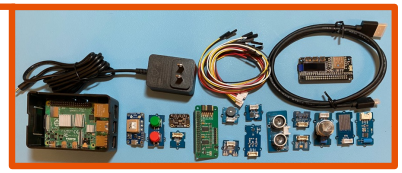
Revitalizing Rural - Equipping Rural Communities with Technology Literacy for Seizing Productivity

John O'Hara (PI), Julie Angle, Sabit Ekin, Matthew Rutherford, Brian Whitacre (co-PIs)
Thomas Hensley (Community Collaborator), Frederick High School students, Frederick, Oklahoma

PG, FY2021

Productivity **E**nhancing
Technology **E**xperience-Kit

PETE-KIT



PETE-Kit Contents
- Microprocessor: Raspberry Pi
- Auxiliary Hardware: push-buttons, LoRa radio, gas sensor, soil sensor, water sensor, ultrasonic, speaker, camera, IMU, light sensor, GPS, etc.

Problem - Lack of participation in the digital economy asymmetrically affects rural communities and is an important component of the digital divide. Smart/connected tech availability is only part of the solution. Our rural partners asked the critical question: "***What do we do with it?***"

Activities
- Tech Prep: PETE-Kit development, case study development
- Assessment surveys and in-person meetings
  - 11Dec21: Community event in Frederick, OK: ~40 people - to introduce research and inform stakeholders
  - Student technology awareness assessments conducted (tutorials)
  - 27Apr22: Ideation Meeting 1: 27 students - identifying community problems
  - 7Jul22: Deliver 8 case studies and 30 PETE-Kits to Frederick High School
  - 7Sep22: Ideation Meeting 2 – turning problems into opportunities

Intellectual Merit - This research will advance knowledge in effective methods of enhancing technology literacy in rural communities, particularly supporting greater productivity and higher quality of life.
- Determine existing extent of awareness of smart/connected tech
- Determine if hands-on tech literacy training can improve productivity using smart/connected tech
- Determine if PETE-Kits are a scalable approach to such training

Results to Date
- Students are eager to learn and solve community problems using smart tech
- Technology literacy must start with examples (***they don't know what they don't know***)
- Tech literacy with PETE-Kit is under evaluation but requires gentler entry
- Exposure to technology tutorials along with entrepreneurial training is a more potent learning combination than technology alone

Broader Impact
- Youth - scientific literacy improvements
- Rural communities - increasing economic competitiveness
- Rural communities - increased well-being and quality of life
- Industry/Govt - expanded pool of tech-literate people for employment (including **remote** work)

Project Sustainability
- Wide audience of stakeholders: Frederick, Hollis, Altus AFB, NDIA, OSU-Extension, OSU Center for Sovereign Nations
- Planning Grant results to inform other rural communities of PETE-Kit program
- Deployment envisioned to other rural communities and audiences (e.g. 4H, tech schools, community colleges).

Next Steps
- Constant improvement of PETE-Kit and training
- Economic/Entrepreneurial training (in person)
- **Final Event!** Students present their problem, their solution, and how the PETE-Kit training affected their productivity.
- Expected outcome is a wealth of objective data on technology literacy improvement and its impact on productivity.

Award ID#: 2125393