



AAPG

Research LAUNCHER Program

About You

First Name: Opoku Last name: Afriyie-Asante

Company/University: Sikkim Manipal University - Distance Education

Check which apply to you: Student Non Student Independent Researcher Professor Corporate Research Other

Primary phone: (+233) 247849715 Secondary phone: (+233) 207637786

Address: P. O. Box CT 1173 Cantonments

City: Accra State: Greater Accra Zip Code: 00233

Country: Ghana

Email: nanapee2@yahoo.com Fax: ()

Short Bio: (250 words or less)

In 2009, Opoku participated in a global movement dubbed "One Laptop per Child (OLPC) Africa". This project equipped selected students from around the world with 100 connected XO laptops, hardware, training, and financial support to expand learning and ICT in Africa. With such exposure, he has successfully increased economic opportunity and civic engagement by educating students of APTC Practice Primary and JHS (1,323 in number) in a remote town in the Ashanti Region of Ghana to succeed in a changing world as well as enhanced access to knowledge and learning outside the classrooms. The success of this project enabled him to collaborate with James Agbenorto (a Petroleum Geologist for the Ghana National Petroleum Corporation) to use Squeak, a program installed on the XO laptop, to stimulate curiosity and give students the ability to explore, experiment, and express while learning basics of mathematics and earth science.

In 2011 Opoku and James Agbenorto visited a Fabrication Laboratory in the Western Region of Ghana to discuss how OLPC could be integrated with the facility. Research on this integration process is the backbone for this application.

Project Description

1. Name of project OLPC Fablab Integration

2. Brief synopsis/areas of geosciences or engineering (50-75 words)

The goal of this project over its lifetime is to invent new possibilities to solve community based problems

The project seeks to prepare the youth for the economic, technological, environmental and societal challenges of the future

The project seeks to utilize Squeak to promote earth sciences subjects such as geography, geology and GIS/GPS whilst building awareness of environmental issues and geologic hazards related to processes like deep sea drilling

3. Bullet list of 5-7 main outcomes/goals.

(i) Solving community problems will improve livelihood (ii) It will become a hub for creating jobs thereby reducing unemployment

(iii) Improved educational standards (iv) Improved school attendance rates (v) Reduced poverty levels of communities

4. In two or three sentences, describe why your research is important. Please mention who will benefit from your work.

The outcome of the research would serve as an incubator for the youth to become agents of change necessary to accelerate sustainable development in communities. The research will focus on students in high schools and tertiary institutions

5. Timeline with milestones (12 month/18 month) 1st to 2nd month – Installation, setup and testing of equipment

3rd to 4th month – design of project curriculum and specification 5th to 6th month – workshop for interns and volunteers

7th to 10th month – training of students 11th to 12 month - showcase innovations, documentation: reports & abstracts

6. Funding amount needed to achieve first basic goals within 12 months. Please provide a brief summary overview of your budget. List costs of 5-10 main items. Funding amount to achieve first basic goals within 12 months is \$42,000

(i) 80 XO laptops-\$24,000 (ii) 3D Mill & Scanner-\$4000 (iii) Vinyl Cutter-\$2400 (iv) Oscilloscope-\$1500 (v) RF Analyzer-\$1500 (vi) Misc Supplies-\$1800 (vii) Tower Kit-\$1400 (viii) Function Generator-\$400 (ix) UV-VIS Spectrometer-\$400 (x) Multimeter-\$300

7. In the process of gaining background knowledge in the field of your proposed research, who did you find to be the top two or three researchers? What are the main concepts that are being explored? Please briefly describe.

Neil Gershenfeld: Enabling invention by providing access for individuals to tools for digital fabrication

Rita Freudenberg: Integrating Squeak into classrooms and curriculum

James Agbenorto: Preparing Future Engineers for Environmental Aspects of Deepwater Oil and Gas Exploration and Development

8. Please provide a photo of yourself and a photo related to your proposed project. It will be very helpful in publicizing your project and potentially securing funding.

9. Who will benefit? Students and Teachers in elementary, secondary and tertiary institutions, individuals, inventors

and entrepreneurs, start-up companies and local groups who wish to see their ideas or concepts become a reality

AAPG Research LAUNCHER supporters receive

The opportunity to work directly with you and receive reports, information, and findings, depending on the level of support.

The Deal

The researcher agrees to:

- ❖ Develop a brief public presentation on the research to be made available to AAPG
- ❖ Share an annotated bibliography and review of relevant published articles
- ❖ Present research findings on project at an AAPG Forum, GTW, or Research Symposium
- ❖ Write a detailed report on the results of your research to be made available to LAUNCHER supporters
- ❖ Write a extended abstract on the results of your research to be made available to AAPG

Thank you for submitting your research proposal to the AAPG Research LAUNCHER Program. Your proposal will be reviewed and upon acceptance you will be contacted by AAPG Education/Research. If your proposal is accepted, we will publicize your proposal and encourage funders to contact you directly. AAPG does not guarantee funds nor have any connection with the success or failure of the endeavor. The goal is to support scientific research in the petroleum geosciences and engineering and launch the next generation of geological advances.

Opoku Afriyie-Asante May 26, 2014

Research Candidate (print)

Date



Research Candidate (sign)

May 26, 2014

Date

AAPG Education/Research (print)

Date

AAPG Education/Research (sign)

Date

AAPG Education/Research

P.O. Box 979 | Tulsa, Oklahoma 74101, USA

Phone: 918-560-2650 | Fax: 918-560-2678

Email: educate@aapg.org

www.aapg.org