



Biographical Sketch of James C. Turner Jr.

Professor of Mathematics – Virginia Tech

President and CEO – i³ Tech LLC

James C. Turner Jr. received his Ph.D. from Carnegie Mellon University in 1985. He is currently a full professor of mathematics at Virginia Tech, while serving as the President and CEO of i³ Tech, LLC. During the first two decades of his career he has held faculty and research positions at various universities, including Ohio State University, Hampton University and Arizona State University. Additionally, Turner has held several administrative positions, e.g., two departmental chairmanships and the (interim) Associate Provost of the Graduate School at Virginia Tech. He was the founding director of the *University Consortium for Research and Development*, a joint venture with selected universities from the Big Ten and the Historically Black Colleges and Universities (HBCU). His supervisors formed a rotating group of presidents from the participating institutions. *Institutions:* Big Ten – Ohio State University, Indiana University, University of Wisconsin, University of Minnesota, Purdue University, Iowa State University; HBCUs – Florida A&M University, Central State University, Xavier University, North Carolina A&T University, Morgan State University, Howard University, Hampton University.

As an illustration of his research, he developed a mathematical formulation and computational techniques for improving the most dominant crystal growth process in the microelectronics industry, namely the Czochralski manufacturing process. His award winning participation in this project demonstrates his experience in developing, funding, and organizing an international, multi-institutional, cross-disciplinary research endeavor. Dr. Turner worked with a team of scientists who developed an innovative, more-efficient, and less costly process for growing high-quality Indium Phosphide (InP) semiconductor crystals. These crystals form the basis for fabricating wafers used in creating optoelectronics and radio frequency electronics.

More than two decades of experience on the African continent has provided Turner with a unique opportunity for formulating strong partnerships with individuals addressing various issues in research, education, and economic development. Over the years, the ambitious aims of these partnerships have been in general: to raise the spirit of cooperation among African and American universities, research institutes, and the private sector; and to build strong research collaborative networks that serve as powerful engines of economic development and cultural exchange. More specifically, a focus has been placed in two primary areas: the development of state-of-the-art eLearning and eScience environments with the dual purpose of educating and training a scientific and engineering workforce for tomorrow; and developing technologies of fundamental importance to scientific infrastructural needs of developing countries in Africa.

Turner believes that there should be a symbiotic relationship between education and economic development. Moreover, he believes that the role of federal agencies is to provide financial support to initialize and motivate projects in areas of need. Once these projects have moved from early stage development, he then believes that the role of the private sector is to step in and sustain successful programs. This has motivated Turner to launch a commercial effort that will be used to provide sustainability to educational programs of interest to existing partners.