Letter of Introduction and Proposal

Martin Joseph Dudziak, PhD
The TETRAD Institutes

Good morning,

I am writing to you with a unique and simple proposal. This will bring certain and definite benefits to your institution and professional community, with clear benefit paths for the larger society. It does not have a steep cost to begin and I am confident of what I and a very modest group of students, colleagues, and associates can accomplish. My objective with this letter is to generate your interest and to gain your support for this. There is already interest and support from other organizations and people. I believe the timing is right now, this year.

My personal background has been as a scientist and my own work has spanned from theoretical domains within physics and mathematics to the life sciences including applications of theory to biomedical and environmental research. I am American by birth and formal education, and I have worked extensively in Europe and Asia including also within Russia and the Far East as well as western Europe. The proposal that I put forth to you is multidisciplinary and multi-valued, growing out of a nexus of work in quantum physics and information, complexity science and their applications. The integration of "theory with praxis" is important, for several reasons that I can explain with further communication. Along with many other researchers, I share in the belief of being (collectively, with others) on the cusp of a true and realistic "renaissance" in multiple disciplines. This has implications for research in quantum computing and other related technologies, and also, from my work and perspective now, for specific applications in several areas of energy, environment, climate and weather management, robotics and synthetic (AI) intelligent systems.

What I present to you now grows out of decades of work in academic and corporate research settings. Earlier (2013-2014) several initiatives to create a new type of "institute for innovative study" had begun but these were not possible to continue and complete due to principally timing and financial reasons. Now I and others within my team see definite prospects for a new and positive future. I am ready to resume with renewed vigor and I believe that I have prepared the right components.

I have set up two structures for moving forward. One is *The TETRAD Institutes* with four closely-coupled components. These include basic theory (fundamental physics), complex systems, cybernetics and control, and practical education in these domains. The other structure is a company, focused upon new research and development in complex intelligent systems, with applications explored and underway for multiple areas of social and economic importance, including agriculture, energy, space, biomedicine. This diversity is due to and supported by the mathematics and physics, theoretical foundations, and also specific collaborators. My goal is to establish activities now, beginning first with myself, in a way that rapidly and smoothly generates collaboration and support from other partners in both academia and industry. The basis for my confidence is in many meetings and discussions during the past few years. Now I simply wish to have a formal base with the right institution.

This initiative is simple. I want to set up what has become now *The TETRAD Institutes*, and through this, first bring forward the *TETRAD Seminars*, a four-fold series of specialized lectures, seminars and workshops on critical scientific and technical topics. In addition there will be the opportunity to teach and lecture directly, and to commence publications and applications that have entrepreneurial and commercial value. I want to do this in a manner that fits within the interdisciplinary and international scientific programs of your institution.

The key foundational research themes involve complexity theory, random and chaotic systems, turbulence, cybernetics and control, synthetic (artificial) intelligence and machine learning. There are specific clear applications within quantum and nuclear physics including fusion, condensed matter and composite materials, but also for the understanding of complex processes in climate, environment, and also throughout the life sciences, especially in neuroscience. All of this draws together prior work and current active people with relationships that can be grown and extended now. There is a new approach developed within all of this for quantum computing and for real-world applications including control and intelligence of robots for diverse uses in Space and on Earth. The diversity of real-world applications is solid and demonstrable. The outcomes and payoffs benefit students, other faculty, the general public, and certain the entrepreneurial business and economic sectors.

This is what I have as a specific set of objectives:

Appointment to the Faculty in the capacity of a special type of professorship, which may be in one particular department or spanning multiple departments.

Provisions and opportunities for giving lectures and seminars to students and for inviting other guest experts from different countries. These may be on theoretical and applied topics, and they will be of interest to both post-graduate and undergraduate students.

Official and administrative support in all aspects of obtaining a variety of grants, contracts, and other forms of support from public, academic, corporate and private sources, most of which are in EU, UK, USA, CA, South Korea and Japan.

Support for establishing a center (institute) that comprises what is summarized at the websites provided below. This does not require investments or commitments by any institution for facilities, laboratories, equipment, or a large staff – all of such growth will come through external funds that already stand available and accessible. Furthermore, what this will be is a nexus, a catalyst, for aiding other departments, centers, and groups that are already in existence. It will also be an aid for developing new employment opportunities for students and others.

What I am proposing is a “Win-Win” proposition that is as simple to start as bringing me onboard as a visiting professor.

Sincerely,

Martin Joseph Dudziak, PhD

martinjoseph@tdyn.org martin.dudziak@gmail.com

+1 (231) 492-8301 +1 (505) 926-1399

Websites:

The TETRAD Institutes:
Four components: www.primus.tdyn.org www.mirnova.org www.astra.tdyn.org www.oasis.tdyn.org

The company, which can be relocated and shared: www.iri.tdyn.org

My personal background (CV, bio, some selected publications): www.tdyn.org/martindudziak