



New Investigator Accomplishments: February – December 2023

Career

- Juan Alvarez, PhD
 - Recipient of New Innovator Faculty Award, Northeast Bioengineering Conference

- Amish Asthana, PhD
 - Promoted to Assistant Professor in the Department of Surgery at Wake Forest School of Medicine, with secondary appointments in the Department of Biomedical Engineering and Wake Forest Institute for Regenerative Medicine.

- Romina Bevacqua, PhD
 - Promoted to Affiliate Faculty Member at the Mindich Child Health and Development Institute (MCHDI), Mount Sinai.

- Jason Bini, PhD
 - Promoted to Research Scientist in the Department of Bioimaging Sciences at Yale University School of Medicine

- Aaron Cox, PhD
 - Started a new position as an Assistant Professor at The University of Texas Health Science Center in Houston.



New Investigator Accomplishments: February – December 2023

Career

- Sangeeta Dhawan, PhD
 - Promoted Associate Professor in the Department of Translational Research & Cellular Therapeutics at City of Hope

- Jing Hughes, PhD
 - Recipient of a Young Physician-Scientist Award, American Society for Clinical Investigators (ASCI)
 - Recipient of an Early Career Development Award, Central Society for Clinical and Translational Research (CSCTR)

- Eddie James, PhD
 - Promoted to Associate Member at Benaroya Research Institute

- Vira Kravets, PhD
 - Started a new position as an Assistant Professor in the Department of Bioengineering and Department of Pediatrics at the University of California, San Diego



New Investigator Accomplishments: February – December 2023

Career

- **Karla Leavens, MD, PhD**
 - Promoted to Assistant Professor at the Children's Hospital of Philadelphia (CHOP) and the Division of Endocrinology and Diabetes in the Department of Pediatrics at the Perelman School of Medicine at the University of Pennsylvania
 - Establishment of an independent research lab with the Division of Endocrinology at CHOP

- **Amelia Linnemann, PhD**
 - Appointed to Director of the Microscopy Core for the Indiana Center for Diabetes and Metabolic Diseases
 - Appointed to Associate Director of Pipeline Program Development at Indiana University School of Medicine

- **Holger Russ, PhD**
 - Promoted to Associate Professor in the Department of Pharmacology & Therapeutics at the University of Florida
 - Appointed as an Honorary Senior Research Fellow in the Institute for Metabolism & Systems Research at the University of Birmingham, United Kingdom



New Investigator Accomplishments: February – December 2023

New Grants/Funding

- Juan Alvarez, PhD
 - Recipient of Penn DRC Pilot Award
 - Recipient of Penn RNA Innovation Award
 - Recipient of Margaret Q. Landenberger Research Award

- Amish Asthana, PhD
 - Recipient of NIH NIDDK HIRN Gateway R03 Award
 - Co-recipient of Juvenile Diabetes Research Foundation (JDRF) Strategic Research Agreement (SRA): "3D bioprinting of complex pancreatic tissues as therapeutic products"

- Romina Bevacqua, PhD
 - Recipient of NIH NIDDK HIRN Gateway R03 Award

- Jason Bini, PhD
 - Recipient of NIH NIDDK HIRN Gateway R03 Award



New Investigator Accomplishments: February – December 2023

New Grants/Funding

- Aaron Cox, PhD
 - Recipient of NIH NIDDK HIRN Gateway R03 Award
 - Recipient of NIH R01 Award (1R01DK136694)
 - Recipient of University of Texas (UT) Health Start-up Funding
 - Recipient of University of Texas (UT) System Rising STARS Award

- Sangeeta Dhawan, PhD
 - Recipient Arthur Riggs Diabetes and Metabolism Research Institute Innovation Award

- Leonardo Ferreira, PhD
 - Recipient of Swim Across America Grant
 - Recipient of American Cancer Society Institutional Research Grant

- Jing Hughes, PhD
 - Recipient of NIH NIDDK R01: "Paracrine regulation of islet cell function by primary cilia"



New Investigator Accomplishments: February – December 2023

New Grants/Funding

- Alok Joglekar, PhD
 - Recipient of NIH Director's Transformative Research Award: “Unraveling microprotein biology with an evolutionary-immunological framework Awarded Juvenile Diabetes Research Foundation Strategic Research Agreement: Determining the antigenic landscape of T cells in Type 1 Diabetes”

- Hirotake Komatsu, PhD
 - Recipient of Juvenile Diabetes Research Foundation (JDRF) Award: Sequential multi-molecule release from nanofiber scaffolds for improved stem cell-derived islet transplantation under the skin
 - Co-Recipient of a Juvenile Diabetes Research Foundation Award: Non-invasive immunoimaging of islet transplant rejection

- Vira Kravets, PhD
 - Recipient of a UCSD/UCLA Diabetes Research Center Pilot and Feasibility Award

- Amelia Linnemann, PhD
 - Recipient of Juvenile Diabetes Research Foundation (JDRF) Strategic Research Agreement (SRA): Evaluation of Oxidized Insulin as a Biomarker and Therapeutic Target in Type 1 Diabetes



New Investigator Accomplishments: February – December 2023

New Grants/Funding

- Jing Liu, PhD
 - Recipient of NIH NIDDK HIRN Gateway R03 Award

- Holger Russ, PhD
 - Recipient of JDRF SRA: Tolerance signals from human pregnancy for beta cell replacement therapy
 - Recipient of JDRF SRA: Engineered Nanocapsules for Targeted Drug Delivery to the Beta Cell
 - Recipient of NIH NINDS R01 Award: “Mechanistic analysis of TDP-43-mediated RNA localization in neurons and its misregulation in ALS”

- Matthew Wortham, PhD
 - Recipient of NIH NIDDK HIRN Gateway R03 Award



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Juan Alvarez, PhD
 - Invited Speaker, Yale Center for Molecular and Systems Metabolism Seminar Series. “Chrono-energetics: Linking Circadian Metabolism to Islet Replacement Therapeutics”.
 - Invited Speaker, UCLA Visiting Professor Islet Research Virtual Seminar Series. “Circadian Rhythms and Pancreatic Beta Cell Maturation”.
 - Invited Speaker, Mid-Atlantic Diabetes and Obesity Research Symposium (MADORS) and Nutrition Obesity Research Center (NORC) Meeting. “Circadian Rhythms and Pancreatic Beta Cell Maturation”.
 - Invited Speaker, Pennsylvania State University 39th Summer Symposium in Molecular Biology. “Chromatin Architecture of the Human Pancreatic Islet Circadian Clock.”
 - Invited Speaker, Northeast Bioengineering Conference. “Cyborg Islets: Implanted Flexible Electronics Reveal Principles of Human Islet Electrical Maturation. (March 2023)
 - Invited Speaker, Endocrine Society Meeting. “Pancreatic islet organoid maturation by feeding-fasting entrainment”. (June 2023)
 - Invited Speaker, Human Islet Research Network (HIRN) Annual Investigator Meeting. “Cyborg Islets: Implanted Soft Nanoelectronics Reveal Principles of Human Islet Electrical Maturation”. (September 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Amish Asthana, PhD
 - Invited Speaker, TERMIS-AM, "Artificial mitochondrial transfer As A New Tool To Enhance Regeneration And Repair In An In Vitro Model Of Renal Tubular Injury And In An Ex Vivo Porcine Model Of DCD Renal Transplantation" (Boston, April 2023).
 - Invited Speaker, JDRF Virtual Beta Cell Consortium Meeting, "3D bioprinting of complex pancreatic tissues as therapeutic products" (November 2023)
 - Invited Speaker, International Society for Cell and Gene Therapy (ISCT) webinar, "Emerging Techniques in Cell Replacement Therapy for Pancreatic Disease" (December 2023)

- Romina Bevacqua, PhD
 - Invited Speaker, Finalist for the MCHDI Annual
 - Invited Speaker at MCHID Incubator Series



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Aaron Cox, PhD
 - Invited Speaker, Caswell Diabetes Institute Seminar Series, University of Michigan. “New approaches to increase functional beta cell mass for diabetes.” (March 2023)
 - Invited Speaker, Division of Endocrinology, Diabetes and Nutrition Seminar Series, Robert Wood Johnson Medical School, Rutgers University. “New mechanisms governing islet function and beta cell proliferation.” (April 2023)
 - Invited Speaker, Department of Microbiology, Molecular Genetics, and Immunology Seminar Series, Univ of Kansas Med Center. “Impacts of inflammatory signaling on islet function and beta cell regeneration.” (May 2023)
 - Invited Speaker, Department of Integrative Biology and Physiology Seminar Series, University of Minnesota. “New mechanisms governing islet function and beta cell proliferation.” (May 2023)
 - Invited Speaker, Comprehensive Diabetes Center Virtual Seminar, University of Alabama at Birmingham. “New mechanisms governing islet function and beta cell proliferation.” (May 2023)
 - Poster Presentation, American Diabetes Association (ADA) Annual Meeting. "Leptin regulates delta cell secretion of somatostatin from human and mouse islets" (June 2023)
 - Invited Speaker, Institute of Molecular Medicine Seminar Series, University of Texas Health Science Center at Houston. “New mechanisms governing islet function and beta cell proliferation.” (June 2023)
 - Invited Speaker, Center for Perioperative Med Seminar Series, Dept of Anesthesiology, Critical Care & Pain Med, Univ of Texas Health Science Ctr at Houston. “New mechanisms governing islet function and beta cell proliferation.” (October 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Sangeeta Dhawan, PhD
 - Invited Speaker, American Diabetes Association (ADA) Annual Meeting. “Epigenetic control of beta-cell stress response and senescence.” (June 2023)
 - Invited Speaker, The SugarScience “Ask the Expert” (virtual). “Beta cell identity: from development to diabetes” (August 2023)
 - Invited Speaker, Vanderbilt University Diabetes Research Training Center Seminar Series. “Developmental DNA methylation Patterning of the Functional Beta Cell Phenotype. (October 2023)
 - Invited Speaker, The Golden State Seminar Series at the Stanford Diabetes Research Center (virtual). “DNA methylation Patterning of Beta Cell Heterogeneity and Health: From Development to Disease” (November 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Leonardo Ferreira, PhD
 - Invited Speaker, Barbara Davis Center for Diabetes Seminar. “Engineering regulatory T cells and beyond to treat type 1 diabetes” (January 2023)
 - Invited Speaker, Advanced Therapies Week. “Developing CAR Tregs as living therapeutics for type 1 diabetes” (January 2023)
 - Invited Speaker, Microbiology and Immunology Department Seminar, Medical University of South Carolina (MUSC). “ CAR Tregs: The road ahead” (February 2023)
 - Invited Speaker, Regenerative Medicine and Cell Biology Department Seminar, MUSC. “ Engineering regulatory T cells: challenges and opportunities” (March 2023)
 - Invited Speaker, Basic Science Research Seminar, Brigham and Women's Hospital, Harvard Medical School. “CAR Tregs: Down an unexpected road” (March 2023)
 - Invited Speaker, Molecular and Cell Biology Seminar, Uniformed Services University Health Services (USUHS). “CAR Tregs: Driving regulatory T cells down new paths using chimeric antigen receptors (March 2023)
 - Invited Speaker, HIRN Webinar. “Designer immunology: repurposing and augmenting immune cells as living drugs. National Youth Science Academy (May 2023)
 - Invited Speaker, HIRN Webinar Series, A roadmap to restoring tolerance in type 1 diabetes: CAR Tregs and beyond” (August 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Jing Hughes, PhD
 - Invited Speaker, International Congress of Diabetes and Metabolism, Gyeongju, South Korea (October 2023)
 - Invited speaker, University of Pennsylvania DRC seminar series (October 2023)

- Eddie James, PhD
 - Invited Speaker, Charles Institute of Dermatology Seminar Series, School of Medicine University College. “Recognition of Elicited CD4+ T Cell epitopes in Autoimmune Disease” (May 2023)
 - Invited Speaker, Immune Tolerance Workshop, RTCure Immune Tolerance Workshop. “T cells in RA: specificities and Functions” (May 2023)
 - Invited Speaker, Immunology of Diabetes Society Congress T-Cell Workshop. “Multi-center study of autoreactive CD4+ T cells with Class II multimers” (May 2023)
 - Invited Speaker, North American Cystic Fibrosis Conference. “Investigating beta cell reactive T cells and immune phenotypes in cystic fibrosis-related diabetes” (November 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Alok Joglekar, PhD
 - Invited Speaker, Forsyth Institute. T cell antigen discovery for understanding and engineering immunity (March 2023)
 - Invited Speaker, Invited talk at the Cold Spring Harbor Symposium on Systems Immunology. An Integrated Analysis of the Antigen-Specific T Cell Landscape in Autoimmunity (April 2023)
 - Invited Speaker, Pfizer DeCodeImmuneAI Symposium. Cell Based Epitope Discovery Using Signaling and Antigen-presenting Bifunctional Receptors (June 2023)
 - Invited Speaker, FASEB Autoimmunity Meeting. Dissecting the T cell repertoire in autoimmunity (August 2023)
 - Invited Speaker, NIH High Risk High Reward program seminar series. Signaling via MHC: a new paradigm for immune engineering (September 2023)
 - Invited Speaker, Gilead Inc. Cell Based Epitope Discovery Using Signaling and Antigen-presenting Bifunctional Receptors (September 2023)
 - Invited Speaker, Invited talk at the University of Florida Diabetes Institute. T cell antigen discovery for understanding and engineering immunity (October 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Hirotake Komatsu, PhD
 - Invited Speaker, American Chemical Society (ACS). “Multifunctional core-sheath nanofibers for oxygenation of cell islet transplantation” (March 2023)
 - Invited Speaker, The 22nd International Conference on Solid-State Sensors, Actuators and Microsystems. “Simple Fabrication of Parylene-based Slippery Liquid-infused Porous Surfaces for Healthcare Applications” (June 2023)
 - Invited Speaker, IPITA-IXA-CTRMS 2023 Joint Congress. “Hypoxia-related genes in pre-transplant human islets as potential markers for the transplantation outcomes in diabetic mice” (October 2023)
 - Invited Speaker, IPITA-IXA-CTRMS 2023 Joint Congress. “The Role of Gastrin in Human Islets and Type 1 Diabetes Animal Model” (October 2023)

- Vira Kravets, PhD
 - Invited Speaker, Islet Study Group Annual Meeting. “The role of the paracrine interaction in the pancreatic beta cell networks” (June 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Amelia Linnemann, PhD
 - Invited Speaker, Network for Pancreatic Organ Donors with Diabetes (nPOD) Annual Meeting. "Cutting-Edge Seminar V: Novel Imaging Techniques" (February 2023)
 - Invited Speaker, Islet Study Group Meeting, "In Vivo Imaging of Islet Autophagy"(June 2023)
 - Invited Speaker, Medical University of South Carolina Research Seminar. "In Vivo Imaging of Beta Cell Stress Response" (September 2023)
 - Invited Speaker, University of Minnesota Integrative Biology and Physiology Seminar. "In Vivo Imaging of Beta Cell Stress Response" (November 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Holger Russ, PhD
 - Invited Speaker, Advanced Therapies. “Generating a human thymus from stem cells.” (March 2023)
 - Invited Speaker and Panelist, 4th IPITA/HSCI Summit. “Hypoimmunogenic stem cell islets” (April 2023)
 - Invited Speaker, Immunology of Diabetes Society meeting. “CD9 marks a human beta cell subpopulation with increased immunogenicity” (May 2023)
 - Invited Speaker and Panelist, American Diabetes Association (ADA) Annual Meeting. “Immune engineering human beta cells” (June 2023)
 - Invited Speaker and Panelist, HIRN Annual Meeting. “Discovery of novel human autoimmune β cell antigens using ribosome profiling” (Sep. 2023)
 - Invited Speaker, New York Stem Cell Foundation. “Discovery of a human beta-cell subset with distinct phenotype, function and immunogenicity. (Oct. 2023)
 - Invited Speaker, Munich Technical University. “Treating and modeling human autoimmune diabetes using stem cell technology” (Nov. 2023)
 - Invited Speaker, University of Birmingham (UK). “Treating and modeling human autoimmune diabetes using stem cell technology” (Nov. 2023)
 - Invited Speaker, University of Oxford (UK). “Treating and modeling human autoimmune diabetes using stem cell technology. (Nov. 2023)



New Investigator Accomplishments: February – December 2023

Scientific Presentations

- Matthew Wortham, PhD
 - Invited Speaker, UCSD/UCLA Diabetes Research Center Annual Retreat, "Epigenomic control of cell state governs beta cell adaptation and failure" (March 2023)
 - Invited Speaker, Islet Research Group Seminar Series (virtual), "Epigenomic control of cell state in beta cell adaptation and failure" (April 2023)
 - Invited Speaker, UCSD Genetics Training Program Annual Retreat, "Cell states associated with pancreatic beta cell compensation and failure in type 2 diabetes" (June 2023)
 - Invited Speaker, The SugarScience "Ask the Expert" (virtual). "Epigenomic control of cell state in beta cell adaptation and failure" (July 2023)
 - Invited Speaker, Helmholtz Munich Diabetes Conference, "Epigenomic control of cell state in beta cell adaptation and failure" (September 2023) (Nominated for the Helmholtz Young Investigator in Diabetes Award)



New Investigator Accomplishments: February – December 2023

Publications

- Juan Alvarez, PhD PhD
 - An adult clock component links circadian rhythms to pancreatic β -cell maturation. bioRxiv.
 - Scalable generation of 3D pancreatic islet organoids from human pluripotent stem cells in suspension bioreactors. STAR Protocols.

- Amish Asthana, PhD
 - Mitochondria transplantation mitigates damage in an in vitro model of renal tubular injury and in an ex vivo model of DCD renal transplantation. Annals of Surgery.
 - Decellularized human pancreatic extracellular matrix-based physiomimetic microenvironment for human islet culture. Acta Biomaterialia.
 - Mesenchymal Stem Cells as an Adjuvant Tool to Induce Regeneration and Repair in Marginal Renal Allografts. Current Transplantation Reports.
 - Regenerative Surgery: Is This an Independent Field of Health Sciences or Only a Semantic Exercise? Current Transplantation Reports.

- Romina Bevacqua, PhD
 - HNF1 α maintains pancreatic α and β cell functions in primary human islets. JCI Insight
 - Multiplexed CRISPR gene editing in primary human islet cells with Cas9 ribonucleoprotein. bioRxiv.



New Investigator Accomplishments: February – December 2023

Publications

- Sangeeta Dhawan, PhD
 - DNA methylation dependent restriction of Tyrosine Hydroxylase contributes to pancreatic beta cell heterogeneity. Diabetes.
 - Coordination between ECM and cell-cell adhesion regulates the development of islet aggregation, architecture, and functional maturation. eLife
 - Senescence: a double-edged sword in beta-cell health and failure? Frontiers Endocrinology.
 - The clock-modulatory activity of Nobiletin suppresses adipogenesis via Wnt signaling. Endocrinology

- Abdel El Ouaamari, PhD
 - Transcriptome and Secretome Profiling of Sensory Neurons Reveals Sex Differences in Pathways Relevant to Insulin Sensing and Insulin Secretion. FASEB J



New Investigator Accomplishments: February – December 2023

Publications

- Leonardo Ferreira, PhD
 - Regulatory T cell homeostasis: requisite signals and implications for clinical development of biologics. *Clinical Immunology*
 - Conference report: Advanced Therapies Week. *Regenerative Medicine*
 - Efficient T cell adoptive transfer in lymphoreplete hosts mediated by transient Stat5 signaling. *Molecular Therapy*
 - Redirecting human conventional and regulatory T cells using chimeric antigen receptors. *Methods in Molecular Biology*
 - How to test human CAR T cells in solid tumors, the next frontier of CAR T cell therapy. *Methods in Molecular Biology*

- Jing Hughes, PhD
 - Rediscovering primary cilia in pancreatic islets. *Diabetes & Metabolism Journal*
 - Scanning electron microscopy of human islet cilia. *PNAS* *Cover story
 - Beta cell primary cilia mediate somatostatin responsiveness via SSTR3. *Islets*



New Investigator Accomplishments: February – December 2023

Publications

- Eddie James, PhD
 - The beta cell-immune cell interface in type 1 diabetes (T1D). *Molecular Metabolism*
 - Technical Validation and Utility of an HLA Class II Tetramer Assay for Type 1 Diabetes: A Multicenter Study. *Journal of Clinical Endocrinology & Metabolism*
 - Autoimmune susceptible HLA class II motifs facilitate the presentation of modified neoepitopes to potentially autoreactive T cells. *Cell Immunology*
 - Characterizing T cell responses to enzymatically modified beta cell neo-epitopes. *Frontiers of Immunology*

- Alok Joglekar, PhD
 - The beta cell-immune cell interface in type 1 diabetes (T1D). *Molecular Metabolism*
 - Dietary tryptophan metabolite released by intratumoral *Lactobacillus reuteri* facilitates immune checkpoint inhibitor treatment". *Cell*



New Investigator Accomplishments: February – December 2023

Publications

- Hirotake Komatsu, PhD
 - A scalable human islet 3D-culture platform maintains cell mass and function long-term for transplantation. American Journal of Transplantation
 - Ubiquitous Luciferase Expression in "Firefly Rats" Does Not Alter the Pancreatic Islet Morphology, Metabolism, and Function. Cell Transplantation

- Vira Kravets, PhD
 - Restoring connexin-36 function in diabetogenic environments precludes mouse and human islet dysfunction. The Journal of Physiology.
 - 95-OR: To Which Degree Do Alpha Cells Shape the Role of the Beta Cells First Responders?". Diabetes

- Amelia Linnemann, PhD
 - Factor VIII Trafficking to CD4+T cells Shapes its Immunogenicity and Requires Several Types of Antigen Presenting Cells. Blood
 - The beta cell-immune cell interface in type 1 diabetes (T1D). Molecular Metabolism



New Investigator Accomplishments: February – December 2023

Publications

- Holger Russ, PhD
 - Regulatory approval of islet transplantation for treatment of type 1 diabetes: Implications and what is on the horizon. *Molecular Therapies*
 - The beta cell-immune cell interface in type 1 diabetes (T1D). *Molecular Metabolism*.
 - A fast chemical reprogramming system promotes cell identity transition through a diapause-like state. *Nature Cell Biology*
 - Enrichment of stem cell-derived pancreatic beta-like cells and controlled graft size through pharmacological removal of proliferating cells. *Stem Cell Reports*.
 - Nutrient-dependent regulation of β -cell proinsulin content. *Journal of Biological Chemistry*. 2023
 - Generation of functional thymic organoids from human pluripotent stem cells. *Stem Cell Reports*
 - Cell Replacement Therapy for Type 1 Diabetes Patients: Potential Mechanisms Leading to Stem-Cell-Derived Pancreatic β -Cell Loss upon Transplant. *Cells*

- Matthew Wortham, PhD
 - Nutrient regulation of the islet epigenome controls adaptive insulin secretion. *Journal of Clinical Investigation*
 - Beta cell dysfunction induced by BMP-2 is associated with histone modifications and decreased NeuroD1 chromatin binding. *Cell Death & Disease*



New Investigator Accomplishments: February – December 2023

Research Accomplishments

- Sangeeta Dhawan, PhD
 - Identified a novel CTCF and Cohesin dependent epigenetic mechanism of beta cell genomic stability and transcriptional control.
 - Identified the neonatal beta cell growth phase as a key window of DNA damage vulnerability .
 - Our new data highlight the importance of early developmental epigenetic mechanisms in determining adult beta cell health.

- Eddie James, PhD
 - In collaboration with the research team, developed an improved co-culture system for evaluating T cell reactivity against stressed versus unstressed beta cells
 - In collaboration with the research team, identified novel deamidated epitopes generated in stressed islets that are preferentially recognized by self-reactive T cells in subjects with T1D
 - In collaboration with Katie Haskins, Rocky Baker, and the research team, demonstrated recognition of the human analog of the BDC 2.5 HIP in human subjects with T1D.



New Investigator Accomplishments: February – December 2023

Research Accomplishments

- Vira Kravets, PhD
 - The HIRN Research Project, contributed to our knowledge of proximity and GLP1 mediated interaction of "1st responder" beta cells and glucagon-producing a-cells. This is important because as I showed in PLOS Bio, 2022, loss of the 1st responder b-cells causes loss of the 1st phase islet's response to glucose, similar to that observed in pre- and type1 diabetes [J Clin Endocrinol Metab, Brunzell, 1976]. Understanding which b-cells are lost first aligns with HIRN mission "To better understand how human beta cells are lost in Type 1 Diabetes ..."



New Investigator Accomplishments: February – December 2023

Other Updates

- Sangeeta Dhawan, PhD
 - The PI's Postdoctoral Fellow mentee (Dr. Sneha Varghese) received a California Institute of Regenerative Medicine CIRM postdoctoral fellowship and received a best poster award at the HIRN Annual Meeting 2023.
 - The PI's Undergraduate Research Associate (Giovanni Hernandez De-La Peña) received the best poster award at the City of Hope annual research day.

- Leonardo Ferreira, PhD
 - MUSC Microbiology and Immunology Department Retreat session co-leader, 2023
 - MUSC Hollings Cancer Biology and Immunology Program Retreat co-chair, 2023
 - Co-chair, Human Islet Research Network (HIRN) Annual Meeting, 2023
 - The PI's Postdoctoral Trainees received awards at the HIRN Annual meeting (one for an oral presentation and one for a poster presentation)
 - Invited to serve as Associate Editor, Cardiovascular Endocrinology, Frontiers in Endocrinology, 2023-present
 - Patent application published: HLA-A2-specific regulatory T cells. WO2023019144A1, February 2023
 - Filed 3 patent applications.



New Investigator Accomplishments: February – December 2023

Other Updates

- Jing Hughes, PhD
 - Continuing to co-host the weekly virtual Islet Research Seminar Series
 - The PI's Postdoctoral received NIH K12 award
 - The PI's Postdoctoral won Proteintech microscopy award
 - Undergraduate students admitted to MSTP programs at Washington University and UT Southwestern

- Hirotake Komatsu, PhD
 - Invited lecturer, Advanced Research Seminar at the Juntendo University School of Medicine. “Transplanting Pancreatic Islet Cells to Cure Diabetes: A Potential Alternative to Insulin Injections”
 - Invited lecturer, Diabetes Seminar at the University of California San Francisco. “Overcoming the Challenges of Graft Hypoxia: Lessons from Pancreatic Islet Transplantations”



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Other Updates

- Amelia Linnemann, PhD
 - Invited to serve as a Visiting Professor for the NIDDK Medical Student National Research Symposium (Vanderbilt University, July 25-26, 2023)
 - Two of the PI's Predoctoral Students were awarded NIH F31 awards
 - The PI's summer medical student was awarded the Indiana Medical Student Program for Research and Scholarship Program Excellence in Diabetes Research Award

- Matthew Wortham, PhD
 - Lab welcomed five undergraduate students
 - Organized a local seminar series covering Type 1 Diabetes and Islet Biology
 - Invited to serve as an ad hoc reviewer for NIH NIDDK Special Emphasis Panel R03 ZDK1 GRB-S (O2)