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S E M I N A R S E R I E S

Restoration of cardiac tissue thyroid hormone function in heart failure: Is this the next big breakthrough in treatment?

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College of Osteopathic Medicine
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Thursday, August 28th 2014

12:15-1:15 p.m.

Leonard Hall
UNE, Biddeford Campus

Lunch will be provided

Hosted by: Amy Davidoff, Ph.D.

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Research background

As a graduate student, it dawned on Dr. Gerdes that a maladaptive change in the shape of contracting heart muscle cells likely played a key role in dilated heart failure. At the time, it was believed that chamber dilatation was due largely to slippage of myocytes past one another. Dr Gerdes believed it was more likely that an increase in myocyte length relative to width was responsible for the dilated, thin-walled failing ventricle. He was able to prove his theory using many relevant animal models of heart failure and later in humans while working with the heart transplant program in Tampa, FL.

As his career progressed, it became increasingly evident that low thyroid hormone function may play a major role in progression of various pathological processes leading to heart failure. Indeed, he demonstrated that inducing chronic hypothyroidism alone in a normal rat can eventually lead to dilated heart failure. The observed key cellular changes included a maladaptive change in myocyte shape and alterations in small arterioles that led to microvascular impairment. His research has shown that serum thyroid hormone levels may underestimate the true incidence of low cardiac tissue hormones in heart disease. For the past decade, his work has focused on treatment of various animal models of heart failure with thyroid hormones. Dr. Gerdes has recently developed a safe treatment/monitoring protocol that can be readily translated to patients. Importantly, several clinical studies have shown a link between increased mortality and low thyroid function in heart failure.

Dr. A. Martin Gerdes received his Ph.D. in anatomy from the University of Texas Medical Branch at Galveston in 1978. He then went on as a post doctoral fellow at LSU Medical Center in New Orleans. Following his post doctoral fellowship he held multiple professor positions at various universities, including his current position as Professor and Chair of Biomedical Sciences at New York Institute of Technology College of Osteopathic Medicine.