

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



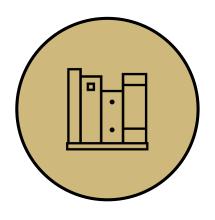


MY BACKGROUND



- 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)

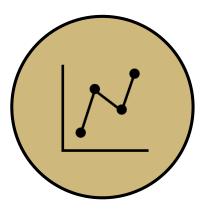


Lori Sussel, PhD

- 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

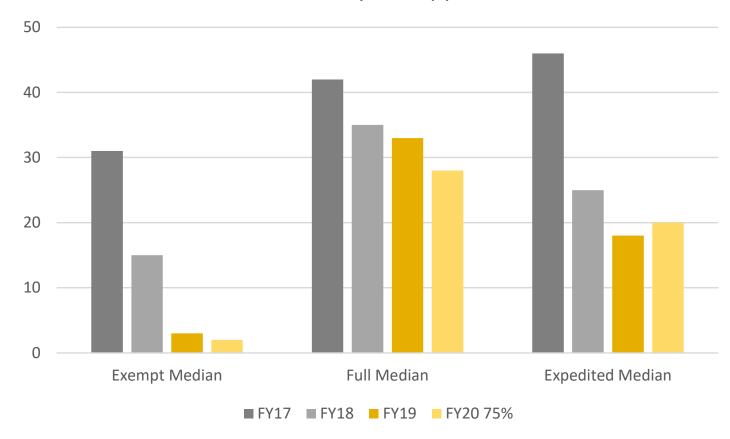
- Zen Desk (help desk) 17,000+ contacts annually
- Training 25 courses in research education with 800+ attendees
- IND/IDE active applications with FDA 94
- 5796 active projects with IRB approval
 - 2241 open clinical trials





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





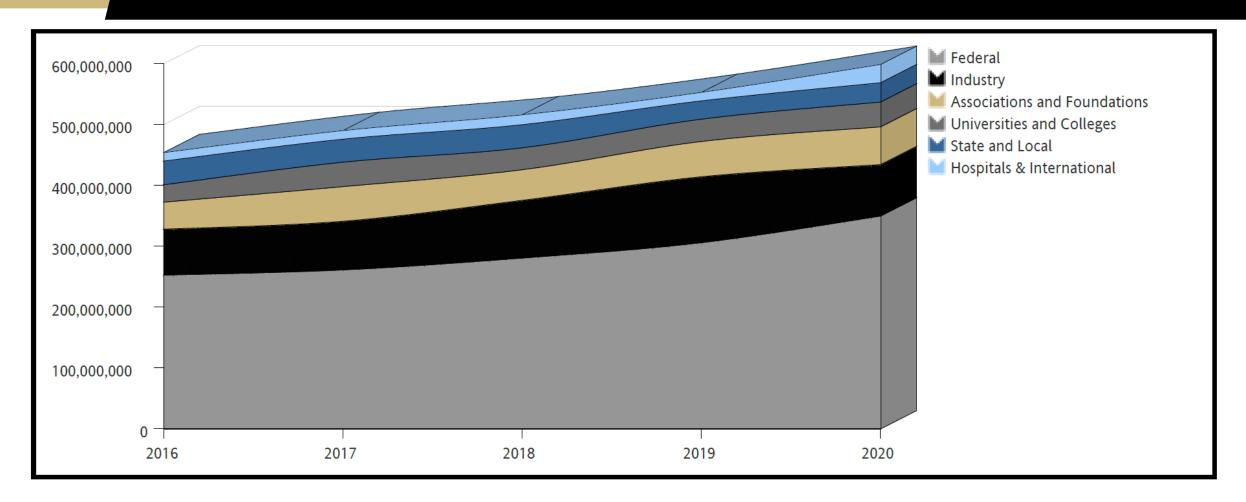
SPONSORED RESEARCH FUNDING







CAMPUS AWARDS BY SPONSOR TYPE

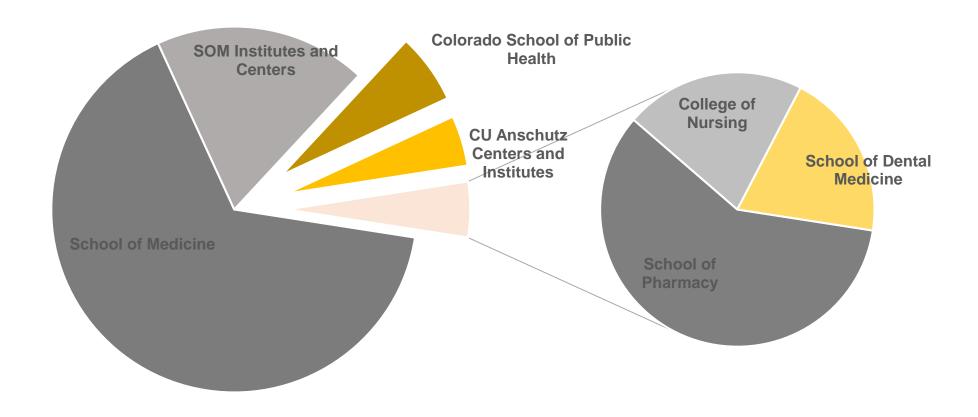








CAMPUS FUNDING CONTRIBUTIONS



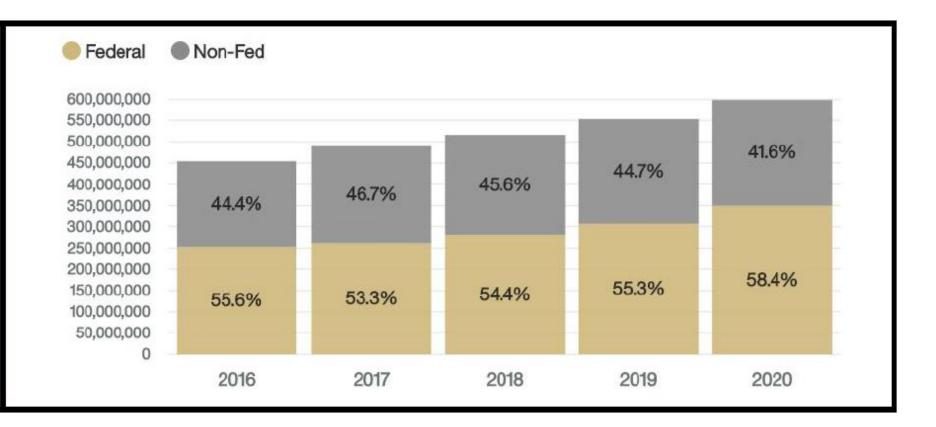






PROPORTION OF FEDERAL FUNDING



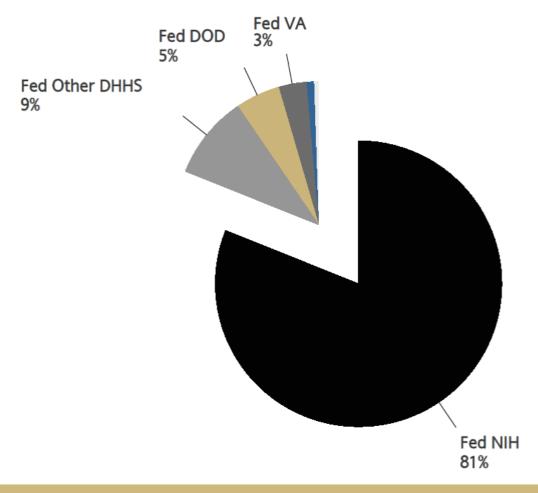






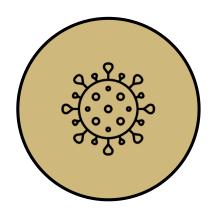


2016-2020 FEDERAL SPONSORS









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





 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

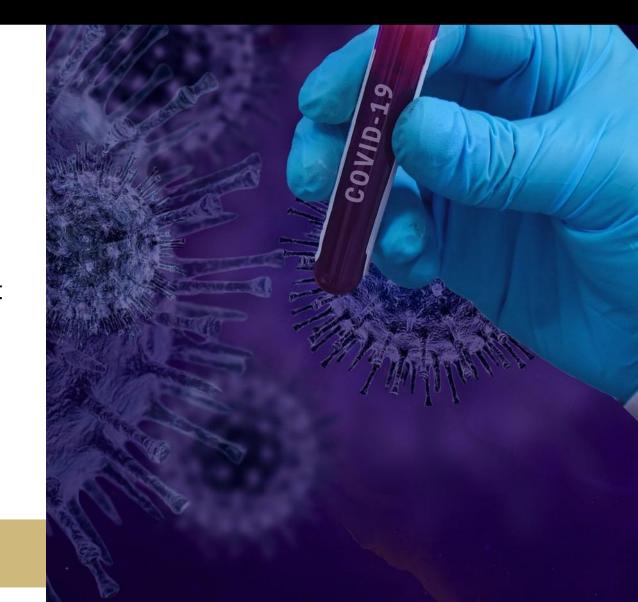






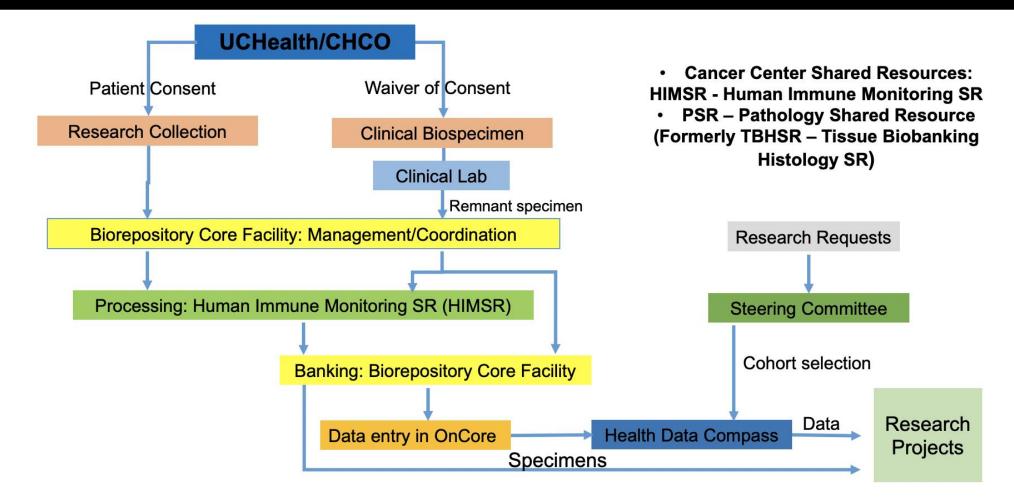
COVID BIOBANK

- 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



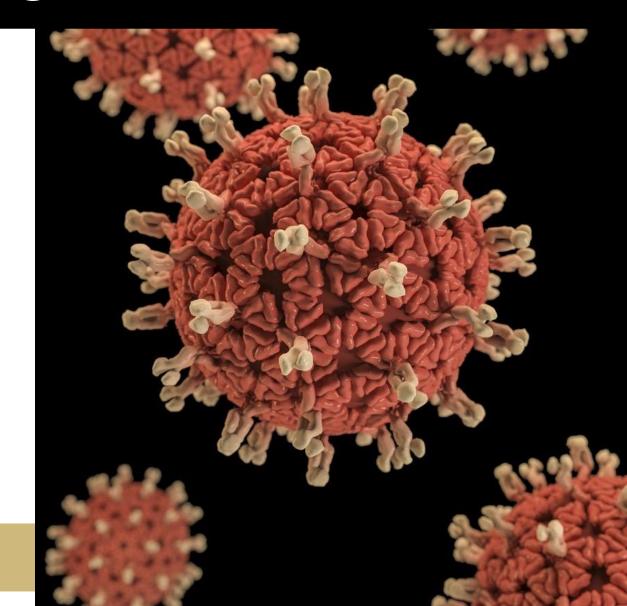
Matthew Steinbeiss





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









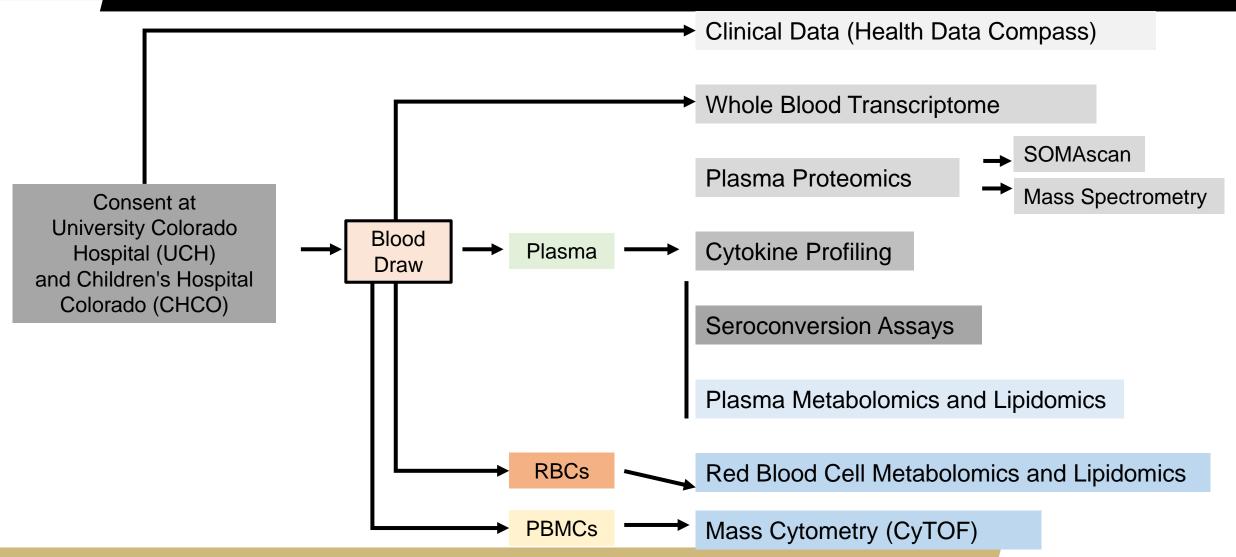








DATASETS GENERATED









DEFINING BIOSIGNATURES OF SEROCONVERSION

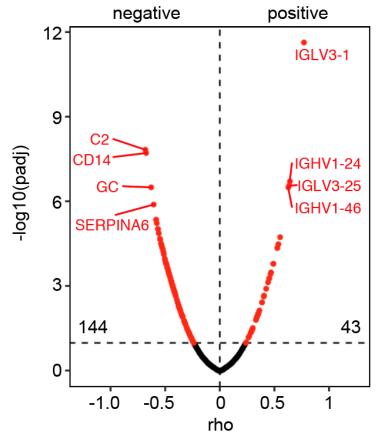
Seroconversion indices

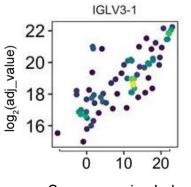
The Spearman Factory

MS Proteomics SOMAscan Proteomics MSD Cytokines CyTOF

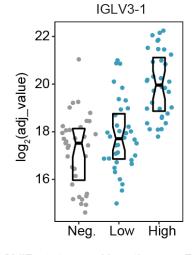
Proteins and cell types associated with seroconversion

Seroconversion vs. MS proteomics Correlation with seroconversion:





Seroconversion Index



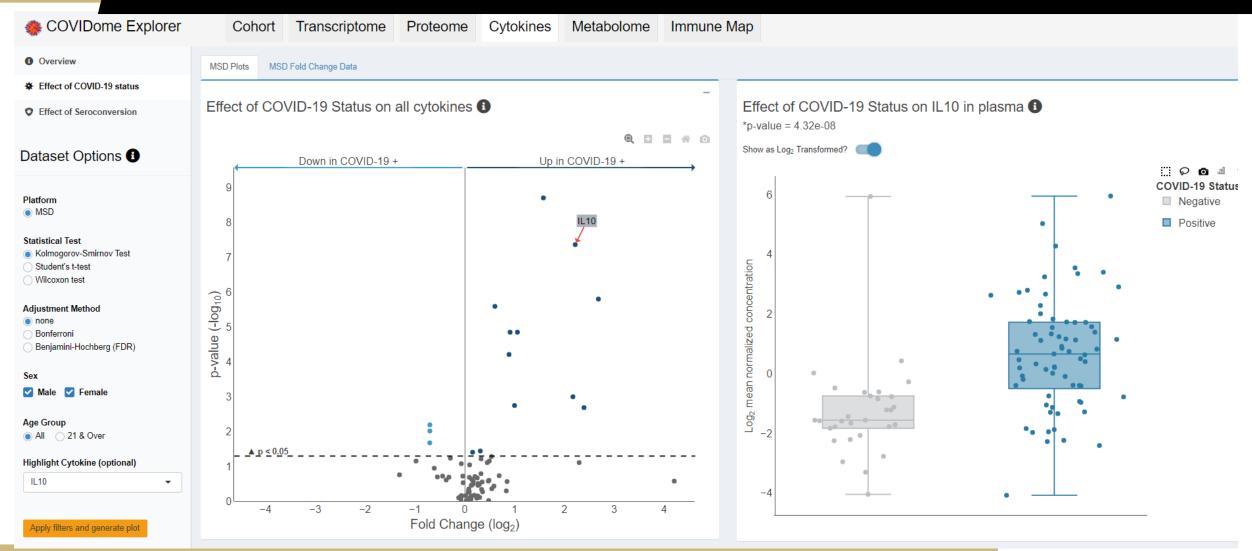
COVID status: • Negative • Positive







COVIDOME EXPLORER









THE RICHNESS OF OUR RESEARCH COMMUNITY

Progress through collaboration







TARGETING LEUKEMIA STEM CELLS



Craig Jordan Medicine



Dan Pollyea Medicine



James DeGregori Biochemistry



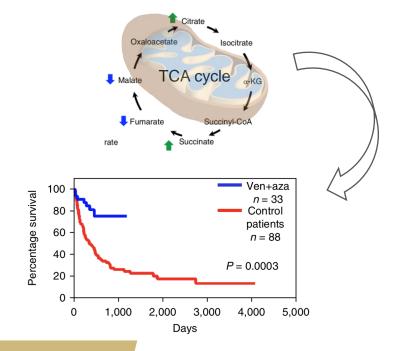
Angelo D'Alessandro Biochemistry

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









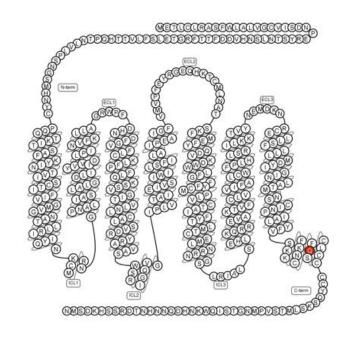
ORO-OTO-CARDIAC SYNDROME

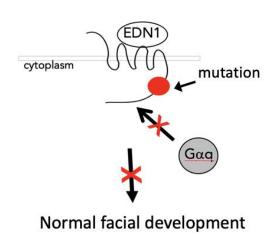
School of Dental Medicine: David Clouthier, Ph.D.

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



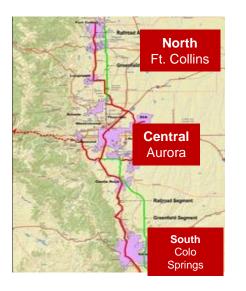




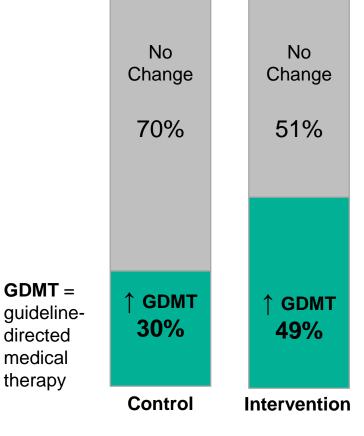
THE EPIC-HF TRIAL







- 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

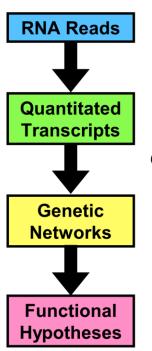
therapy







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



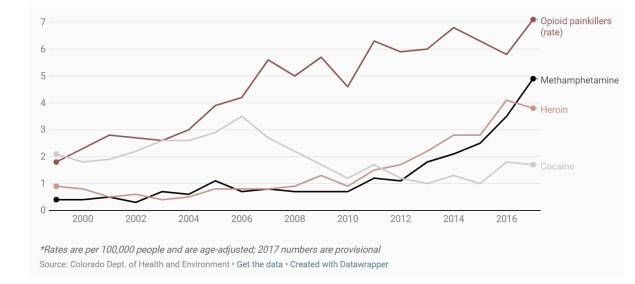




COLORADO MEDICATION ASSISTED TREATMENT PROGRAM FOR OPIOID USE DISORDER

- 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

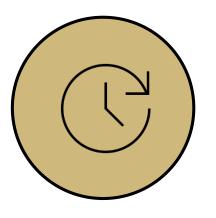
Tanya Sorrell PhD, PMHFNP Rosario Medina, PhD FNP-BC CNS Paul Cook, PhD Mary Weber PhD PMHFNP Claudia Amura, PhD, MPH Robert Valuck, PhD RPh ...And many others



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







SPECIAL PROJECTS AND FUTURE PLANS

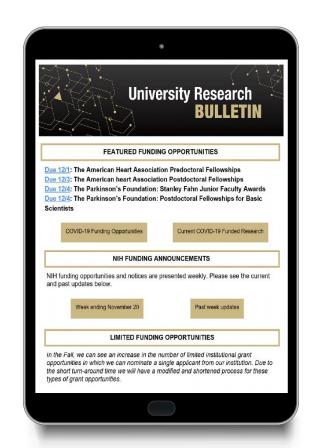




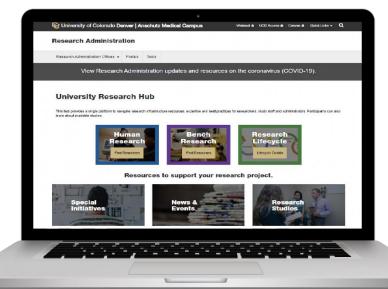


RESEARCH COMMUNICATIONS

- 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

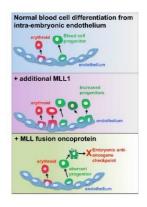
diane.ladell@cuanschutz.edu





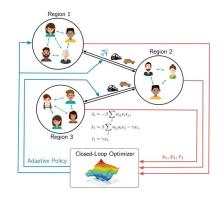


AWARDED NEW COLLABORATIONS (\$50K)



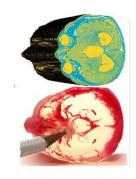
Identification of an embryonic cell-intrinsic cancer checkpoint: studying differential transcriptional effects of the proto-oncogene MLL1 versus MLL-ENL in an embryonic system

Patricia Ernst and Mary Allen

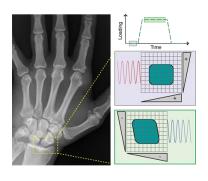


Control-theoretic design of data-driven policies for containing transmission of infectious diseases

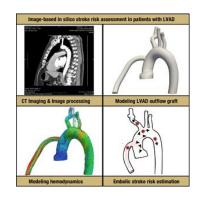
Emiliano Dall'Anese and Andrea Buchwald



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



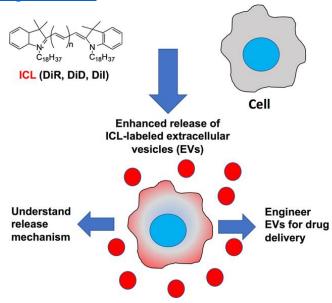




AWARDED EXISTING COLLABORATIONS (\$125K)

Novel Extracellular Vesicle-Based Nanoparticles for Drug Delivery

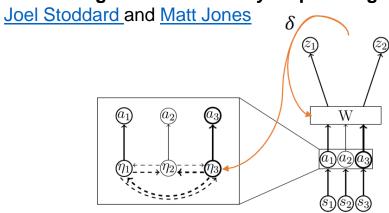
Dmitri Simberg and Jingshi Shen

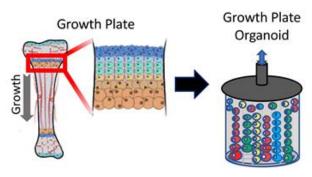


Biophysical Cues Governing Growth Plate Organization: A Computational & Experimental Approach

Stephanie Bryant and Karin Payne

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





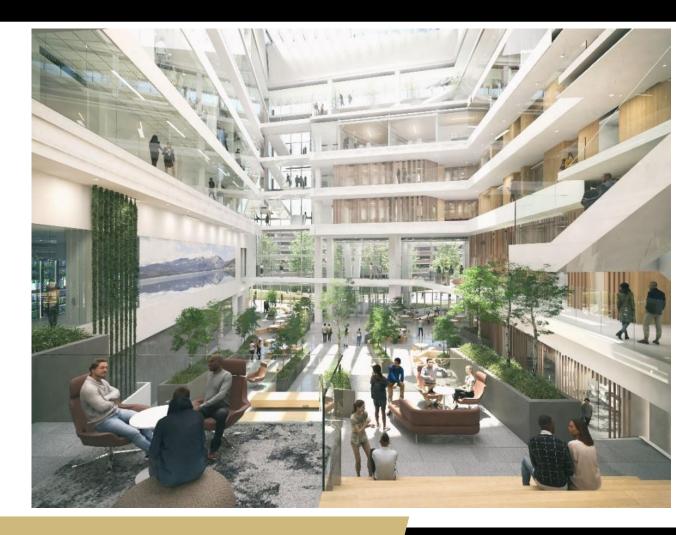






ANSCHUTZ HEALTH SCIENCES BUILDING

- 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





