

#### **AGENDA**

#### "Progress through Collaboration"

- Welcome and Introduction: Thomas Flaig, MD
- Central Research Administration
- Metrics of research on CU Anschutz Campus
- Sponsored research funding
- Research response to COVID
- The richness of our research community
- Special projects and future plans
- Questions



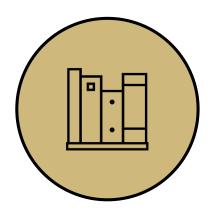


#### MY BACKGROUND



- MD from the University of MN
- 2003 Oncology Fellowship UCHSC (9th and Colorado)
- 2006 Joined the faculty in medical oncology
- 2011 Medical Dir Cancer Trials Office
- 2015 Assoc Dir CU Cancer Center
- 2016 Chief Clinical Research Officer UCHealth
- 2016 Assoc Dean for Clinical Research SOM
- Started in role as Vice Chancellor March 1, 2020
  - Served as Interim VCR (Aug 2019 Feb 2020)





# CENTRAL RESEARCH ADMINISTRATION







#### **CENTRAL RESEARCH ADMINISTRATION**

#### Serves a large and wide-ranging research community



5000 faculty1500 PRAs300 post docs



2 million+ square feet of research space



>2000 clinical trials



>5000 sponsored projects in FY 2020





# OFFICE OF THE VICE CHANCELLOR FOR RESEARCH CENTRAL ADMIN ORGANIZATION



Alison Lakin, PhD
Associate Vice Chancellor
Regulatory Compliance



Jori Leszczynski, DVM
Assistant Vice Chancellor
Laboratory Animal Research (OLAR)



Amy Gannon *via EVCAF*Associate Vice Chancellor, Controller
Financial services, Bursar and
Grants and Contracts (OGC)







#### CENTRAL RESEARCH ADMINISTRATION

#### Provides key support

- Provides required institutional structure
  - IBC, IACUC, radiation safety, hazardous waste, safety audits
  - IRB, HIPAA, research privacy, COI, Export Control, FDA applications
  - OLAR, animal husbandry, veterinary services
  - Research Integrity Oversight
- Maintains key accreditations
  - AAALAC, AAHRPP







# ASSOCIATE VICE CHANCELLOR OF BASIC SCIENCES RESEARCH (AVCBSR)

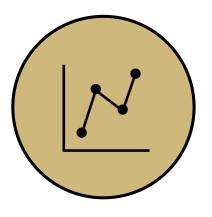


Lori Sussel, PhD

- October 2020
- Recognized researcher (nationally & internationally)
- Professor, Pediatrics and Cell & Developmental Biology
- Director, Diabetes Research Center
- Barbara Davis Diabetes Center
  - Director of Basic and Translational Research
  - Sissel and Findlow Family Chair







# METRICS OF RESEARCH







### CENTRAL RESEARCH ADMINISTRATION

#### Supporting research



3124

proposals/grants

12+ per business day



1,619

research contracts from other entities



1,131

subcontract to other entities







### CLINICAL RESEARCH / IRB SUPPORT

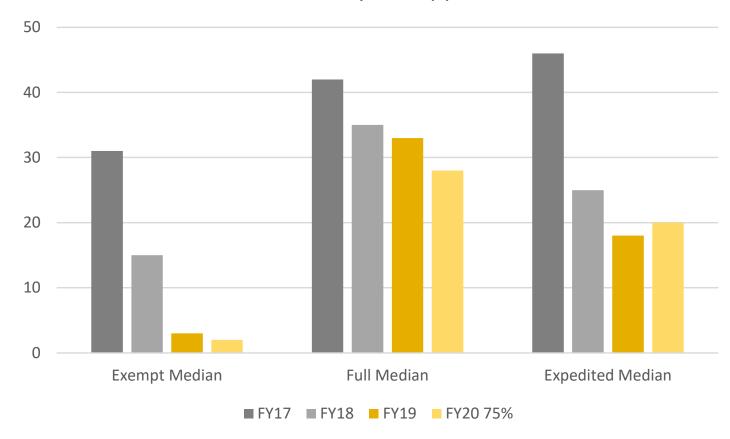
- Zen Desk (help desk) 17,000+ contacts annually
- Training 25 courses in research education with 800+ attendees
- IND/IDE active applications with FDA 94
- 5796 active projects with IRB approval
  - 2241 open clinical trials





## **COMIRB TIMELINES**

#### Median Days to Approval









### **ENVIRONMENTAL HEALTH AND SAFETY**



**550** 

lab inspections annually



116

tons of regulated medical waste





## **OLAR**



**95** total personnel



Oversees **100,000** sq feet Increases to **130,000** with current construction



Provides research support to over **320** Investigators covering **530** IACUC protocols





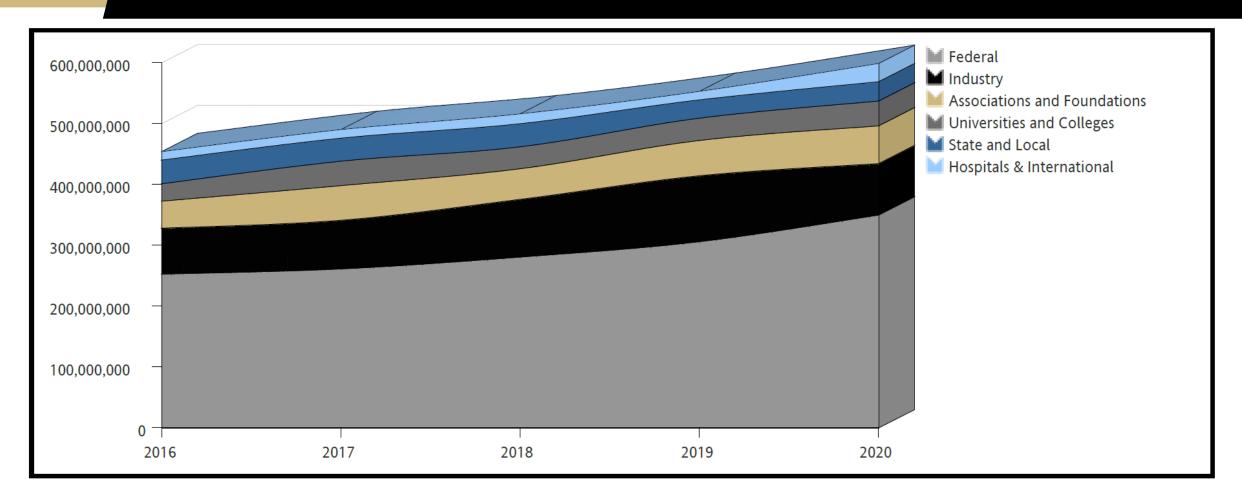
# SPONSORED RESEARCH FUNDING







# CAMPUS AWARDS BY SPONSOR TYPE

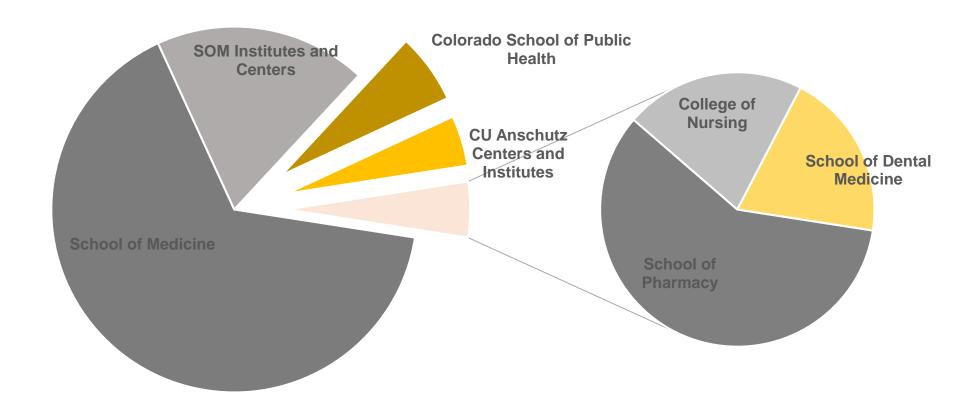








# CAMPUS FUNDING CONTRIBUTIONS



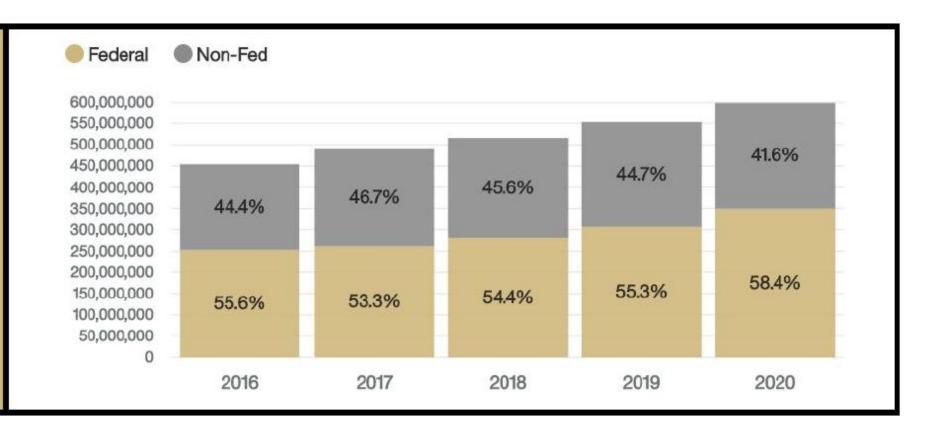






## PROPORTION OF FEDERAL FUNDING



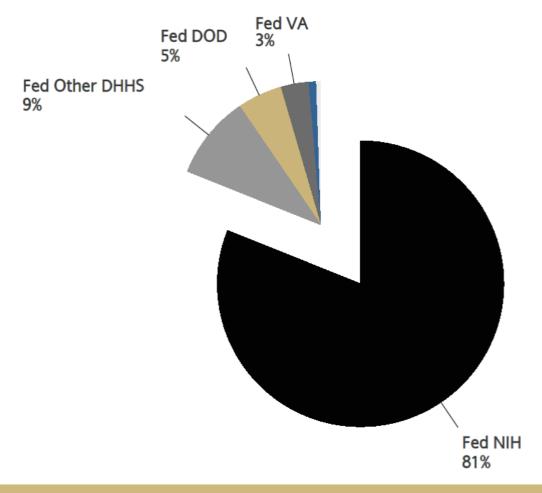






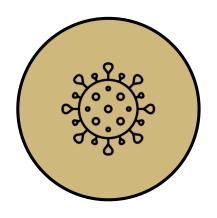


# 2016-2020 FEDERAL SPONSORS









# RESEARCH RESPONSE TO COVID







#### **COVID-19 TIMELINE**

- March 16 moved to critical access only due to COVID-19
- April 24 announced laboratory research reconstitution plan
- May 15 developed clinical research prioritization framework
- May 18 moved to phase 2 of research reconstitution
- June 5 lab-based researchers at 50% of baseline levels
- June 19 lab-based personnel over 50% shifts utilized
- July 2 community research framework finalized
- November 20 CU Anschutz elevated to COVID Level Red







### OUR COLLECTIVE RESPONSE

#### Gratitude to the entire research community

- Prioritizing our safety and maintaining our mission
- Adaptation and flexibility
- A communal spirit of purpose and teamwork
- Ongoing vigilance and focus







#### **ENVIRONMENTAL HEALTH AND SAFETY**

#### EHS is

#### **DIRECTOR**

**ETHAN CARTER** 

#### **DIVISION MANAGERS**

**CODY COBURN** 

**Occupational Health** 

**MARCIA FINUCANE** 

**Biological Safety** 

**JERMAN LOPEZ** 

**Hazardous Materials** 

**ALISON MCGRATH** 

Research Safety &

**Industrial Hygiene** 

**RIAD SAFADI** 

**Radiation Safety** 

+ 25 FULL-TIME STAFF

- During COVID, the team has added additional responsibilities
  - Established and managed the COVID health screening check points which have screened 370,000 people since May 11
  - Developed new biosafety guidelines in response to the pandemic
  - Added Infection Prevention Specialist
    - Conducted contact tracing for 1622 individuals
  - Added a COVID testing site to better serve the CU Anschutz University Community







#### REGULATORY COMPLIANCE RESPONSE

- June of 2020
  - First COVID focused clinical trial opened in 10 days from submission
- 30 emergency INDs for COVID-19 treatments
- Coordinated clinical trial prioritization with campus partners







# 2020 CCTSI COVID-19 RELATED RESEARCH PROGRAM AWARDS



#### J. David Beckham, MD

 A prospective, observational cohort trial for the treatment of hospitalized COVID19 patients with high-titer anti-SARS-CoV2 convalescent serum



#### Anna Maw, MD

 Rapid implementation of lung ultrasound in the management of hospitalized adults with COVID-19



#### Brian Montague, DO

Prospective Identification of SARS-CoV2 Infection in Healthcare Workers



#### David Prawel, PhD

 Additive Manufacturing of Certified PPE: A Path Towards Mass Production



#### Ron Sokol, MD

- Assistant Vice Chancellor for Clinical and Translational Science
- Director, Colorado Clinical and Translational Sciences Institute
- CCTSI Town Hall Dec 15, 2020 12:00 PM







### **VIDEO**

Researchers at the CU Anschutz Medical Campus have been working countless hours responding to the COVID-19 pandemic.

Here are a few insights on current research efforts.



Click here

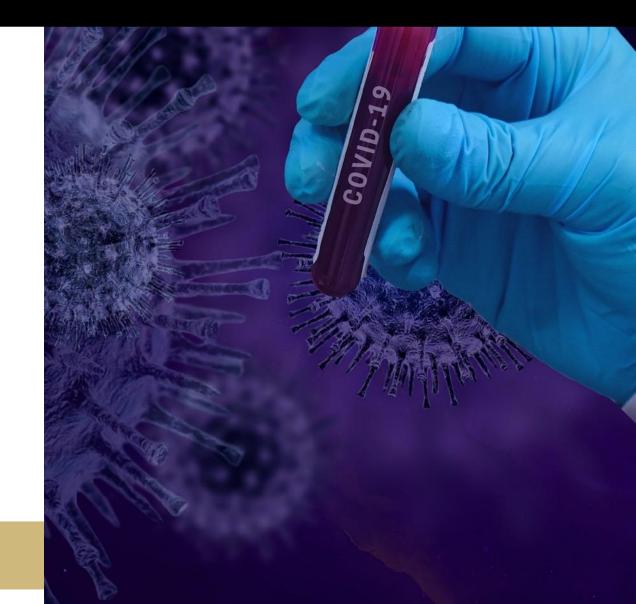






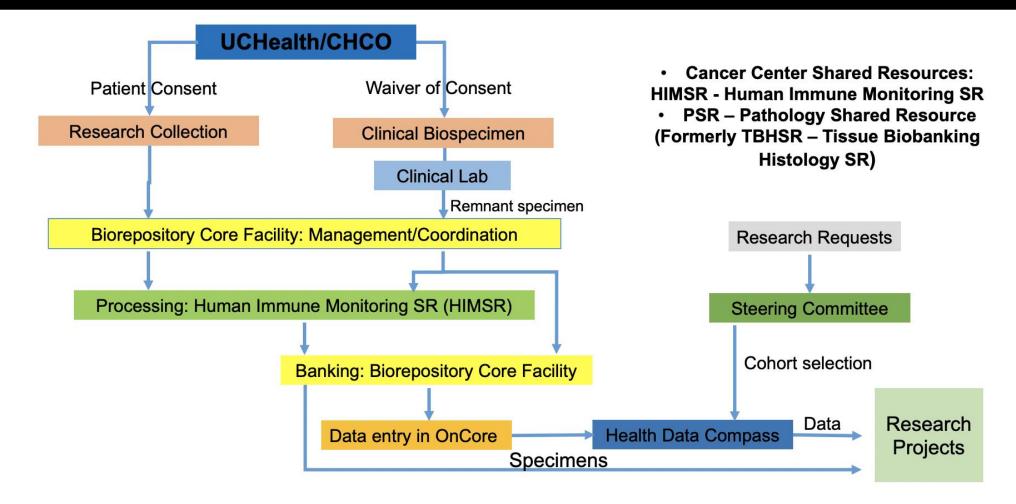
#### **COVID BIOBANK**

- CU Anschutz COVID biobank launched in March of 2020
- Pandemic posed special challenges:
  - Logistical challenges of patient access,
     PPE considerations, pandemic dynamics
- Biobank to serve as an institutional resource for collection and distribution of COVID patient samples
- Collecting both prospective and retrospective samples
- Realtime sample processing for prospective samples (PBMC isolation, etc)





## COVID BIOBANK LOGISTICS









#### COVID BIOBANK TISSUE ALLOCATION COMMITTEE

#### Founding members



Eva Grayck, Chair



Peter Gottlieb



Bryan Haugen (Past chair)



Adrie Van Bokhoven



Martin Voskuil

#### Non-voting (ex officio) members



Alison Lakin



Tom Flaig



Marcia Finucane



Matthew Steinbeiss

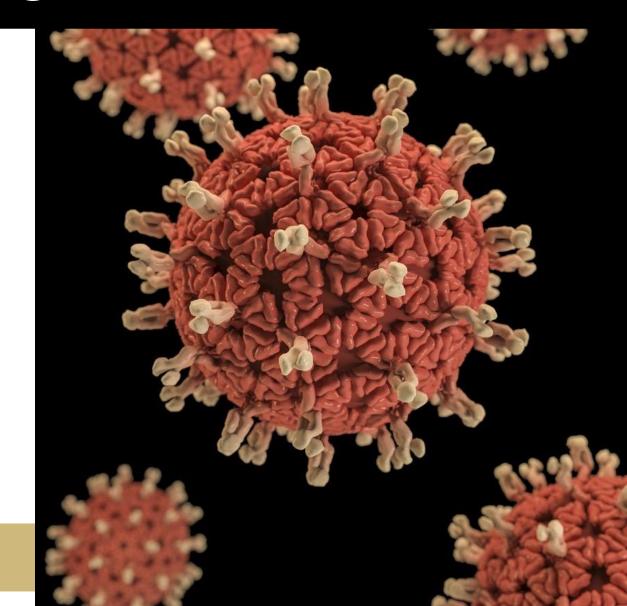






#### **COVID BIOBANK**

- Approximately 150 participants in the prospective cohort > 3000 in the retrospective cohort
- Nasal Swab (RNA/DNA) (>2,500) RNA (Nasal Swabs) COVID+
- (>2,500) DNA Germline (>1,000)
- Whole Blood (DNA, PBMC, BC) (>3,500)
- Plasma (>2,500)
- Serum (>1,500)
- Urine (~600)
- 3500 unique samples distributed from the biobank





#### **BIOBANK: THANK YOU... A PARTIAL LIST**

- Biorepository Core Facility
- Cancer Center Shared Resources:
- Human Immune Monitoring Shared Resource (HIMSR)
- Pathology Shared Resource (PSR), (Formerly TBHSR Tissue Biobanking Histology SR)
- Department of Pathology
- UCHealth Clinical Laboratory
- CHCO Clinical Laboratory
- CReST (CCSTI)- Clinical Research Support Team
- Regulatory Affairs
- CHCO Allergy and Immunology Team
- CHCO Pediatric Intensive Care Unit
- University Hospital COVID intensive units/floors
- UCH Emergency Department Biorepository
- CCPM
- Study Participants







## WEBSITE & REDCAP SURVEY LINKS

**COVID-19 Biobank Website:** 

research.cuanschutz.edu/covid19biobank

REDCap Link to request samples:

https://redcap.ucdenver.edu/surveys/?s=ALDKDYDPT7

Contact:

Matthew.Steinbeiss@CUAnschutz.edu







# COVIDome.org

# A multidimensional dataset to accelerate translational research in COVID19 through collaborative analysis









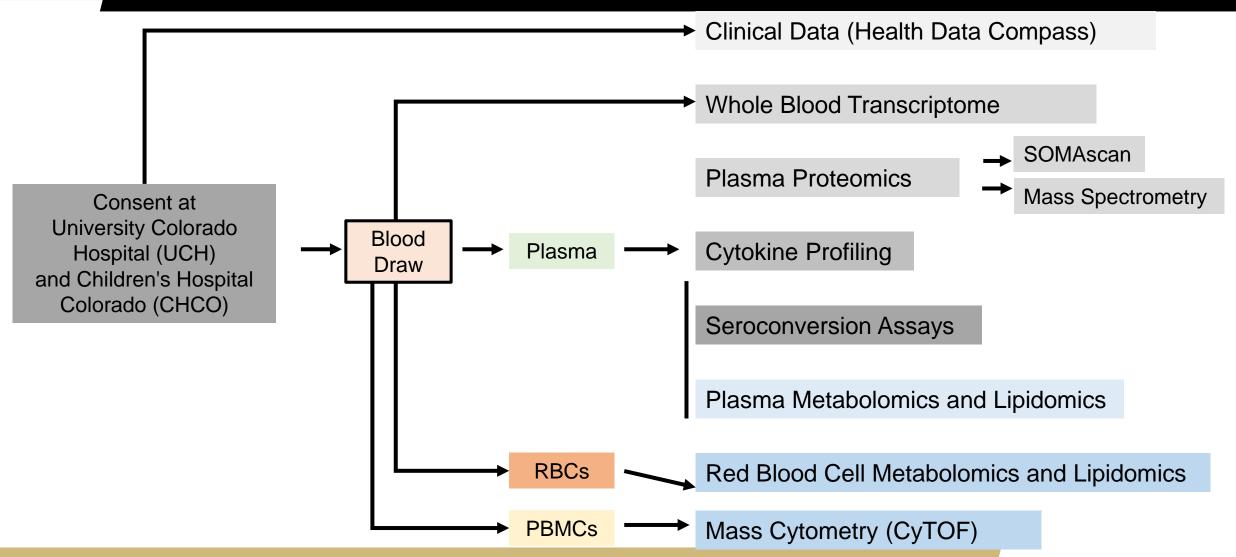








#### **DATASETS GENERATED**









#### DEFINING BIOSIGNATURES OF SEROCONVERSION

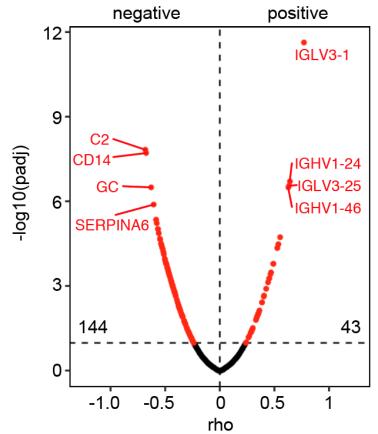
Seroconversion indices

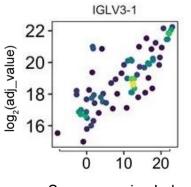
The Spearman Factory

MS Proteomics SOMAscan Proteomics MSD Cytokines CyTOF

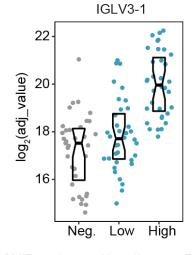
Proteins and cell types associated with seroconversion

Seroconversion vs. MS proteomics Correlation with seroconversion:





Seroconversion Index



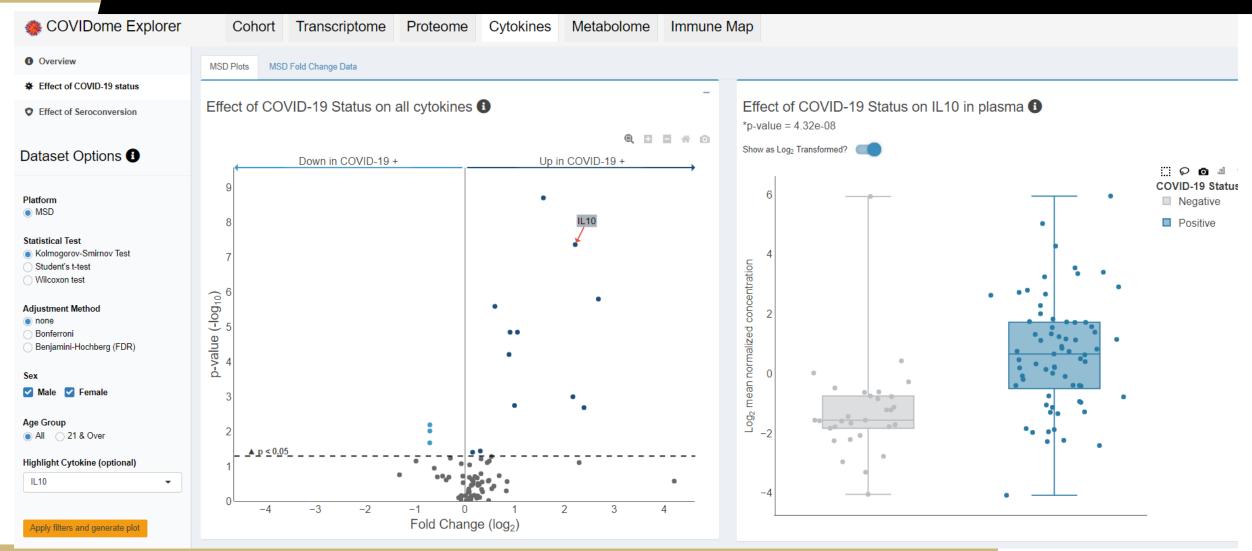
COVID status: • Negative • Positive







#### COVIDOME EXPLORER









# THE RICHNESS OF OUR RESEARCH COMMUNITY

Progress through collaboration







### TARGETING LEUKEMIA STEM CELLS



Craig Jordan Medicine



Dan Pollyea Medicine



James DeGregori Biochemistry



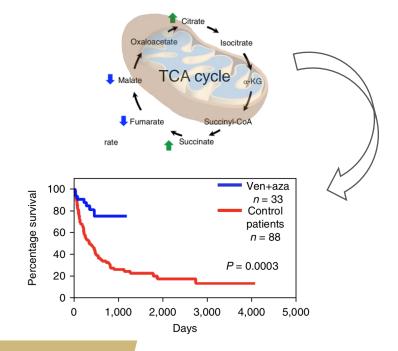
Angelo D'Alessandro Biochemistry

Impact: First therapeutic regimen shown to directly target leukemia stem cells in AML patients

- Collaboration across Departments within the cancer center
- Venetoclax FDA approved in Nov 2018
- Patients in Colorado had access to improved care 3-4 yr before everyone else

Cancer Cell, 2018 & Nature Med, 2018

Fast bench-to-bedside science at CU contributed to development of and mechanistic insight into a new therapy combination that results in deep and durable remission









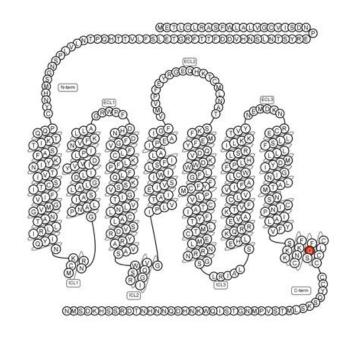
## ORO-OTO-CARDIAC SYNDROME

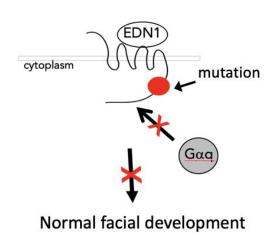
School of Dental Medicine: David Clouthier, Ph.D.

In collaboration with Children's Hospital of Philadelphia, Medical College of Georgia and George Washington University

Defining a novel birth defect syndrome was discovered along with elucidation of the functional mechanism of the mutation.







Published in the American Journal of Medical Genetics (2020)







#### **COLORADO HEALTHY START PROJECT**

- Lead by Dana Dabelea, MD, PhD
  - Colorado School of Public Health
  - LEAD Center: Lifecourse Epidemiology of Adiposity and Diabetes
- Established a longitudinal cohort of ethnically diverse pregnant women and their offspring
  - >1400 enrolled
- Findings:
  - Maternal obesity and gestational weight gain are related to infant adiposity
  - Healthy diet and physical activity are protective
- Collaborations with CoSPH, SOM, CU Boulder





Birth – 9% adiposity



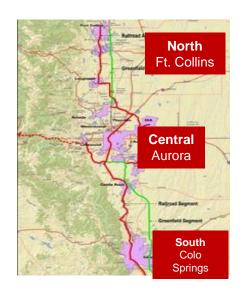




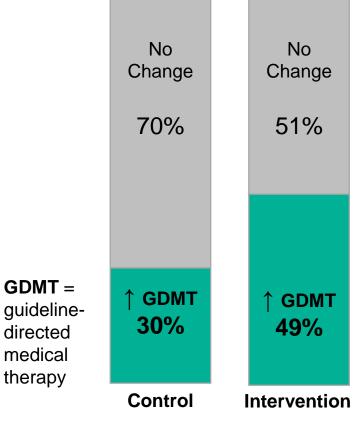
#### THE EPIC-HF TRIAL







- Sponsored by the AHA
- Larry Allen and Dan Matlock
  - ACCORDS and the School of Medicine
- Accrued 300 patients from across 3 regions of UCHealth



Presented at the AHA conf NOV 2020

directed medical

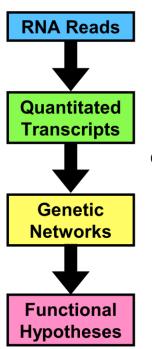
therapy







# NIDA P30 CORE CENTER OF EXCELLENCE IN OMICS, SYSTEMS GENETICS, AND THE ADDICTOME



Identification, characterization, and quantitation of expressed transcripts

Co-expression network methodology and trans-omics analyses

Incorporation of directionality to facilitate drug target identification



- Laura Saba, PhD School of Pharmacy
  - In collaboration with University of TN
  - Focused on addiction and drug abuse
  - High end computational resources
  - Bioinformatics/biostatistics collaborations



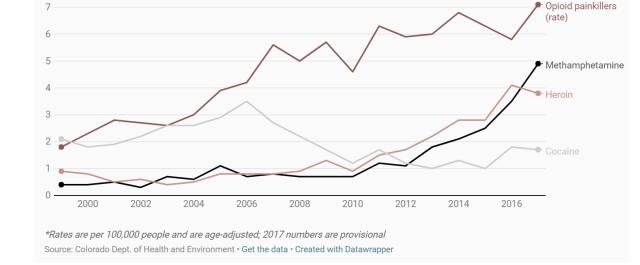




# COLORADO MEDICATION ASSISTED TREATMENT PROGRAM FOR OPIOID USE DISORDER

- Collaboration between the College of Nursing and School of Pharmacy
- Serving 20 rural counties in Colorado
- Working with local providers implementing medication-assisted treatment (MAT)
- Impacted over 600 patients in first 14 months

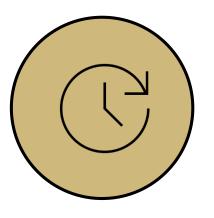
Tanya Sorrell PhD, PMHFNP Rosario Medina, PhD FNP-BC CNS Paul Cook, PhD Mary Weber PhD PMHFNP Claudia Amura, PhD, MPH Robert Valuck, PhD RPh ...And many others



Sorrell TR, et al. J Subst Abuse Treat. 2020 Jul;114:







# SPECIAL PROJECTS AND FUTURE PLANS

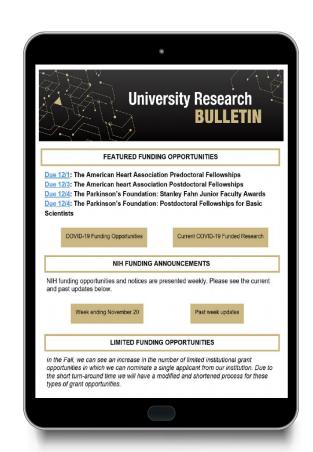




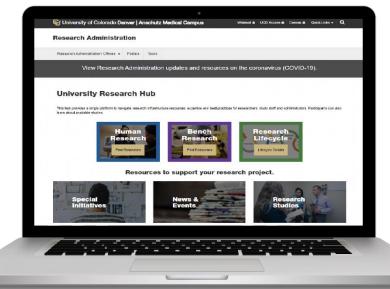


#### RESEARCH COMMUNICATIONS

- Research Bulletin launched in May
  - 13K+ recipients
- Vice Chancellor Communiques
- University Research website revamp



www.research.cuanschutz.edu









#### **CELL THERAPY OPERATIONS PROGRAM (CTOP)**

Our mission is to partner with Anschutz Medical Campus investigators and stakeholders to develop innovative Cellular Therapies and facilitate the regulatory and operational conduct of clinical trials.

#### CTOP roles include:

- Protocol Development
- Preparation and submission of IND application
- Assistance with Budget development
- Scientific Review Committee submission
- PRMS, IBC and IRB submission
- Pharmacovigilance
- Project Management



Michael Verneris, MD Scientific and Medical Director



Ben Echalier Associate Director

#### **Current team members**

Chanel Mansfield – Project Manager Cheri Adams – Pharmacovigilance Specialist Bob Kowalski – Protocol Development Specialist

www.research.cuanschutz.edu/ctop







#### **AB NEXUS PROGRAM**

#### **Program Administration**

#### **Commitment of Funds**

- Memorandum of Understanding executed
  - Anschutz, Boulder, President's Initiative
  - \$3M total commitment over 3 years
- Partnership Specialists hired at each campus

#### **Administrative Process Improvements**

- Master Collaboration Agreement executed
  - Expedited joint proposal review
  - Reduced form requirements
  - No additional F&A on first \$25k of direct costs on intercampus subcontracts



Cathy Bradley, PhD

- Assoc Dean School of Public Health
- Deputy Director CU
   Cancer Center



Amy Gannon
Associate Vice
Chancellor –
Financial Services
& Controller

AB Nexus <u>www.cu.edu/ab-nexus</u>







# RESEARCH DEVELOPMENT PARTNERSHIP SPECIALIST

- Answer questions about AB Nexus
- Help make connections with research collaborators
  - Organized research meetings between campuses
- Coordinates with counterpart at CU Boulder



Diane Ladell, MPH
Research Development
Partnership Specialist

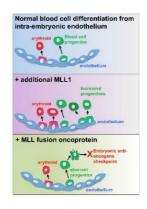
diane.ladell@cuanschutz.edu





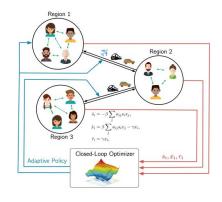


## **AWARDED NEW COLLABORATIONS (\$50K)**



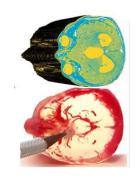
Identification of an embryonic cell-intrinsic cancer checkpoint: studying differential transcriptional effects of the proto-oncogene MLL1 versus MLL-ENL in an embryonic system

Patricia Ernst and Mary Allen

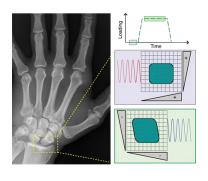


Control-theoretic design of data-driven policies for containing transmission of infectious diseases

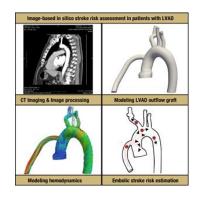
Emiliano Dall'Anese and Andrea Buchwald



Patient-specific
On-demand Presurgical Planning
Models
via 3D Printing
Robert MacCurdy and
Nicholas Jacobson,
Jeffrey Stansbury,
Simon Kim



Next-Generation
Imaging
Biomarkers for
Rheumatoid
Arthritis
Corey Neu and
Larry Moreland



Stroke Risk
Assessment for
Improved Left
Ventricle Assist
Device Therapy in
Heart Failure Patients
Debanjan Mukherjee
and Jay Pal



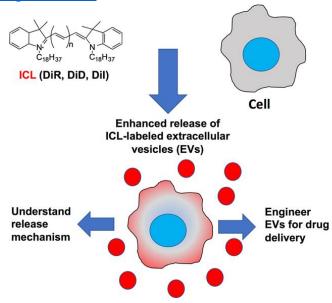




## **AWARDED EXISTING COLLABORATIONS (\$125K)**

#### **Novel Extracellular Vesicle-Based Nanoparticles for Drug Delivery**

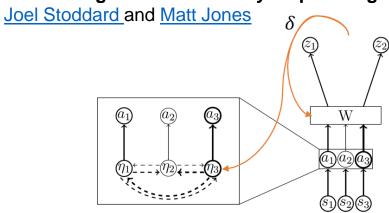
Dmitri Simberg and Jingshi Shen

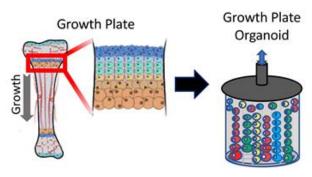


Biophysical Cues Governing Growth Plate Organization: A Computational & Experimental Approach

Stephanie Bryant and Karin Payne

Associative Threat Learning: Measuring Mechanisms for Treating Threat-based Psychopathologies





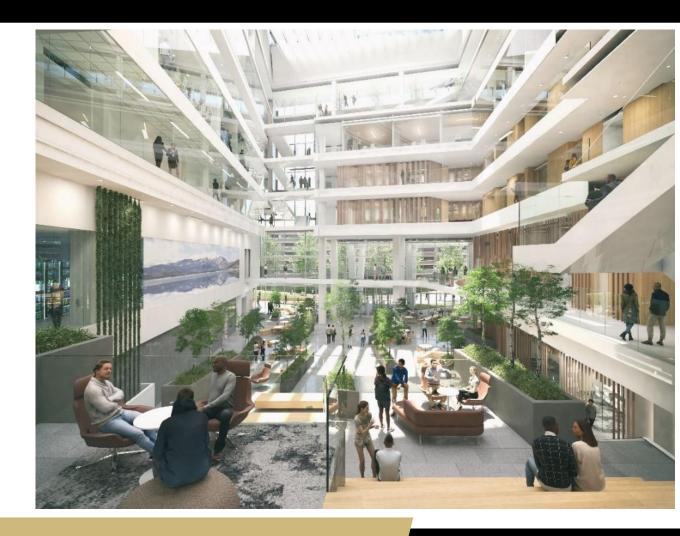






#### ANSCHUTZ HEALTH SCIENCES BUILDING

- On time and on track
  - Designed for collaboration
- Investigational drug pharmacy with the School of Pharmacy
- CCTSI space: Clinical Translational Research Centers









#### **FUTURE... WHAT'S NEXT**

- Progress through Collaboration
  - Promote intra-campus and inter-campus research
  - AB Nexus with CU Boulder extend further
- New efforts of the AVCBSR
  - Program project/team science work
  - Facilitate support for basic science endeavors
- Promote Diversity, Equity and Inclusion in our research mission







### **FUTURE... WHAT'S NEXT**

- Communication
  - Consolidate research communication across platforms
- Organization
  - Develop research council from COVID officials' structure
  - Process improvement program for central processes
  - Continue to refine and improve research support services
- Support further development with our hospital partners
- Promote innovation in all types of research





