



**Fall Seminar Series**  
**3:30pm - 4:30pm, Wednesday, October 3, 2012**  
**Johnston Hall, Room 338**



**Energy, Energy Storage, and Organic Synthesis:  
A Unique Scientific Interdisciplinary Approach**

by

**David Caver**

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Energy storage has been an area of electricity and electronics that has needed improvement for many years. Increasing both energy density and simultaneously decreasing cost per unit energy stored has been a pressing goal of our nation's scientific talent. Stepping back from traditional lines of thought in this area and readdressing fundamental approaches to the design of energy generators and energy storage components allowed the incorporation of the newest advancements from other scientific fields to direct the design of such devices. In the case of our research with traditional electrostatic capacitors, we have incorporated discovery of certain formulations of organic compounds that are able to maintain their permittivity when exposed to very high e-fields. Discoveries of this type are derived from the fundamental teachings that are part of the field of Organic Synthesis, a field that has rarely been applied to electrical component manufacture. These advancements have led to substantially greater energy densities for electrical storage and substantially reduced costs for these electrical components. Spin-off projects and products derived from this project offer many opportunities for advancement in this and other fields of endeavor.

\*Dr. Carver is the Company founder and inventor of the polymer technology to be commercialized by Carver Scientific. He serves as the Chief Scientist and leads all company research & development. David also serves as a director of the Company.

\*Dr. Carver received his Ph.D. in Chemistry from Virginia Tech in 1979 and was a National Institute of Health Postdoctoral Fellow at Colorado State University (1979 to 1981). He is the holder of over 18 patents in the areas of advanced energy technologies, organic synthesis, and analytical instrumentation.

\*Previously he founded successful corporations, which under his direction, invented, developed, and commercialized a diverse and complex set of core technologies. Companies and successfully commercialized technologies with similar risks and complexity include:

- ChiraTech - the predecessor company to Linear Instruments. Products invented and commercialized now account for the world's largest selling line of UV detectors in the HPLC markets.
- MediMolecules, Inc. - the predecessor corporation to NaPro Biotherapeutics, was founded by Dr. Carver. He was the President of the joint venture (NaPro) through the successful early development stages of the company. Dr. Carver is the inventor and patent holder for many of the most significant enabling technologies responsible for Taxol (Paclitaxel), possibly the most commercially successful anti-cancer drug in the world.