New Investigator Accomplishments: August 2021 - January 2022

New Grant Award

- Joana Almaca, PhD
  - Pilot Award from the Helmsley Charitable Trust George Eisenbarth Award for nPOD.
    Project title: “Changes in islet pericyte phenotype and function during type 1 diabetes”

- Leonardo Ferreira, PhD
  - American Cancer Society Institutional Research Grant (ACS IRG)
  - Diabetes Research Connection (DRC)

- Jing Hughes, PhD
  - Doris Duke Foundation

- Karla Leavens, MD, PhD
  - NIH NIDDK K08 Grant “Dissecting the mechanisms behind biphasic β-cell disease caused by mutations in HNF1α”

- Holger Russ, PhD
  - Second Tranche funding, Grubstake Grubstake Award, CU Innovations
New Investigator Accomplishments:  
August 2021 - January 2022

New Grant Award

- Alok Joglekar, Ph.D.
  - dkNET New Investigator Pilot Program in Bioinformatics
    Project title: “Systems analyses of T cell repertoires in Type 1 Diabetes”

- Rafael Arrojo e Drigo, Ph.D.
  - dkNET New Investigator Pilot Program in Bioinformatics
    Project title: “Dissecting the Heterogeneity of Human Islet Cells with Single Cell Technologies”

As of: January 2022
New Investigator Accomplishments: August 2021 - January 2022

Research Accomplishment

- Jing Hughes, PhD: We have recruited two new lab members and are expanding research operations. New projects maturing into papers and grant applications in 2022

- Vira Kravets, PhD: “Postdoc of the month” (January 2022) by the Postdoctoral Association of the University of Colorado, Anschutz Medical Campus.

- Amelia Linnemann, PhD
  - Named Editorial Board member for Diabetes (term 2022-2024)
  - Graduated a PhD student, Dr. Charanya Muralidharan, who is now pursuing postdoctoral studies with Dr. Raghu Mirmira

- Holger Russ, PhD
  - Session Chair, “Islets Organoids from pluripotent and adult stem cells”, IPITA 2021 Virtual Congress
  - Session Chair, “Emerging Technologies” JDRF nPOD 2022 Investigator Meeting
New Investigator Accomplishments: August 2021 - January 2022

Scientific Presentations:

- Sangeeta Dhawan, PhD
  - 81st Annual Scientific Sessions of the American Diabetes Association (June 2021)

- Abdel El Ouaamari, PhD
  - Rutgers Robert Wood Johnson Medical School. Endocrine Division Seminar Series. Sensory Neuromodulation of Pancreatic β Cells. (Dec 2021)
  - Texas Tech University Health Sciences Center. Sensory Neuromodulation of Pancreatic β Cells. (January 2021)

- Hirotake Komatsu, PhD
  - Special Seminar at the Department of Biomedical Engineering, University of Cincinnati (November 2021). “The effect and methods of oxygenation for islet transplantation in the treatment of diabetes”
  - Caltech Medical Engineering Seminar Series (October). “Bridging between clinic and engineering: development of oxygen-transporting mesh for cell transplantation”

- Vira Kravets, PhD
  - Oral Presentation at Western Region Islet Study Group (WRISG): "Spatial Organization of First Phase Calcium Response to Glucose in Mouse and Human Pancreatic Islets"
New Investigator Accomplishments: August 2021 - January 2022

Scientific Presentations:

- Amelia Linnemann, PhD
  - Larry Hillblom Islet Research Center at University of California Los Angeles Seminar (May 2021)
  - 81st Annual Scientific Sessions of the American Diabetes Association (June 2021)
  - University of Colorado Denver, Barbara Davis Center Research In Progress Seminar (September 2021)
  - University of British Columbia, BC Children's Hospital Research Institute Seminar (November 2021)
  - Diabetes Canada, Let's End Diabetes 2021 Professional Conference (November 2021)
  - Vanderbilt University Medical Center, DRTC Seminar (January 2022)

- Robert Sharp, PhD
  - Pediatrics Science Day (Univ. of Florida, June 2021) (Oral/Poster Presentation, Top 4 Posters). “Disruption of the Signal Regulatory Protein Gamma (SIRPy) and CD47 Signaling Pathway in CD8+ T cells Results in an Augmented Effector Phenotype”
  - Federation of Clinical Immunology (FOCIS) Virtual Annual Meeting (June 2021, Virtual Poster Session (Poster). “Disruption of the Signal Regulatory Protein Gamma (SIRPy) and CD47 Signaling Pathway in CD8+ T cells Results in an Augmented Effector Phenotype”
New Investigator Accomplishments:
August 2021 - January 2022

Scientific Presentations:

- Holger Russ, PhD
  - Physiology Department Seminar Series, University of Toronto, Canada (virtual)
  - Advanced Therapies Congress (virtual)
  - UCSF Diabetes Seminar Series, UCSF, CA (virtual)
  - MOLBIO Retreat, Winterpark, CO
  - Western Regional Islet Study Group Meeting, Stevenson, WA

- Rafael Arrojo e Drigo, PhD
  - October 2021: Virtual Visiting Professor Islet Research program – Organized by Wash Univeristy, UCLA, Mayo Clinic and City of Hope
  - Jan 2022: nPOD meeting, session: Cutting Edge Seminar I: Islet Cell Biology and Implications for Type 1 Diabetes
New Investigator Accomplishments:
August 2021 - January 2022

Research Publications:

- Joana Almaca, PhD

- Juan Alvarez, PhD
  - An adipose IncRAP2 - Igf2bp2 complex enhances adipogenesis and energy expenditure by stabilizing target mRNAs. iScience (2021) 25, 103680. PMID: 35036870

- Rafael Arrojo e Drigo, PhD (contributing author)
  - Identification of long-lived proteins in the mitochondria reveals increased stability of the electron transport chain. Dev Cell 2021
  - Single-Cell Transcriptomics Reveals a Conserved Metaplasia Program in Pancreatic Injury. Gastro 2022
  - Heterogenous impairment of α cell function in type 2 diabetes is linked to cell maturation state. Cell Metab 2022
New Investigator Accomplishments:
August 2021 - January 2022

Research Publications:

- Sangeeta Dhawan, PhD

- Leonardo Ferreira, PhD
  - Precision Engineering of an Anti-HLA-A2 Chimeric Antigen Receptor in Regulatory T Cells for Transplant Immune Tolerance, Front Immunol 2021
  - IL-6 and TNFα Drive Extensive Proliferation of Human Tregs Without Compromising Their Lineage Stability or Function, Front Immunol 2021
  - Modeling Human T1D-Associated Autoimmune Processes. Molecular Metabolism, 12/2021; 101417., DOI: 10.1016

- Eddie James, PhD
  - Impaired HA-specific T follicular helper cell and antibody responses to influenza vaccination are linked to inflammation in humans. Elife. 2021 Nov 2;10:e70554. doi: 10.7554/eLife.70554. PMID: 34726156
New Investigator Accomplishments: August 2021 - January 2022

Research Publications:

- Hirotake Komatsu, PhD
  - "A Multiparametric Assessment of Human Islets Predicts Transplant Outcomes in Diabetic Mice" in Cell Transplantation, 2021

- Vira Kravets, PhD

- Amelia Linnemann, PhD
New Investigator Accomplishments:
August 2021 - January 2022

Research Publications:

- Holger Russ, PhD
  - Use of Induced Pluripotent Stem Cells to Build Isogenic Systems and Investigate Type 1 Diabetes. Front Endocrinol (Lausanne). 2021 Nov 9;12:737276.
  - Generation of thymic cells from pluripotent stem cells for basic research and cell therapy. Translational Immunology Book, Vol. 2
  - From the dish to humans: A stem cell recipe for success. In press, Cell Metabolism, February issue.

- Robert Sharp, PhD
  - The Immunoregulatory Role of the Signal Regulatory Protein Family and CD47 Signaling Pathway in Type 1 Diabetes. Frontiers in Immunology, 9/2021; 12., DOI: 10.3389/fimmu.2021.739048
  - Modeling Human T1D-Associated Autoimmune Processes. Molecular Metabolism, 12/2021; 101417., DOI: 10.1016
New Investigator Accomplishments:
August 2021 - January 2022

Additional Update(s)

- Leonardo Ferreira, PhD: Online Video: Reprogramming human regulatory T cell specificity with a novel anti-HLA-A2 chimeric antigen receptor (December 2021)