

## IEEE Long Island Section Entrepreneurs Network

Robert Muratore, an IEEE Long Island Section member and a member of our Entrepreneurs Network, has conceived a very interesting proposal. Robert has presented his proposal at a few venues. If you can help, please do. If interested in our Entrepreneurs Network, contact us at [enet@ieee.li](mailto:enet@ieee.li)

### Regional Open Access Laboratory:

#### A pre-burner to fire up technology and business incubators

By Robert Muratore, Ph.D. - Feb. 6, 2012

The problem - Many high technology workers and inventors are unable to obtain adequate support from their institutions or are no longer associated with institutions. The economic slowdown has caused a decrease in research opportunities for trained scientists.

- Start-up funding available to new university faculty members has been frozen.
- There is an increased demand (apparently a "feeding frenzy") for research grants and grant money is less plentiful now than in past decades. Grant money flows preferentially towards large institutions; many of the so-called small business initiation research (SBIR) grants go to "small business units" within Fortune 500 corporations.
- From the perspective of an individual scientist, the chance of obtaining research funding is too slight and getting slimmer.
- Industry is redirecting resources toward extremely short-term goals as businesses struggle for solvency.

With the advanced state of technology, basement tinkering does not produce adequate results; a substantial infrastructure of equipment is required. Therefore, the displaced scientists find themselves unable to continue research and development work. Without research opportunities, many scientists are finding it difficult to pursue their ideas and to maintain the level of their expertise. A stalled scientific career is difficult to restart, and thus the United States is facing a potentially major loss of its brain trust. Every economic expansion has been directly tied to new discoveries; the marginalization of American scientists might be the direst long-term consequence of the recession.

A solution - A facility to serve the needs of "displaced" scientists. A regional open access laboratory (ROAL, pronounced "role") will act as a library. Instead of information, ROAL will provide bench space and basic laboratory equipment and supplies. Allocation will be non-competitive, once minimum requirements have been met (e.g., advanced degree in science, or some small number of peer-reviewed publications), hence the laboratory will be open access. (Attempts to score and rank research proposals will make ROAL just another typical funding mechanism and disable ROAL from serving its clientele.) No funds will be provided to visiting scientists; without travel funds, each ROAL will serve a local region.

ROAL will be disinterested in intellectual property developed therein. Live vertebrate experiments will be disallowed to reduce the need for trained staff veterinarians, although vertebrate tissue samples will be permitted to be brought in and stored. Specialized equipment would be beyond the scope of the laboratory; experimenters will be required to bring their own exotic, special needs, equipment. Examples of provided equipment include: signal generation and signal monitoring equipment, such as waveform generators, amplifiers, and oscilloscopes, computer interfaces, such as digital to analog converters and analog to digital converters (digitizers), culture ovens, isolation hoods, autoclaves, high powered microscopes, such as electron, phase-contrast, and fluorescence microscopes, DNA tools, such as polymerase chain reaction (PCR) thermal cyclers, optical tools, such as lasers and optical tables, shake tables, water baths, and precision balances, small scale machining equipment, and storage facilities, such as freezers and chemical cabinets.

Equipment could be obtained from local and US-based manufacturers or international manufacturers with local investments when possible on a donation or loan basis. For example, Nikon has North American headquarters on Long Island and manufactures high end optical microscopes.

Bench time will be provided in blocks. Allocation schemes to be explored include first-come-first-served, auction of points provided to qualifying scientists (perhaps collaborating scientists can pool their points), and other schemes not tied to proposal review. For example, time in the laboratory would be allotted to any interested people on the following basis: demonstration of competence (academic credentials, Professional Engineer, or simple tests), time share - first come first served signup for a bench slot, X hours weekly for Y months, short-term loans of the portable equipment to coincide with bench time, certain equipment, such as the microscopes, would be available on a short time basis.

Capital funding will be needed to provide a facility suitable for several concurrent scientists. Staffing could be provided on a volunteer basis, requesting retired scientists, established researchers, and engineers to volunteer some time, maybe a couple of hours each month. Sources of funding include NSF, general-purpose private foundations, and local organizations. Operating expenses could be covered in part with a membership model, or a monthly access fee.

It would not be desirable to provide the services on a competitive basis, as that would be just another drop in the elusive ocean of grant money. The Regional Open Access Laboratory would function as a lending library of basic technological equipment (although the equipment would remain onsite). The Regional Open Access Laboratory would keep researchers productive during the economic ebb. The results of pilot studies carried out therein would be valuable in obtaining venture capital funds, allowing the researchers to move into the technology and business incubation processes.