Profiles

David A. Taylor-Fishwick, Ph.D.

Program Director Biomedical Sciences

Professor

Lewis Hall

757-446-7359

taylord@odu.edu

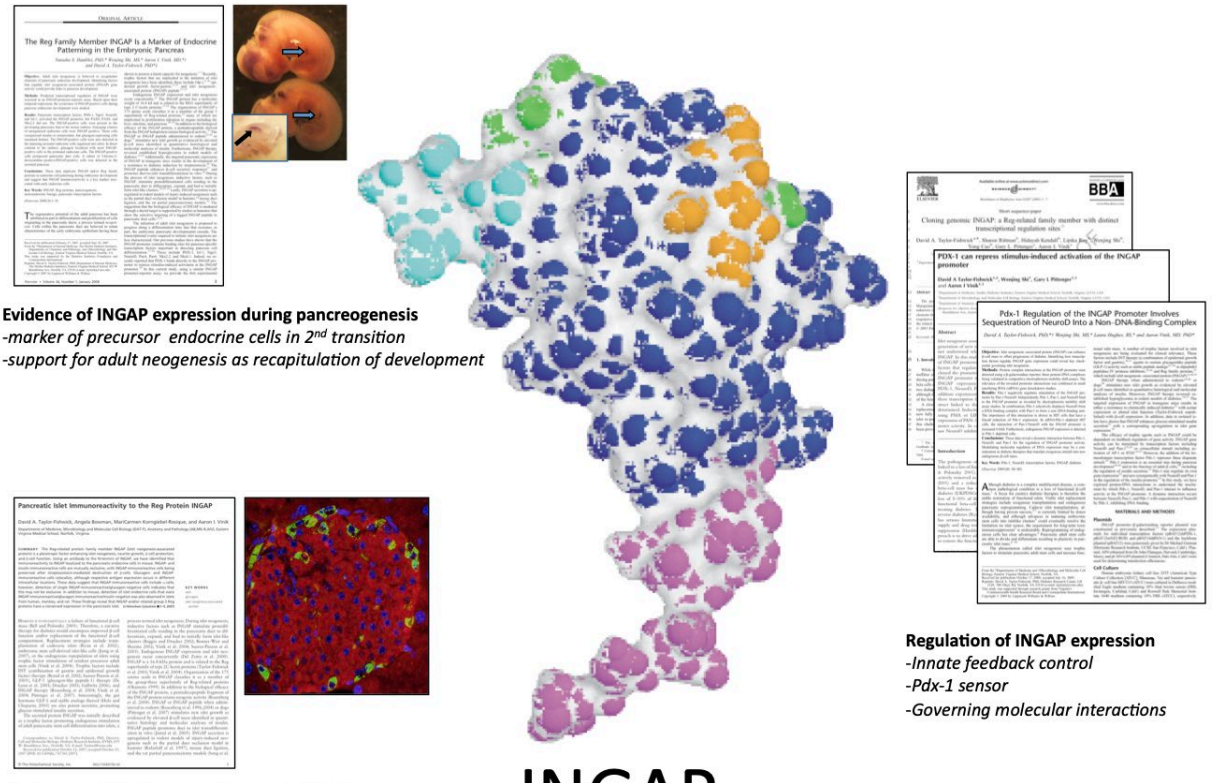
Biography:

Dr. David A. Taylor-Fishwick is a Professor, Department Biomedical and Translational Sciences and past Vice Chair in the Department of Microbiology and Molecular Cell Biology at Eastern Virginia Medical School (EVMS), with extensive research contributions in diabetes pathogenesis and immunology. His work has focused on the role of the 12-lipoxygenase pathway in beta-cell dysfunction, exploring small molecule inhibitors as potential therapeutic agents for diabetes. Additionally, he has investigated Islet Neogenesis Associated Protein (INGAP) as a means of betacell regeneration to restore insulin production. His research on the NADPH oxidase-1 (NOX-1) enzyme has been pivotal in understanding its role in diabetes, demonstrating that small molecule inhibition of NOX-1 can reduce the onset of diabetes in non-obese diabetic (NOD) mice, offering a potential strategy for preserving beta-cell function.

In the field of immunology, Dr. Taylor-Fishwick has made significant contributions to understanding T cell activation mechanisms. His early work explored activation-induced changes in the expression and structure of the interleukin-7 (IL-7) receptor on human T cells, shedding light on T cell proliferation and immune response modulation. Throughout his career, he has contributed to advancing knowledge of diabetes pathogenesis and immune system function, with his work leading to a patent portfolio, including the development of 4-((2-hydroxy-3-methoxybenzyl)amino)benzenesulfonamide derivatives as potent and selective inhibitors of 12-lipoxygenase.

Beyond his research, Dr. Taylor-Fishwick is a dedicated educator and mentor, actively contributing to graduate and medical student education. He is an inducted Master Educator of the Fine Family Academy of Educators and serves as the Director of the Graduate Biomedical Sciences Doctorate and Master's programs at VHS-ODU. Through these roles, he plays a critical part in shaping the next generation of biomedical scientists and healthcare professionals, fostering both academic excellence and professional development.

Research:



Evidence of INGAP expression during pancreogenesis
-marker of precursor endocrine cells in 2nd transition
-support for adult neogenesis as recapitulation of development

Evidence of INGAP expression in adult islets
-Conserved expression across species
-Expression seen in precursor clusters in human fetal pancreas
-support for pleiotropic actions of INGAP evidenced in transgenic phenotypes

Regulation of INGAP expression
-Innate feedback control
-Pdx-1 sensor
-Governing molecular interactions

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