telephone: 301-402-1366, Email: hunterd2@mail.nih.gov
Receipt Dates and Review and Funding Schedule

<table>
<thead>
<tr>
<th>Submission Dates*</th>
<th>Study Section Review</th>
<th>Advisory Council/Board Review</th>
<th>Estimated Award Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 25</td>
<td>June/July</td>
<td>August/September</td>
<td>September or December</td>
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<td></td>
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<tr>
<td>June 25</td>
<td>October/November</td>
<td>January/February</td>
<td>March</td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October 25</td>
<td>February/March</td>
<td>May/June</td>
<td>July</td>
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Research Objectives

- The AREA Program is implemented through the R15 funding mechanism. It was formed in 1985 to fulfill a unique Congressional mandate.

- Goals of the Program:
  - Support meritorious research
  - Expose undergraduate and graduate students to hands-on research in eligible environments
  - Strengthen the research environment of schools that have not been major recipients of NIH support

- It is distinct from other NIH initiatives that seek to increase diversity, enhance research in specific geographic areas, support individual or institutional training or career development, build research education infrastructure or capacity building.
Program Institutional Eligibility

- Only domestic accredited public or non-profit private institutions of higher education are eligible.
- The institution must grant baccalaureate or advanced degrees in the biomedical or behavioral sciences.
- The institution may not receive more than $6 million per year in NIH support in each of 4 of the last 7 years. Most NIH grants and cooperative agreements (all except C06, S10, and the G series) count towards this limit.
The PI must have a primary appointment at an AREA-eligible institution.

The PI may not be the PI of an active NIH research grant at the time of an AREA award.

- Instrumentation awards (S10), conference grants (R13), and institutional training grants (T32) are examples of grants that are not considered research grants.

The PI may not be awarded more than one AREA grant at a time.

Eligibility applies only to the PI and Multiple PIs, not to collaborators, consultants, or sub awardees.
The total budget for all years of the proposed project must be requested in Budget Period 1.

Applicants submitting an application with direct costs of $250,000 or less (total for all years, excluding consortium Facilities and Administrative [F&A] costs) must use the Modular Budget.

Applicants submitting an application with direct costs of $250,001 - $300,000 (total for all years, excluding consortium Facilities and Administrative [F&A] costs) must use the Research and Related (R&R) Budget form.

Effort: Since one 3-year budget period is completed, the PI might have 27 months effort in Year 01.
Types of Student Involvement

- AREA grants should provide meaningful, hands on, research experiences to undergraduate and/or graduate students.

- The AREA program is a research grant program, not a training or fellowship program. While students typically participate in non-research activities, the AREA grant should not include a training plan that might include coursework, attending seminars, or developing professional skills.

- The 12 page Research Strategy should describe how undergraduate and/or graduate students will be exposed to and supervised conducting hands-on research. It should also describe how students will participate in research activities.

- The Research Strategy should communicate how the project will stimulate students interest so that they consider a career in the biomedical or behavioral sciences.
• There are special instructions for preparing and submitting RPPRs for R15s.

• RPPRs for MYF awards are due annually on or before the anniversary of the budget/project period start date of the award. NIH will send an email notification to the PD/PI two months before the anniversary of the award requesting that the MYF RPPR be submitted.

• The reporting period for the RPPR is the year preceding the anniversary date of the RPPR. For example, if an award is made on 04/01/2013, the R15 RPPR is due on or before 04/01/2014, and should report on the activities performed under the award between 04/01/2013 and 03/31/2014.

• NIH staff will review the submitted RPPR, but will not routinely communicate back to the grantee unless additional information is needed.

• Undergraduate and graduate students who have performed work on an R15 for at least one person month must be reported on the RPPR and must have a Commons account, even if they were not paid by the R15.
Active R15 PARs:

- PAR-15-149 - Enhancing Developmental Biology Research at Academic Research Enhancement Award Eligible Institutions (R15)
- PAR-15-319 - Biomedical and Behavioral Research Innovations to Ensure Equity (BRITE) in Maternal and Child Health (R15)
Key Features

- Project period is limited to 3 years.
- Direct costs are limited to $300,000 over the entire project period.
- An R15 is renewable.
- Preliminary data are not required but may be provided.
- Collaborators may be from AREA-ineligible schools.
- Availability of research opportunities to students.
- The PI’s experience supervising students in research.
- Evidence the project can stimulate the interests of students to consider a career in biomedical/behavioral science.
- Availability of well-qualified students and evidence students have or are likely to pursue biomedical careers.
- For a Multiple PI structure, all PIs must be eligible.
NIH AREA-15
TIPS ON HOW TO WRITE A FUNDABLE PROPOSAL

Dr. Vanessa Duren-Winfield, PI
Clinical Associate Professor- Healthcare Management
&
Dr. Amanda A. Price, PI
Assistant Professor- Exercise Physiology

WINSTON-SALEM STATE UNIVERSITY
Winston-Salem State University Overview

Campus Statistics

- Public university founded in 1892 in Winston-Salem, NC; 125th year anniversary (2017)
- Historically Black University (HBCU) and University of North Carolina constituent institution
- 40 baccalaureate, 10 master’s degree programs, 2 doctoral programs (DNP, DPT)
- Diverse student population of more than 5,800 (fact book 2016)

Two Entities

- The College of Arts, Sciences, Business and Education
  - Comprised of 5 faculties, 19 academic departments, 8 research and teaching centers, the Diggs Gallery, and a number of interdisciplinary academic initiatives.
  - Broad liberal education that prepares students to meet the challenges of the 21st century.
- The School of Health Sciences (SOHS)
School of Health Sciences

- Embraces health equity in education, research and service
- Innovative learning experiences include a virtual hospital, mobile unit, free clinics run by students, and study abroad opportunities
- Students excel in their educational programs, on licensure examinations and in the workplace
- More than 1500 students
- The SOHS offers graduate and undergraduate programs in the following areas:
  - Clinical Laboratory Sciences (BS)
  - Exercise Physiology (BS)
  - Healthcare Management (BS and MHA)
  - Nursing (BSN, MSN, RN-BSN, FNP, DNP)
  - Occupational Therapy (MSOT)
  - Physical Therapy (DPT)
  - Rehabilitation Counseling (MS)

WINSTON-SALEM STATE UNIVERSITY
Healthcare Management Program
A Mind For Business. A Heart For Healthcare. A Degree For Both.

Programs of Study
- BS Healthcare Management
- MS Healthcare Administration

Faculty Research Funding
- Assessing CVD Risk Factors among AA college students through blood marker investigation
- Teen-Age Pregnancy Prevention, “Draw the line, respect the line”
- Assessing HIV Risks Behaviors Among HBCU College Students
- Health literacy and computer assisted instruction for colorectal cancer screening among AA enrolled at Community Care Clinic

Associations and Resources
- The Association of University Programs in Health Administration (AUPHA)
- American College of Healthcare Executives (ACHE)
- Medical Group Management Associates (MGMA)

WINSTON-SALEM STATE UNIVERSITY
Health Equity Focus

• **WSSU is committed to health equity** as evidenced in our new strategic plan 2016-2021 (https://www.wssu.edu стратегический план/)

• Commitment to addressing health disparities within the community, on campus and across the State via community-based collaborations and service projects that have been woven into the curriculum of our undergraduate and professional programs
  • Collaborate with community partners to seek solutions to health equity problems
  • Promote faculty research through community engagement

• **The Center of Excellence for the Elimination of Health Disparities (CEEHD)** is a venue to promote healthy equity in health care delivery and treatment through quality community-engaged research, dissemination of findings, and student education

WINSTON-SALEM STATE UNIVERSITY
R15 Grant Cycle Experience

**First Attempt** (Not Funded): R-15 Submitted February 2013

- Focused on obesity prevention using m-health technology

- **Critiques**
  - Top heavy with personnel and too much “in kind” effort
  - Scope not clearly written
  - Too many research aims
  - Overly ambitious
R15 Grant Cycle Experience

**Second Attempt:** Current R-15 Awarded on June 30, 2015

- **Improvements**
  - Significance and scope of problem clearly defined
  - Preliminary work to support proposal
  - Assembled smaller interdisciplinary research team
    - Investigators with specific expertise that aligned with project
  - Research aims clearly written, specific, and measurable
  - Realistic Goals and Timeline
  - Strong Innovation and Approach sections; stated clearly
Accessing CVD Risk Factors Among African American College Students Through Blood Marker Investigation
Research Outline

Scope of the Problem

• Burden of obesity — A significant risk factor for CVD in African Americans
• Model for Change — The case for CVD risk factor assessment and intervention

Previous pilot data/preliminary work

• 75% (>4,650) of the student population self-reported being overweight (February 2010)
• Health education and risk reduction intervention for HBCU college students (Student Health Coach project); expose students to research while creating a positive campus environment towards healthy lifestyle behaviors and CVD prevention (Duren-Winfield et al., 2011)
• CVD risk factor assessment was conducted at WSSU in 2009 and data (n=91; 80% AA) revealed 63% were either overweight or obese (Valentine, Duren-Winfield et al., 2012)
• Healthy lifestyle intervention for female college students designed and conducted by Dr. Price in 2012
Interdisciplinary Research Team

• Dr. Vanessa Duren-Winfield, PI
  • Healthcare Management; CVD Prevention and Health Disparities Research

• Dr. Amanda A. Price, PI
  • Exercise Physiology; Chronic Disease Prevention/Healthy Lifestyle Behavior Promotion in College Students; Anthropometric, Physiological, and Blood Marker Assessment Expertise

• Dr. Georgia McCauley
  • Clinical Laboratory Science; Nationally certified medical technologist/clinical laboratory scientist

• Dr. Kristina Roberson
  • Nursing; CVD Intervention Coordinator

• Research Triangle Institute (RTI)
  • Biostatistics and Data Management
Research Aims

• **AIM 1:** To assess CVD risk factors among AA college students by examining blood markers and anthropometric measurements.

• **AIM 2:** To pilot test a 15-week CVD risk prevention and intervention program administered as a 2-credit hour semester long CVD intervention course versus a comparison course among two cohorts (50 per cohort) of AA college students at WSSU.
Research Goals and Timeline

• 3-year project
  • Year 1 - Planning, Developing Curriculum, Getting Course Approved

• Year 2 - First Cohort
  • First implementation of intervention course
  • n=63 students (split between intervention and control)
  • Opportunity to revise and improve delivery for Cohort 2

• Year 3 - Second Cohort
  • Second implementation of intervention course
  • Currently enrolling students
Research Approach

Intervention

• A 15 week curriculum was developed using evidence-based CVD risk factor prevention information from CMS QIO Toolkit (http://www.qsource.org/wp-content/uploads/CardiacPopHealth_updated_11-16-12.pdf) that provides educational resources to reduce cardiac risk factors that include hypertension, smoking and high cholesterol and increase heart-healthy behaviors.

• Curriculum is a 3.0 credit hrs. GEN ED with quantitative literacy outcome entitled, EXS 1301 Lifestyle Behaviors for a Healthy Heart

• Curriculum aligned with Million Hearts™ Initiative.

• E-learning and Web-based Technology assures consistent current information is presented

• A content topic is presented during the twice weekly 1 hour and 15 minute sessions; relating to nutrition, physical activity, and CVD risk reduction, in addition to group-led physical activity

• Maximum number of students enrolled n=30
Research Approach

Control Group

• Participants in the control group are enrolled in an existing course *HED 3303, Personal Health Behaviors* at WSSU taught by the Health Education program

• Other than asking control participants to complete the baseline and follow-up assessments, no manipulation will be made to the existing course selected for comparison
Research Approach

Data Collection

• Developed apps with RTI- Rams Have HEART and WSSU Heart Check
• Data is collected using the Personal Health Intervention Tool (PHIT) developed by RTI (Kizakevich, 2012).
• Existing PHIT diaries are employed for daily recall of food and drink consumption with a focus on capturing fruit and vegetable consumption behaviors, and physical activity (Kizakevich, 2008; Kizakevich, 2011).
Photos on CVD Assessment Day:
Examining blood markers, anthropometric measurements including height, weight & waist circumference

Dr. Amanda Price performs BMI and other physical assessments.

“Fasting” finger blood stick sample drawn to measure glucose and cholesterol by senior CLS student.

Dr. Georgia McCauley, medical lab specialist provides oversight with standardized blood collection.

Research Assistant Paul La Chance (right) assures student and thanks him for participation in the study.

EXS students prepare to test students on Rockport One Mile walk. Ready. Set. Go!

We need more chairs, please! Standing room only.

Graduate nursing student consents students and perform anthropometric measurements.
Future Directions

The investigative team intends to develop a full-scale intervention using an R01 mechanism and, ultimately, a dissemination plan for other students at WSSU, and to potentially partner with other HBCUs to provide the full program.
Reflection

• Revise, revise, revise- Focus on Clarity
• Collect preliminary data, gain experience in proposed research area
• Collaborate

• Be Persistent!