From Insight to Innovation:

How a unique discovery captured one scientist's imagination and eventually sustained a global biotechnology enterprise

"Chance favors the prepared mind." Louis Pasteur

BioResource International, Inc. is an agricultural biotechnology company based in North Carolina. BRI's main products, **Versazyme**® and **Valkerase**®, promote sustainability worldwide by increasing the digestibility of animal diets, reducing waste and lowering the costs associated with animal production. Currently distributed by **Novus International, Inc.**, under the trade names **Cibenza™ DP100** and **IND900**, BRI's products are helping farmers in the Americas as well as throughout Asia and the Middle East lower input costs and decrease waste.

BRI's innovation, success and the very existence of their value-add products stem from the identification of a novel enzyme in the 1990s. **Dr. Jason Shih**, Professor in the **NC State University** Department of Poultry Science, was developing a thermophillic poultry waste digester to generate power as part of his research in poultry waste management. He noticed that the poultry feathers mixed in with other waste disappeared in the course of operation. Dr. Shih hypothesized that microbes were actually digesting the keratin protein in the poultry feathers. Based on this hypothesis, he began the painstaking process of identifying and isolating the microbe and the associated enzyme responsible for digesting feather keratin.

Dr. Shih's curiosity and persistence resulted in the identification of a unique bacterium which produced a novel enzyme responsible for breaking down poultry feather protein. Further research proved that the enzyme could also improve digestibility in animal feed so the nutrients can be absorbed more easily. His son **Giles Shih**, who had completed his Ph.D. in Microbiology in 1999, joined his Father and the two of them co-founded BRI to develop, commercialize, manufacture and distribute unique enzyme products based on the original discovery. Funded initially by grants from the **USDA** and **NC Biotechnology Center**, as well as private investment, BRI is now profitable and continues Dr. Shih's original research, making improvements to finished products and developing additional product lines.

"It is very rewarding to be part of a team that has turned a laboratory insight into a product that provides real value for consumers worldwide," explains Giles Shih, Ph.D., now serving his 12th year leading the BRI team.

Moving forward, BRI plans to expand on this discovery and enhance current products, introduce new products and develop other technologies that promote economic and environmental sustainability. For more information or to contact BRI, please visit www.briworldwide.com.

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