Lessons Gleaned from 40 Years of Studying Paracrine and Neural Control of the Endocrine Pancreas

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Dr. Taborsky studies the role of the autonomic nervous system in controlling islet hormone secretion in both health and disease. His group found that islet sympathetic nerves are selectively activated by hypoglycemia and help mediate the glucagon response to that stress. Since this glucagon response is selectively impaired early in human type 1 diabetes, his group looked for a neuropathy in type 1 diabetes that accounted for this early and selective glucagon impairment. This quest led to the discovery of an early sympathetic islet neuropathy (eSIN) in human type 1 diabetes and animal models thereof. Subsequent studies from his laboratory found that eSIN actually precedes diabetes and is mediated by activation of the p75 neurotrophin receptor on sympathetic axons. Dr. Taborsky will give a historical perspective of the decisions and experiments that eventually led to this discovery.