

Entrepreneurial Alchemy – Friday, April 13, 2012

Ann Beal Salamone, President, Rochal Industries LLP

Rochal Industries' history, research and products will be briefly discussed. The majority of the presentation will focus on entrepreneurship as a scientist – what is needed to take your creative thoughts (inventions) to a product that is being bought and used. Entrepreneurism is equally important whether working for a company or leading your own company.

Ann Beal Salamone is President of Rochal Industries LLP, a private research company which develops new biomaterials for wound and burn care. She has 15 US patents/applications with their foreign counterparts and is a co-founder of three scientifically-based companies. Polyonics invented and has provided polymeric materials for flexible and multi-layered integrated circuit manufacturing for 23 years. Rochal Industries, Inc. invented and licensed a landmark class of materials for wound care which has been sold throughout the world in hospitals/nursing homes and over the counter for 20 years. To date, Rochal Industries LLP has licensed four invented technologies for human and veterinary care worldwide. Additionally, she served as President or Vice President of the Enterprise Development Corporation, a South Florida science and technology incubator. During her tenure, EDC's Clients increased aggregate revenues by more than \$98 million, raised more than \$74 million in outside funding, created 5,013 jobs, produced annual salaries of \$109.5 million, and provided \$5.6 million in annual sales tax revenues.

Ann was elected Chairman of the American Chemical Society's (ACS) Polymer Division (8,000 members) and has served in a variety of other roles within POLY. She is a co-founder of the Intersociety Polymer Education Council, a joint effort of the ACS and the Society of Plastics Engineers which has provided hands-on in-services to over 200,000 K-12 science teachers since 1991. She is an Inaugural Fellow of the ACS and a Fellow of AIMBE, the recipient of the 2002 Crystal Slipper Award "Executive Woman of the Year" and a recipient of the 2011 Healthcare Businesswomen's Association LEAD Award.

Design of Polymeric Biomaterials

Katelyn E. Reilly, Rochal Industries LLP

The optimized design of biomaterials can be used to develop biomimetic materials to replace damaged or diseased tissues and as drug delivery scaffolds. Several design considerations need to be considered when designing a biomaterial. These criteria were used to develop an *in vivo* forming biomimetic vitreous substitute, which matched the viscoelastic and optical properties of the natural vitreous humor. These hydrogel systems employed a reversible disulfide crosslinker that enabled these hydrogels to be injected as a liquid and form in the ocular cavity for ease of use by a surgeon.

Tissue engineering requires proper mechanical and biological cues to promote cell adhesion and differentiation. These cues can be incorporated by selecting the appropriate biomaterials when designing scaffolds. Tissue engineering scaffolds were developed with these criteria for peripheral nerve regeneration. Extracellular matrix components were incorporated into biopolymer gels to determine their effects on neurite extension in three-dimensional scaffolds. Rheology was used to determine the impact of the additives on the physical properties of the gels to determine the biological and mechanical cues that optimize neurite extension in a tissue engineering scaffold. In addition, electrospinning was used to produce nanofibrous scaffolds for use in peripheral nerve regeneration.

Katelyn Swindle-Reilly, Ph.D., graduated with a B.S. degree in Chemical Engineering and a Cooperative Education Certificate from Georgia Institute of Technology. She then went on to receive her M.S. in Chemical Engineering and a Ph.D. in Energy, Environmental, and Chemical Engineering from Washington University in St. Louis. Her doctoral dissertation focused on the development of an *in vivo* forming biomimetic vitreous substitute. She worked as a postdoctoral researcher in Biomedical Engineering at Saint Louis University on tissue engineering scaffolds for peripheral nerve regeneration. She is currently a Research Associate at Rochal Industries LLP where she researches and develops novel wound care products.