

True
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works with
the natural
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system

Two Old Friends Re-Connect Over an Invention and a Dream

By Craig Heisner

It's hard to imagine how two friends from a college prep school in Nashua, NH, with such contrasting career paths would have a reason to work together after 25 years, but that's exactly what's happened with me and Jim Collins. Our lives moved in different directions after our four years at Bishop Guertin High School. Jim headed to Holy Cross, where he excelled in the classroom as a physics major, earning class valedictorian while also competing successfully as a member of the cross country and track teams as a 4:18 miler. I stayed in-state and earned a degree in economics at the University of New Hampshire while keeping my passion for athletics alive as a wide receiver on the UNH football team.

After graduation, Jim studied at Oxford as a Rhodes Scholar, where he earned a doctorate in medical engineering before accepting a faculty position at Boston University in 1990 in their Biomedical Engineering department. He's never left and is now the cofounder

Russell Corp. I've also worked with several major brands in strategic consulting roles and had the chance to contribute on the Chicago 2016 Olympic bid team.

On paper, we had little reason to connect through work, but an incredibly intriguing invention by Jim in the late '90's changed all of that. It was at that time that he and I re-connected and shared ideas on what we were working on. Jim told me about his research on a concept that involved a unique technology called "stochastic resonance" that had been around for 10 years or so but had never before been used to treat medical conditions. He had come up with the idea of utilizing vibrating random noise and neuro-stimulation to improve the sensory and motor performance of the human body. Most importantly, he had proven in clinical studies that he could improve balance and tactile sensation when applied to specific areas and had done so for both the elderly in balance studies and diabetics who suffered from peripheral neuropathy. Pretty heady stuff for a shoe industry guy like me to understand, but it sure got my wheels spinning on the market opportunities in the industry.

I remember thinking at the time that this is exactly what our industry needed. Rather than depending on gimmicky components and designs, this offered true "smart" technology that works with the natural human sensory system to improve performance and health. This could be a major breakthrough for the footwear business.

Fast forward almost 10 years to the Spring of 2010 where, after an unsuccessful development by a medical device licensee, Jim's invention was moved to the Wyss Institute at Harvard University with the intent of resolving the technical challenges and moving to launch in the market. Jim shared his desire to involve me on the project and the timing was perfect for me to join the Wyss team as a consultant leading the strategy and commercialization efforts.

Over the past 12 months I've worked directly with Jim and the Wyss Institute engineering team, along with an industrial design firm to fine-tune the designs for both insoles and shoes. The work has also included evolving the electrical needs and identifying a small power source (the biggest challenge), developing a strategy for go-to-market, and initiating business development pitches. We've made significant progress as a team.

The relevance of this technology in footwear and even apparel becomes more exciting every day that I'm involved with the project. By finding a way to

apply this noise stimulation to the body with wafer-thin inexpensive actuators embedded in shoes and insoles, wearers could realize numerous benefits including improved efficiency for performance athletes with less variability in gait and stride length, improved tactile sensation for diabetics to reduce the risk of ulcerations which often lead to amputations, and a clinically proven improvement in balance for both healthy wearers and the elderly who are at a much higher risk of falls.

With a growing consumer base in Wellness and an expanded awareness of the importance of footwear and insoles in the chain of health, the timing seems ideal for a revolutionary technology like this. The next steps involve business development opportunities to explore potential licensee partners which I am leading. I'm thrilled to have the chance to help Jim realize his dream of getting people moving. ●



and co-director of the University's Center for BioDynamics. His career has brought great success with numerous awards for both his work in the classroom and his contributions to research and science including the MacArthur "Genius" Award. Additionally, Collins is a core founding faculty member of the Wyss Institute for Biologically Inspired Engineering at Harvard University.

My career has taken a somewhat different route. After several years in sales and marketing roles in the food business, (Campbell Soup Co. and PowerBar) and a hiatus to earn my MBA, I've worked primarily in the athletic footwear and apparel industry with senior-level marketing and GM roles with New Balance, Reebok, and Brooks Sports. I've been fortunate to have contributed to some significant growth both with the New Balance Running business unit in the '90's and a strategic overhaul with Brooks Sports prior to the business being sold to