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A1c what's happening

SEPTEMBER 2022

BARBARA DAVIS COMMUNITY HONORS THE LIFE AND LEGACY OF DR. SLOVER

Robert Slover passed away on Friday, August 5, 2022, bringing to a close 73 years of service as a husband, father, grandfather, physician, veteran, scholar, and ecclesiastical leader.

Dr. Slover joined the faculty of BDC in 2002 and became the Director of Pediatric Diabetes Division in 2011. His research work focused in the area of insulin pump and sensor use, the use of sensor-augmented pump therapy, and the development of closed loop (artificial pancreas) systems. He was the PI of several studies at the BDC including the pivotal ASPIRE study, and the pre-pivotal and pivotal trials of hybrid closed loop systems in children from as young as age 8. This work progressed through intensive hospital trials, and closely monitored off-site studies, to home use with extended periods of direct observation in group settings. Numerous publications attest to the success of this new technology. Dr. Slover used his special expertise of diabetes technology use in children to assist in the development of appropriate diabetes modules to educate parents and families in the newest diabetes technology. He was an expert in the collection, review, analysis, and interpretation of continuous glucose monitor data including measurements of variability, analysis of glycemic variability, percent time spent in various glucose ranges, and other glycemic data outcomes. As the PI of many studies, he authored over 250 peer-reviewed publications.

Dr. Slover made a lasting impact on the Diabetes community as a whole and we will always remember him.

2020 DRC PILOT & FEASIBLITY AWARDEE DR. SRIDHARAN RAGHAVAN - LESSONS & TRIUMPHS

How did the P&F award help your research?

The P&F award allowed us to create a new, validated database for analyses of patterns of care and outcomes in a real-world population of individuals with prediabetes and diabetes. Such independent datasets are essential for real-world evidence generation, and the P&F award allowed us to do this work in a rigorous way. Creating phenotyping algorithms from electronic health record data can be challenging and the award allowed us to work with EHR phenotyping experts on campus to develop and validate a database that we think will be a valuable resource to me and others in the DRC.

Do you believe this award helped develop you professionally? If so, how?

Absolutely. I had never participated first-hand in developing and validating phenotype algorithms

using electronic health record data. I gained valuable experience collaborating with informaticians and learned a lot about the challenges, limitations, and best practices for working with EHR data for high-quality epidemiology research. Separate from the specifics of my project, I met people through the DRC who I might not have met otherwise, including potential future collaborators and people tackling similar types of data curation challenges. Connecting with others in the diabetes research community on campus will certainly be important for me as I move forward in my career.

What advice would you give to yourself in April 2020, when you first received this award? And/or What were the major lessons you learned in the last 2 years?

I think I'd advise myself to be a little less ambitious and a little more patient. Creating new resources – like the research database that we worked on – is painstaking, time-consuming work if done right. As I mentioned above, I learned a lot about informatics, creating research quality data from electronic health record data, and things I should keep in mind when evaluating others' work using similar types of data.

LEAD CENTER OFFERS OPPOTUNITIES FOR DIABETES RESEARCH COLLABORATION - AN INTERVIEW WITH DIRECTOR, DR. DANA DABELEA

Lifecourse Epidemiology of Adiposity & Diabetes (LEAD) Center
colorado school of public health

Can you tell us about yourself (personal, educational, leadership, research history)?

I was born and raised in western Romania. I trained in medicine at the University of Medicine and Pharmacy in Timisoara, Romania (1990), completed a residency in internal medicine, diabetes and metabolic diseases (1994), and a PhD in clinical sciences (1997). Having served several years as junior faculty in Internal Medicine and Diabetes in Timisoara, Romania, I undertook an NIH Fellowship in diabetes epidemiology with the NIDDK Epidemiology and Field Studies Branch in Phoenix, AZ (1997-1999). It was there that I was one of the first to call attention to the rapidly increasing prevalence of type 2 diabetes in American Indian youth, which we later confirmed in all US populations. I then accepted an appointment as Assistant Professor in the Department of Preventive Medicine, in the CU School of Medicine (SOM) in 2001. I was promoted to Associate Professor with tenure in the SOM in 2008, the same year that the new Colorado School of Public Health (ColoradoSPH) transferred the prior Department, now the Department of Epidemiology. I was promoted to full professor in 2011, served as Associate Dean for Faculty Affairs in the ColoradoSPH for 4 years (2012-2015), and became endowed professor (2013), Center Director (2015) and Distinguished University Professor (2021).

What are the primary goals, mission and vision of the LEAD Center?

In 2015 the Lifecourse Epidemiology of Obesity and Diabetes (LEAD) Center was established as a partnership between the ColoradoSPH, Department of Pediatrics, Children's Hospital, and the Chancellor's office and I became the first director. The Center's mission is to conduct the highest quality research in order to better understand the environmental, genetic and developmental determinants of obesity, diabetes and related conditions throughout the lifecourse, by bringing together multidisciplinary teams to effectively study the complex processes, and educate the next generation of researchers and practitioners who can translate the findings into preventive action. The vision of the LEAD Center is to foster a future where healthy pregnancies, infants, youth and adults result from knowledge of the optimum environment for growth and development. LEAD became a Chancellor's approved campus-wide Center in 2016. To date, the LEAD Center has 28 active grants led by 14 PIs, and over 60 members comprising faculty, staf and trainees. While the center is administratively housed within the ColoradoSPH, the large number of our core and affiliated investigators are in the SOM, especially Department of Pediatrics, in both clinical and basic sciences divisions.

What is the most important thing the LEAD center is working on right now, and how are you making it happen?

Our most important focus areas right now are:

- Quantifying the burden (prevalence, incidence, trends) and understanding the clinical course (processes of care, quality of life, morbidity and mortality) of youth and young adult- onset type 1 and type 2 diabetes in Colorado and the US, through multicenter studies like SEARCH and DiCAYA, including a focus of COVID19 pandemic effects of diabetes risk and evolution.
- Studying the developmental origins of major pediatric outcomes (including obesity, youth-onset dysglycemia and type 2 diabetes, asthma, food allergies, neurodevelopment, behavioral health), through studies like Healthy Start (phases 1-4), EPOCH (phases 1-3) and our participation in the ECHO (Environmental Influences and Child Health) Consortium
- Studying the long-term effects of prediabetes and type 2 diabetes on diabetes-related outcomes, quality of life and Altzheimer Disease and Related Dementias (ADRD), through our participation in the Diabetes Prevention Program Outcomes Studies (DPPOS phases 1-3 and now the DPPOS-ADRD).
- Conducting and translating clinical trials into community prevention for youth (Tribal Turning Point, in American Indian Youth; The Bennett project, in rural Colorado), pregnant women (via our participation in the newly funded ERICH study) and adults (through our newly funded NextGen pre-conceptional RCT).
- Understanding and addressing disparities in obesity and diabetes in diverse and under-served groups- all our studies focus on this

- Most of our research is federally funded (NIDDK, NHLBI, NICHD, ADA, CDC). We have a talented, multidisciplinary team of core investigators, and many collaborators on campus, at other institutions in Colorado, nationally and internationally, who are leveraging our human cohorts, data and sample repositories, and our wonderful and innovative ideas.

How has the LEAD center evolved since it was first created?

While obesity, diabetes and their immediate consequences were, and continue to be, important areas of research focus, over the last 7 years the center's research has expanded substantially to include, among others, cardio-vascular heath, neurodevelopment and brain development, lung development, food allergies, asthma, and other respiratory outcomes, behavioral and mental health, and healthy aging. In addition, while the initial focus was primarily on understanding the biological underpinnings of obesity and diabetes from a developmental perspective, including focused mechanistic studies, and integration with population "omics" data, more recent efforts have added comprehensive assessments of "above the skin" environmental exposures, such as air pollution, chemicals, built environment and social determinants. We conduct observational studies, randomized clinical trials, surveillance work, implementation science, 'omics studies and basic science projects, nested within our human cohorts.

Who should DRC members reach out to if they are interested in hearing more/collaborating?

They can reach out to: Wei Perng, PhD, LEAD Associate Director for Research Training, who can advise about ongoing studies and potential collaborations; Anna Bellatorre, LEAD Assistant Director for Data Operations, who can advise about policies and procedures related to data and sample access; Drs Katherine Sauder, PhD, LEAD Deputy Director, or myself, for general questions or specific ideas. Please stop and visit us in the new Anschutz Health and Sciences Building, 1st floor.

Is there anything else that the DRC community should know about LEAD?

LEAD serves as data and biosample repository for the large, multi-center SEARCH study. These resources are available to all investigators who are interested in developing manuscripts, pilot grants, training grants, research grants, and even program projects that may continue the life of the SEARCH study beyond its first 20 years of initial NIDDK/CDC funding.

Click Here to Learn more about the LEAD Center

CONGRATULATIONS MARIA HANSEN, RECIEPENT OF DIABETES RESEARCH CONNECTION GRANT

Project Summary: The use of human pluripotent stem cells (hPSCs) for the generation of b-like cells (sBCs) holds great promise for transplantation therapies for type 1 diabetes. However, while sBCs are believed to present as a homogenous population, our single cell RNAseq data suggests distinct sBC populations that separate mature sBCs from immature sBCs.Interestingly, Uncoupling Protein 2 (UCP2) expression is highly increased in data sets comparing immature to mature sBC cell populations at the transcript level. Immunofluorescence analysis shows UCP2 protein only in immature, but not in mature sBCs nor cadaveric human b-cells. Previously UCP2 has been described as a gatekeeper of the metabolic switch from glycolysis to oxidative phosphorylation (OXPHOS), also a key event in the functional maturation of b-cells. In order to investigate the role of UCP2 in human beta-cell development and function, we have generated homo- and heterozygous UCP2 knockout hPSC lines using CRISPR/Cas9. Utilizing RT-qPCR, flow cytometry and IF, we will characterize the UCP2 KO hPSCs at multiple stages throughout the beta-cell differentiation. Preliminary data shows increased calcium activity at both low and high glucose in the UCP2 KO sBCs. Strikingly, this is consistent with the phenotype seen in patients with mutations in the UCP2 gene who develop congenital hyperinsulinism. We will evaluate the functionality of the UCP2 KO sBCs by performing dynamic glucose-stimulated insulin secretion (dGSIS) assays, live-cell calcium imaging, as well as mitochondrial DNA copy number and insulin content analysis. We will examine the effects on metabolism using Seahorses analysis.

CONGRATULATIONS, ALI SHILLEH! RECIPIENT OF THE HIRN 2022 TRAINEE SCHOLARSHIP

HIRN 2022 Trainee Scholarship Recipients

Gregory Golden, PhD
University of Pennsylvania
Postdoctoral Researcher
CMAI (PI: Betts)

Abhishek Kulkarni, PhD
Univ. Florida
Postdoctoral Research Fellow
CBDS/CHIB (PIs: Mirmira/Brusko)

Olha Melnyk, PhD
Indiana University
Postdoctoral Research Fellow
CBDS (PI: Linnemann)

Ali Shilleh
Univ. Colorado Anschutz Med Campus
Graduate Student
CBDS (PI: Russ)

RUN FOR THE RING - ANNUAL BDC 5K AN OVERHWLEMING SUCCESS

The morning of Saturday, August 13, was full of fun family time, teamwork and above all, a passion to find a cure for diabetes.

Thank you to everyone who attended and participated, and a very special shout out to the Research team who has kept up with winning the "Largest Team" award!

Click Here to Access All Event Photos

ANNOUNCING THE FALL 2022 RIP SERIES- WE HOPE TO SEE YOU THERE ON MONDAYS!

Research in Progress Series
FALL 2022

Mondays at 12:00pm
BDC Main Conference Room 2104

Monday, September 12, 2022	Prashanth Francis, MD PhD
Monday, September 19, 2022	Dylan Sarbaugh
Monday, September 26, 2022	Mia Smith, PhD
Monday, October 3, 2022	James Scott-Browne, PhD
Monday, October 10, 2022	Yan Li, PhD (Guest Speaker)
Monday, October 17, 2022	Srividhya Iyer, PhD
Monday, October 24, 2022	Jordan Jacobelli, PhD
Monday, October 31, 2022	Laurel Messer, PhD
Monday, November 7, 2022	Kalie Tommerdahl, MD
Monday, November 14, 2022	Roberto Castro-Gutierrez
Monday, November 21, 2022	Thanksgiving Break
Monday, November 28, 2022	City of Hope Diabetes Research Symposium
Monday, December 5, 2022	Rachel Friedman, PhD
Monday, December 12, 2022	Yong Kim, PhD
Monday, December 19, 2022	Holiday Break
Monday, December 26, 2022	Holiday Break

DRC SPEAKER SERIES ANNOUNCED FOR 2022-2023 ACADEMIC YEAR, PLEASE JOIN US!

All seminars will take place in the Shore Family Auditorium unless otherwise noted in green.

2022-2023 DRC Diabetes Speaker Series
Barbara Davis Center for Diabetes Series Roster

Seminars will take place in person on Fridays at 12pm MT
All seminars will have a link provided for registration.
For administrative assistance: Christy Vasey, christy.vasey@cuanschutz.edu , 303-724-9787

Friday, September 9, 2022 Fulginiti Pavilion	Bethany Cummings, DVM, PhD Associate Professor	*Department of Surgery* *UC Davis*
Friday, September 23, 2022	Dirk Homann, MD Professor	*Icahn School of Medicine Mount Sinai*
Friday, October 7, 2022	Sarah Lessard, MSc, PhD Assistant Professor	*Joslin Diabetes* *Harvard Medical School*
Friday, October 21, 2022	Marissa Brissova, PhD Research Professor of Medicine	*Director, Islet Procurement and Analysis Core* *Director, Human Islet Phenotyping Program of IIDP* *Vanderbilt University*
Friday, November 4, 2022	Rachel Bonami, PhD Assistant Professor of Medicine	*Division of Rheumatology and Immunology* *Pathology, Microbiology, and Immunology* *Vanderbilt University Medical Center*
Friday, November 18, 2022	Matthew L. Bettini, PhD Associate Professor	*Department of Pathology* *Division of Microbiology and Immunology* *University of Utah*
Friday, December 2, 2022 Fulginiti Pavilion	TBD	
Friday, January 6, 2023	Leonardo M.R. Ferreira, PhD Assistant Professor	*Microbiology and Immunology* *Regenerative Medicine and Cell Biology* *Medical University of South Carolina*
Friday, January 20, 2023	Rebecca L. Hull, PhD Research Professor	*Director, Cellular and Molecular Imaging Core* *Division of Metabolism, Endocrinology and Nutrition* *University of Washington*
Friday, February 3, 2023	TBD	
Friday, February 17, 2023	Todd Brusko, PhD Professor	*Department of Pathology, Immunology and Laboratory Medicine* *University of Florida Diabetes Institute (UFDI).*
Friday, March 3, 2023	Hubert M. Tse, PhD Professor	*Comprehensive Diabetes Center* *Heersink School of Medicine* *University of Alabama at Birmingham*
Friday, March 17, 2023	**BDC Diabetes Day Symposium** Keynote Speaker: Mark Atkinson, PhD Professor	*Director, UF Diabetes Institute* *Departments of Pathology and Pediatrics* *University of Florida*
Friday, March 31, 2023	Megan Levings, PhD Professor	*Department of Surgery* *Lead, Childhood Diseases* *BC Children's Hospital Research Institute*
Friday, April 14, 2023	Samuel Klein, MD Professor	*Chief, Division of Geriatrics and Nutritional Science* *Washington School of Medicine in St. Louis*
Friday, April 28, 2023	Joana Almaca, PhD Research Assistant Professor	*University of Miami Miller School of Medicine*
Friday, May 12, 2023	Denise Feig, MD MSc, FRCPC Professor	*Obstetrics & Gynecology, and Health Policy, Management & Evaluation* *Head, Diabetes & Endocrinology in Pregnancy Program* *Mt Sinai Hospital, Toronto, Canada*

JOB POSTINGS

UC San Diego School of Medicine

Assistant Professor - Chancellor's Joint Initiative: Pharmacology/Chemistry & Biochemistry

The focus of this search is in the broad areas of Metabolism, Mitochondria, and Human Diseases. Successful candidates will be expected to have a strong record of research accomplishments and funding and an innovative plan for their future research.

Click Here to see the full job description & posting

NIH National Institute of Diabetes and Digestive and Kidney Diseases

The NIDDK currently has two open positions for **Program Directors** in the Division of Diabetes, Endocrinology and Metabolic Diseases (DDEMD) at NIDDK. One is for Diabetes Clinical and Translational Research and the other for Diabetes Clinical Research.

Click Here to read more about the Program Director for Diabetes Clinical & Translational research

Click Here to read more about the Program Director for Diabetes Clinical Research

OPPORTUNITIES FOR FUNDING

CAIANDTR Pilot & Feasibility Program provides support for early-stage investigators (ESIs) committed to conducting translational research related to diabetes in American Indian and Alaska Native (AI/AN) populations

colorado school of public health

Investigators may be affiliated with any institution that can receive NIH funds. During this 18-month research and training program, funded investigators will complete and publish a secondary analysis project (Months 1-12) and develop a grant application seeking larger-scale funding for their research efforts (Months 13-18).

Application & Review Timeline

- Call for Applications Opens: July 5, 2022
- **Interest Form Due: September 19, 2022**
- **Complete Application Due: October 3, 2022**
- Response from Reviewers: October 24, 2022
- Written Response to Review: November 7, 2022
- Notification of Award: November 14, 2022
- Project Period: December 1, 2022 – May 31, 2024

Detailed information about this opportunity is available on the CAIANDTR website and in the Request for Applications.

Stakeholder Engagement Innovation Center for Advancing Health Equity in Type 2 Diabetes Research (SEIC-T2D)

NIH National Institute of Diabetes and Digestive and Kidney Diseases

This award aims to provide highly specialized research resources to accelerate use of appropriate methods and meaningful and equitable engagement of individuals from and communities of diverse backgrounds and sectors in developing the research priorities and

activities that involve them, particularly NIH designated health disparity populations, underserved communities, and those with the highest proportion of diabetes-related morbidity and mortality.

Letter of Intent due September 26, 2022

The SEIC-T2D will provide highly specialized research resources to support field and clinical investigators by fully embedding communities, patients, and other stakeholders into the full spectrum of research activities through expert consultations and education in principles and methods of community-engaged research. The SEIC-T2D will also establish a network consisting of multidisciplinary research investigators, including those from underrepresented groups, with expertise in diabetes mellitus and community-engaged methods, community experts with lived experiences, and representatives of various health and other organizations deemed essential for addressing disparities and advancing health equity in T2D prevention and treatment.

If there are any questions, please contact
Dr. Beena Akolkar (akolkarb@extra.niddk.nih.gov) or
Dr. Shavon Artis Dickerson (shavon.artisdickerson@nih.gov).

Notice Number: RFA-DK-22-001
Release Date: June 10, 2022
Application Due Date: October 26, 2022
Expiration Date: October 27, 2022

Click here to access the full RFA

Mass Spectrometric Assays for the Reliable and Reproducible Detection of Proteins/Peptides of Importance in Type 1 Diabetes (T1D) Research (U01 Clinical Trial Not Allowed)

National Institute of Diabetes and Digestive and Kidney Diseases

This Funding Opportunity Announcement (FOA) encourages applications from institutions/organizations proposing the development and/or validation of targeted mass spectrometric assays (e.g. Multiple Reaction Monitoring) for proteins and peptides of primary interest to the type 1 diabetes research community [e.g. glucagon and other pro-glucagon derived peptides, C-peptide, insulin, pro-insulin, Glycated CD59, Islet Amyloid Polypeptide (IAPP), Chromogranin A (CgA), and chromogranin B (CgB)]. The proposed assays should be highly reproducible, easily transferable to other laboratories, and validated in human plasma or serum. This might also require the development of appropriate community standards, and reference materials when not already available.

Letter of Intent due September 26, 2022

Notice Number: RFA-DK-21-031
Release Date: July 14, 2022
Application Due Date: October 26, 2022
Expiration Date: October 27, 2022

Click here to access the full RFA

Human Islet Research Network - Consortium on Targeting and Regeneration (HIRN-CTAR) (U01 Clinical Trial Not Allowed)

National Institute of Diabetes and Digestive and Kidney Diseases

This Funding Opportunity Announcement (FOA) invites applications for the Consortium on Targeting and Regeneration (CTAR) that supports the development of innovative strategies to increase or protect functional human beta cell mass in patients with Type-1 Diabetes (T1D) through controlled manipulation of beta cell replication or islet cell plasticity, reprogramming of non-beta cells into beta-like cells, or shielding of residual beta cell mass from the autoimmune environment. CTAR is part of the Human Islet Research Network (HIRN)..

Letter of Intent due September 26, 2022

Notice Number: RFA-DK-22-009
Release Date: July 13, 2022
Application Due Date: October 26, 2022
Expiration Date: October 27, 2022

Click here to access the full RFA

Understanding the Pathophysiology and Clinical Course of New-Onset Diabetes Following COVID-19 (U01 Clinical Trial Not Allowed) (RFA-DK-22-016)

National Institute of Diabetes and Digestive and Kidney Diseases

This Funding Opportunity Announcement invites multiple Program Director/Principal Investigator (multi-PD/PI) applications to conduct a study to establish a longitudinal cohort of individuals who developed diabetes following SARS-CoV-2 infection to understand the pathophysiology and clinical course post-COVID-19 diabetes. The cohort must include children and adults and reflect the geography and demographics of COVID-19 in the U.S. There must be an appropriate

comparator population recruited and followed. The goals are to determine the contribution of: 1) specific pathophysiologic pathways; 2) overall health impact of the pandemic; 3) COVID-19 severity, and 4) COVID-19 treatment upon excess new onset diabetes from SARS-CoV-2 infection and response to diabetes therapy.

Letter of Intent due November 20, 2022

Notice Number: RFA-DK-22-016
Release Date: July 13, 2022
Application Due Date: December 20, 2022
Expiration Date: December 21, 2022

Click here to access the full RFA

NIH NIDDK

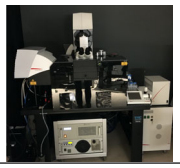
Click Here to see all current NIH NIDDK RFAs

University of Colorado Anschutz Medical Campus

Click here to see current CU INTERNAL Limited Submission Funding Opportunities

Have you considered using a DRC core service?

The DRC contains four biomedical cores that provide services and resources to DRC investigators. These cores are designed to facilitate and broaden CU Denver DRC research by expanding access to shared equipment, enhancing availability and training for emerging technologies, and allowing scientists to have greater access to clinical tissue and data.

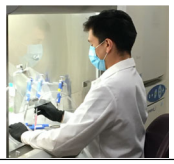


Cell and Tissue Analysis
Access to state-of-the-art multi-color confocal microscopy, flow cytometry analysis and cell sorting services, and expert assistance for mass cytometry and ion-beam imaging technologies.

Learn More about Cell & Tissue Analysis

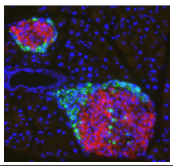
Clinical Resources
Access to an integrated, campus-wide, research registry enabling informatics-based clinical studies.

Learn More about our Clinical Resources



Disease Modeling
Access and training in stem cell technologies for in vitro human disease modeling of diabetes & molecular core services.

Learn More about Disease Modeling



Tissue Procurement & Processing
Access to islet isolation and transplantation services along with access to commonly used cell lines and diabetes-related histology techniques.

Learn More about Tissue Procurement & Processing

Want us to feature you or a colleague on an upcoming DRC newsletter? Have an important research update?

Click Here to Submit a Story to the DRC Monthly Newsletter

Click Here to Follow us on Twitter

Please remember to acknowledge support from the University of Colorado Diabetes Research Center and our associated cores by referencing NIDDK grant #P30-DK116073 in your presentations and publications.

Click here to visit the DRC Website

Click Here to Subscribe to this Newsletter

Please contact Lisbel.Woods@CUAnschutz.edu with any questions or feedback about this newsletter