Bridging the Nanodivide; Nanoeducation Option

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Nanoscience is considered as the greatest scientific revolution taking place now with great potential applications that will surpass that of biotechnology and information technology combined. In the developed countries of North America, Western Europe and Japan, a lot is now being invested and continue to be invested on creating the awareness for the potentials of nanotechnology and nanoscience from kindergarten to tertiary institutions including universities. While this aggressive approach is taking place in the developed world, nothing concrete is happening in the developing world especially of Africa and the Caribbean. This should be a great concern for the countries of Western Europe, North America and Japan. These developed countries should be aware that their development is tied to the development in the less privileged countries of the world especially Africa and the Caribbean. The stability in developed countries is also dependent upon the stability in developing countries. A curious look will alert the developed countries on the need to fund nanoeducation in developing countries especially of Africa and the Caribbean as a form of investment that the benefits to developed nations are too great to be calculated as a means of bridging the nanodivide. The funding of nanoeducation in developing countries of Africa and the Caribbean by the developed countries should include:

1. Kindergarten-12 grades
2. Tertiary institutions including research institutes and universities
3. Nanoeducational collaboration between developed and developing countries of Africa and the Caribbean
4. Conferences, seminars, workshops, etc
5. Journal publications, books, etc

As a solution to bridging the nanodivide between developing and developed countries, Focus Nanotechnology Africa Inc.(FONAI)-US-EU-Asia-Pacific and Caribbean Initiative (USEACANI) was formed. USEACANI has a proposed budget of $10 billion for 10 years:

Nanoeducation mission: A well-educated citizenry, a skilled workforce, and supporting infrastructures of instrument, equipment, and facilities are very essential in the initiative. Nanoscale science, engineering and technology education can help to produce the next generations of researchers, innovators and teachers. Nanoeducation can provide the workforce of the future with math and science, and technological skills required to succeed with nanotechnology. Nanoeducation will insure a well-educated citizenry and manpower that are equipped to make good decisions in a technology driven society. Here, an adequate arrangement should be to educate people of all levels and every age. Equally important in supporting education and human resources development; it is

important to support physical infrastructure development. Examples are universities, government labs and other research institutions. Building of other physical infrastructures to support nanotechnology is very critical in accomplishing this goal. The cost of this can be more than a university or government lab or businesses can bear but federal funding can take care of such state-of-the-arts physical infrastructures based on needs, to be available to all researchers/investigators nationally.

What to do

Focused education of kindergarten to universities, and the public on nanoscience. Special emphasis should be placed on building the-state-of-the-arts labs geographically distributed in zones for the public use. Specifically, education and provision of infrastructures should include: Training of undergraduates, graduates and doctorate studies at universities and research labs through the broad research program.Via training agencies, award fellowship to students to participate in nanotechnology program to allow flexibility in choosing training programs especially those that cross disciplines.
Support the training of technicians as nanotechnology moves into product and services to meet the growing demand in industry. Bring nanoscience concept into education for students of all ages. This program will include: Research experience for teachers and students, nanoscience education programs supporting nanotechnology courses, free lectures for all people at specific institutions or government labs on a periodic basis, support the development of science centers and museum exhibits, video productions, and other approaches to learning outside of formal educational institutions.

Physical capacity building

Establish geographically distributed user facilities to provide all researchers access to advanced instrumentations for fabrication, characterization, modeling and stimulation of nanoscale and nanostructures devices, materials, systems and processes. The infrastructures will include: Those by government ministries like nanoscale science and research centers available to every user based on merit. Nanotechnology users network to provide instrumentations for characterizations, properties and expertise and the network for computational nanotechnology consisting of groups of universities that together support computational research, as well as education, modeling and stimulation tools that can be accessed via the web. Support additional facilities within the federal laboratory enterprise dedicated to nanotechnology R & D.

Approach

The initiative will create an environment that allows for multi-disciplinary education, teacher training and development of curricula and instructional materials. The initiative will further be involved in the training for advanced R&D in nanotechnology and support nanotechnology industrial needs. The component of this will involve:Taking advantage of existing programs and forming new partnerships to bring students and teachers into the research lab. Bringing nanotechnology researchers together with teachers and education researchers will provide mutual benefits by strengthening educational programs and providing fresh research perceptive.The creation of first rate university facilities for learning and teaching of nanoscience with federal funding as with any full-fledged university. Such a university will train scientists-teachers for the secondary schools and

undergraduate levels who can introduce nanoscience and nanoengineering concepts into schools and undergraduate classrooms. It will serve as a clearinghouse for curricula materials, instructional methods and activities in nanotechnology education. Promoting partnerships between industry, education and training to ensure that nanotechnology firms have access to highly skilled workforce they need, and workers have access to the training needed for careers in the industry.Towards this effort, FONAI publishes Journal Nanotechnology Progress International (JONPI), the #1 nano journal in scope and coverage. FONAI has daily global news along with other publications. An online workshop was held on June 21-26, 2009 and another one being planned to be held pn the ground for June 20-25, 2010. Please join us to prevent instability in the world by bridging the nanodivide:

Donation Request! To continue this focused nano educational campaign especially to the less privileged developing nations, we need immediately
$1 million emergency relief fund
for Nanoscience and Nanotechnology education through workshops, seminars, lectures, conferences, publications, etc especially in Africa, Caribbean, Latin America and Asia-Pacific.

Donate now please by visiting http://www.Fonai.org .

Nothing is too small or too big,

Individuals, academia, policy makers (government institutions), private sector, not-for-profits, etc

Please give your kind donation

Reference
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