

Technology Review, Advisory and Innovation Committee (TRAC) Members

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Member Short Bio's

Jason Ball

In his position, Ball provide visions, leadership, strategic planning, and coordination of information technology, media, networking and telecommunications throughout the University's multi-campus environment. He supports existing operations within Information Resource Management (IRM), develops strong managers and staff to meet strategic goals and improve customer service, participates fully with other campus leaders in advancing the University's mission, and develops and manages long-term relationships with technology vendors and partners. Ball also works with the University's chief financial officer to ensure seamless integration of administrative and emergency information systems.

Som Bhattacharya, Ph.D.

Research interests:

- E-commerce
- ERP Systems
- XBRL
- IT Outsourcing
- Information Technology
- Investments
- Cost Accounting

Massimo Caputi, Ph.D.

The Caputi lab studies the mechanisms that regulate mRNA processing and gene expression in viral and cellular substrates. Cancer and genetic disease are often caused by the breakdown of these complex mechanisms. A clear understanding of messenger RNA biogenesis will be an invaluable help in our quest for fighting human disease. The mechanisms that regulate the life of a messenger RNA from transcription to splicing, polyadenylation, export and degradation are tightly connected in a complex web of interactions. Our lab focuses on the interaction between the cellular Transcription - RNA processing - Translation machinery and cellular and viral genes that are the cause of human disease. HIV-1 and oncogenes are the primary targets of our research.

Ken Dawson-Scully, Ph.D.

Since the origin of life, organisms have been exposed to dynamic and unpredictable environments that have bred adaptations to buffer internal physiological functioning from external fluctuations. The evolution of complex nervous systems, and the behaviors they subserve, has played a fundamental role in shaping mechanisms for maintaining homeostasis in the face of environmental perturbations. Adapted animals, such as insects, employ genetic, molecular, and physiological strategies to prevent specific neurological pathologies resulting from stressors such as low oxygen (anoxia), high temperatures (hyperthermia), and high levels of free radicals (oxidative stress). My research program is poised to take advantage of this through the use of a genetically tractable model system, the fruit fly *Drosophila melanogaster*.

In the recent past *Drosophila* has been used to successfully model a number of human disorders such as Alzheimer's, Parkinson's and obesity. Advantages of the fruit fly include its short life-cycle, high fecundity, sequenced genome and amenability to genetic manipulation. Such characteristics, combined with a general conservation of cellular processes between flies and humans, make *Drosophila* an ideal system to study cellular pathways associated with neural failure following severe trauma, and to develop novel therapies targeting molecules that contribute to neural dysfunction and cell death/damage.

Our goal is to develop novel methods for maintaining both neural function and survival during such instances.

Borko Furht, Ph.D.

Main area of research is in Multimedia Systems and Applications with the focus on: image and video coding and processing; wireless multimedia technologies; secure multimedia communications.

Javad Hashemi, Ph.D.

Research Interests:

- Mechanics
- Materials
- Biomechanics
- Structures

Salvatore Lepore, Ph.D.

Research in the Lepore Group involves the discovery of new ways to "encourage" organic molecules to form bonds leading to desired products, but how? One way is by directing molecules of a compound (i.e. the substrate) through the use of chelating molecular units to help ease the transitions from reactant to product.

This method pioneered by the group is termed Nucleophile Assisting Leaving Groups (NALGs). Specifically, a nucleophile is captured by a chelating molecular unit to "assist" in the leaving group in its departure during bond formation. This NALG method is used to synthesize potential drugs given to patients undergoing positron emission tomography (PET) testing for disease imaging. Another problem is how to ensure the part of the molecule you need does not change. This is accomplished by guarding it using a "protecting group".

The Lepore Group has begun to develop protecting groups whose removal is facilitated by the presence of certain cations. If successful, these designed leaving groups will allow for increased precision in the synthesis of small-molecule compounds. These strategies and more are used in an attempt to synthesize medicinally interesting natural compounds from commercially available starting materials. One class of natural compounds is currently being target by the Group as a potential medicine to inhibit blood-clotting, a major problem among senior citizens. The goal of "total" synthesis is to make non-natural drug variants that are more potent with fewer side effects. Taken together, Organic Chemistry developments in the Lepore Group are expected to give medicinal chemists the molecular "tools" they need to discover new medicines faster and more cost effectively.

Susan Skemp

Susan Skemp started her career with Pratt & Whitney. As a senior analytical engineer from 1981 to 1990, Skemp worked on a variety of Pratt & Whitney's acclaimed engine programs for the United States military, NASA, and commercial markets. On the company's PW220 and PW229 projects, Ms. Skemp was the lead engineer in charge of qualifying the fighter aircraft engines for critical operating regimens in the U.S. military.

Ms. Skemp also contributed to the PW4000 and PW5000 engines of Pratt & Whitney and managed programs to meet ISO 9001 as well as U.S. government standards and regulations. During her initial career with Pratt & Whitney, she performed systems analysis and test verification on the 250K engine and RL10, the first liquid hydrogen-fueled rocket in space, which is an ASME Mechanical Engineering Landmark.

In 1990, Ms. Skemp became program manager of advanced technology, a position she held until 1999. She worked on Pratt & Whitney's Advanced Technology Engine Gas Generator Core Demonstrator, an ambitious \$100 million program focused on increasing the thrust and weight capabilities of the military fighter jet. Ms. Skemp also managed the \$8 million NASA Test Engine System Technology program, developing combustion technologies that reduced emissions of nitrogen oxides by 50 percent. This engine was later refined placed in commercial service.

She is currently the director of the Center for Ocean Energy Technology here at FAU.