



SIGMA PI

Sigma Pi Sigma Chapter Project Award Proposal

Project Proposal Title	Physics for the People: Community Science, Service, and Discovery
Name of School	North Carolina Agricultural and Technical State University
Sigma Pi Sigma Chapter Number	4819
Total Amount Requested	\$600.00

Abstract

NCAT's SPS chapter proposes *Physics for the People*, a three-part outreach initiative including a physics-themed community cleanup, a K-8 "Young Sparks" demo day, and a public science communication campaign to promote interest in physics across Greensboro. The project engages students and the general public through accessible, hands-on learning experiences.

Proposal Statement

Overview of Proposed Project

Brief Description

Physics for the People unites service, education, and public engagement to make physics accessible across Greensboro. The project includes:

1. **Physics in the Streets:** an environmental cleanup and public demo day in a local park or neighborhood.
2. **Young Sparks:** hands-on physics demonstrations and mentorship at Vandalia or Jackson Middle School.
3. **Physics for the Public Campaign:** weekly social media posts explaining physics discoveries, scientists, and everyday applications.

Goals of the Project

- Promote appreciation of physics in the general public.
- Increase curiosity about STEM among K-8 students.
- Strengthen community relationships through service.
- Provide SPS members with science communication and outreach experience.
- Inspire students underrepresented in physics to see STEM as accessible and exciting.

Intended Audience

- Greensboro community members participating in the cleanup (50-75).
- K-8 students and teachers at partner schools (60-120).
- General public, including non-STEM majors, via social media reach (estimated 2,000-4,000 impressions).
- SPS members serving as volunteers and mentors.

Background and Motivation

NCAT's SPS chapter has recently revitalized its engagement after prior years of inactivity. Building on successful elementary demonstrations and environmental service projects, this proposal expands outreach to new audiences and increases the chapter's visibility in Greensboro.

"Physics for the People" bridges gap between campus and community by showing how physics explains the world around us—from trash pickup tools and motion to sound, light, and energy.

The project aligns with NCAT's mission as an HBCU to empower underserved populations with accessible STEM experiences.

How Proposed Project Meets the Purpose of the Award

The Marsh W. White Award funds projects that **promote interest in physics among students and the general public**. *Physics for the People* does this by:

Reaching the General Public Directly

The street cleanup and demo day take physics out of the classroom and into everyday spaces—parks, sidewalks, neighborhoods—making scientific ideas approachable for those with little prior exposure.

Making Physics Fun and Engaging for Young Students

The Young Sparks mentorship day uses demos such as:

- Laser maze optics
- Snap circuits
- Inertia demonstrations
- Sound wave activities

These hands-on experiences spark excitement and curiosity among K-8 students, many from underrepresented backgrounds.

Increasing Visibility Through Science Communication

Weekly social media posts highlight:

- Recent physics discoveries
- Everyday physics applications
- Profiles of influential physicists (including Black, women, and minority scientists)

This ensures sustained public engagement beyond single events.

Strengthening SPS Student Leadership

Students lead every aspect of planning, communication, demonstrations, and event coordination, fulfilling the award’s emphasis on student initiative.

Connecting STEM to Community Values

Community service woven with physics shows how science applies to environmental responsibility, sustainability, and civic engagement.

For these reasons, *Physics for the People* is an ideal candidate for Marsh W. White support.

Plan for Carrying Out Proposed Project

Personnel

- **Project Lead: SPS Vice President**
- **School Outreach Coordinator: Manages Young Sparks communication**
- **Community Relations Officer: Coordinates cleanup permissions, park reservations, and publicity**
- **Demo Team Leads: Train volunteers on safe, clear demonstrations**
- **Media Lead: Runs the Physics for the Public campaign**

Progress is monitored weekly at SPS E-Board meetings.

Marketing

- **Flyers in residence halls and STEM buildings**
- **Instagram, Twitter (X), TikTok outreach**
- **Collaboration with NSBE, QISE, and the Environmental Science Club**
- **QR codes leading to event sign-ups**

SPS Member Participation

Expected participation:

- **12-15 SPS members**
- **5-10 additional volunteers from other College of Science & Technology orgs**
Members will serve as demo facilitators, cleanup leaders, social media content creators, and school mentors.

Project Timeline

Week 1-2: Preparation

- Reserve community space for cleanup
- Meet with school administrators
- Train volunteers on demos
- Purchase supplies
- Plan social media calendar

Week 3: Physics in the Streets

- Environmental cleanup + on-site physics demos
- Community engagement and sidewalk science

Week 4-6: Young Sparks Demo Day

- Classroom demonstrations
- Physics mentorship activities
- Teacher follow-up resources

Week 1-8: Physics for the Public Campaign

- Weekly posts on physics discoveries, icons, and applications
- Track engagement and visibility

Week 8: Evaluation & Report

- Gather surveys
- Record participant numbers
- Compile report for SPS National Office

Project Evaluation Plan

Evaluation will emphasize **reach, engagement, and growth in physics interest:**

Quantitative Measures

- Number of cleanup day participants
- Number of students reached during Young Sparks demos
- Social media analytics: shares, comments, impressions, saves
- Number of SPS volunteers participating

Qualitative Measures

- Short exit surveys for K-8 students and teachers (“What was the most exciting thing you learned today?”)
- Reflection forms for SPS volunteers on communication and teaching skills
- Community member comments gathered during cleanup day

Learning and Impact Indicators

- Increased curiosity (“I want to learn more about physics”)
- Recognition of physics in everyday life
- Teacher requests for repeat demos
- Online engagement on educational physics posts

Data will be compiled in a final report with photos, engagement metrics, and reflections to demonstrate the project's success.

Budget Justification

Total Requested: \$600

Physics in the Streets – \$200

- Trash bags, gloves, grabbers
- Portable demonstration supplies (bouncy balls, laser pointers, mirrors, tuning forks)
- Water and snacks for volunteers

These items make the event safe, accessible, and educational for community participants.

Young Sparks – \$250

- Snap circuits, diffraction glasses, magnets, optics kits
- Giveaways (science bookmarks, stickers)
- Printing classroom handouts

Hands-on materials help young students directly experience physics in an exciting, memorable way.

Social Media Campaign – \$100

- Graphic design tools (Canva Pro for 2–3 months)
- Printing QR-code posters for campus
- Photo/video capture materials

These resources ensure high-quality, consistent science communication that reaches the general public.

Miscellaneous – \$50

- Tape, markers, wipes, table covers, batteries

These allow smooth event execution.

All costs are essential for physics outreach, safety, and effective engagement. Additional support will come from SPS-owned demo kits and volunteer time.

All requested items directly contribute to the visibility, accessibility, and cultural resonance of Operation Phlogiston. Additional support will come from SPS-owned demo equipment, classroom projectors, and volunteer labor from SPS and Sigma Pi Sigma members. Together, these resources will enable a polished, high-impact program aligned with the goals of the Sigma Pi Sigma Chapter Project Award.