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Office of the Assistant General Counsel
for Technology Transfer and Intellectual Property
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
Attn: Technology Transfer Questions

Subject: Questions Concerning Technology Transfer Practices at DOE Laboratories (Federal Register/Vol. 73, No. 229/ November 26, 2008 /Notices)

Dear Mr. Gottlieb,

Having the spent the last four decades commercializing technologies from universities and most recently from DOE laboratories, I was encouraged by your posting of questions in the Federal Register. Given the significant potential of technologies and capabilities within the DOE system, I applaud DOE's efforts to better understand existing roadblocks and seek advice as to how to improve mechanisms and thereby move innovations from laboratories into the commercial marketplace, where innovation ultimately benefits the public.

Over the past 5 years, our firm has had a dedicated effort to find, fund and ultimately commercialize technologies resident in the DOE laboratories. We have developed strategies and opportunities for linking laboratory technologies and expertise with the marketplace. It has been a long, vexing journey across tough terrain littered with the hulks of abandoned ideas, many of them good ideas. There seem to be many obstacles lying between the laboratories and the marketplace, including the development and securing of intellectual property, adequate capital sources, and dedicated entrepreneurial efforts of experienced executives. To get an innovation to market, one must do more than just develop a technology that works. One must match technical development to an appropriately synchronized, increasingly sophisticated assessment of both the market and the channels through which the product may reach it. Relying on sheer technical merit will ultimately lead to failure.

Many of the discoveries within the DOE system require extensive development before products and services can be made available to the public. As such, innovative contracting mechanisms and commercially-acceptable terms are required technology transfer tools to translate basic research and discovery into products. A licensee or sponsor company needs to be able to work closely with the laboratory to secure the information and materials that are important for further product development and it also requires adequate, broad intellectual property protection to enhance its global competitive position. It is the basic mission of the laboratories to generate and

share knowledge and to be of ultimate service to society, and therefore the role of technology transfer to enable transfer of the knowledge to a commercial enterprise to create new products and local jobs. In many cases, technology transfer can generate significant income for the institution and researchers if successful, which will serve to stimulate further invention, increase awareness of activities within a laboratory and perhaps offset future discretionary funding needs.

Specifically in response to Question 1, I would encourage DOE to consider a new, streamlined contracting mechanism that would improve commercial engagement, expanding the number of privately-funded projects within the laboratories and thereby lowering overhead rates and enabling the DOE laboratories to be more impactful which will in turn increase commercial engagement. While DOE does not seek to compete with industry, the significant long-term investment in the assets of the federal system warrant participation in and utilization by the public and private sources thereby improving the quality of work and relevance of technologies developed. Active private sector engagement is critical to the realization of the potential DOE programs. In particular, DOE should consider providing more flexible contracting methods and clauses which can be tailored to a specific sponsor's requirements, which may require the lab contractor to accept performance risk for contracts. Could DOE consider a fixed pricing format to projects with perhaps milestone payments upon achievement of key tasks mutually agreed upon by the parties in advance? I would encourage DOE to eliminate the advance payment requirement under its contracting mechanisms as this creates an unnecessary burden on the sponsor and imperfect incentive for the contractor and PI to deliver outcomes on a timely and efficient basis.

In addressing Question 2, I recommend DOE review and consider university outreach programs that provide visibility into laboratory programs and capabilities. While much is historically known about the Manhattan Project, very little is known about the scope and scale of the work currently conducted in the laboratory system. Private investors, industrial partners and entrepreneurs are likely willing to engage if better transparency and outreach is conducted by DOE or government contractors. I would also encourage DOE to consider best practice approaches to enabling entrepreneurial leave for researchers. To enable successful commercialization of nascent technologies, a lead inventor is often required to be engaged with the commercial entity for a period of time to transfer technology-specific know how to the broader emerging enterprise. With a user-friendly mechanism to allow researchers to support commercialization efforts and yet return to the laboratory system over time, I believe DOE will be able to attract commercially oriented thought leaders, expanding its intellectual horsepower to promote scientific excellence and innovation. Additionally, such a program would improve DOE's ability to attract, develop and mature leaders that will maintain and improve U.S competitiveness, with the national laboratories as the nucleus.

Another recommendation related to industry best practices includes the ability of a sponsor to option or license yet-to-be-developed intellectually property which it funds. Many universities employ "right of first refusal" to licensees, particularly in instances where there is ongoing development and often private funding to support these efforts. This provides security to the sponsor that it will not be "held ransom" to future inventions or key licensing terms should a program be successful. Some universities have actually granted the licensee a period of time in which any IP developed by a particular inventor that is directly tied to that licensee's field of use, is rolled into the existing license typically with a previously negotiated milestone payment. The

ability to continue to work with the laboratories without the risk of "success" – i.e. a new invention is enabled but the unknown "cost" to or control by the licensee is not yet defined – would greatly improve engagement with commercial partners providing an ability to fund new programs and expertise within the laboratories.

As U.S. competitiveness is cited in Question 3, one should point out that many private investors, small and large companies, grow but may always be subject to acquisition or roll-up of its technology. Given the increasingly global marketplace and the costs of conducting business, often technologies and products best serve the American public when manufactured, sold or distributed by large companies. In many sectors of our economy, including energy, life sciences and chemicals, some of the largest, most well established and well respected companies are located outside the United States. These companies value the U.S. marketplace and create jobs and build intellectual capital here. DOE should consider more flexible terms with regards to transfer or assignment of intellectual property to foreign companies with the exception of cases that are of national interest. It can no longer be assumed that a foreign company does not create U.S. jobs and improve our national talent pool.

In response to your final Question 6, another mechanism that DOE should consider on a system-wide basis would be one of a technology maturation mechanism. We are aware of several efforts, such as the EERE Technology Commercialization Fund or Battelle Memorial Institute's Maturation Funding program, that work to bring industry partners together with the laboratories to identify technologies that may not yet be proven to market standards, but show promise for addressing the nation's critical needs. These maturation programs allow a shared-risk approach recognizing the need to demonstrate a technology will work with competitive efficiency. Recognition of this need for validation greatly improves engagement by commercial entities in that they can "test run" a technology before licensing and making further, often substantial investment. It is our fund's own experience that maturation funding tied to industry-vetted milestones improves the transferability of federal technologies which in turn enhance the socioeconomic well-being of the nation.

Technology transfer is a vehicle through which the fruits of DOE funded research are transferred to industry to be ultimately developed into evolutionary or revolutionary products. In a dynamic and multinational marketplace, if the United States is to remain a world leader in technological and scientific innovation, both the public and private sectors must work together to foster rapid development and commercialization of useful products to benefit the American public, stimulate the economy, and enhance our international competitiveness, while at the same time protecting taxpayers' investment and safeguarding the principles of scientific integrity and academic freedom.

As your questions clearly demonstrate, DOE has an interest in exploring innovative approaches to technology transfer activities, with the (presumed) ultimate goal of reducing the time, cost and risk of R&D projects conducted in and transferred from the laboratories. As society's investment in research comes full circle, basic discoveries brought forward will improve the prosperity and health of our nation. We support DOE's efforts to reduce barriers to commercialization of these transformational discoveries that our nation requires, particularly given its current energy-related challenges.

As former Secretary Bodman stated, "our energy and climate challenges are our shared responsibility, and our shared opportunity. I'm optimistic that we will embrace them, but doing so will continue to demand sustained action from us all." I share his optimism and commit to our fund's role for the future success of these efforts.

Sincerely,

Morton Collins/MB

Morton Collins

Managing General Partner
Battelle Ventures, LP