

RESEARCH & SCHOLARSHIP MATTERS

A PUBLICATION OF THE SENIOR VICE PROVOST FOR RESEARCH & GRADUATE EDUCATION,
DR. CORINNE LENGSELD

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HEALING HISTORICAL TRAUMA

**RAMONA BELTRAN, MIRIAM VALDOVINOS
& DEBORA ORTEGA**



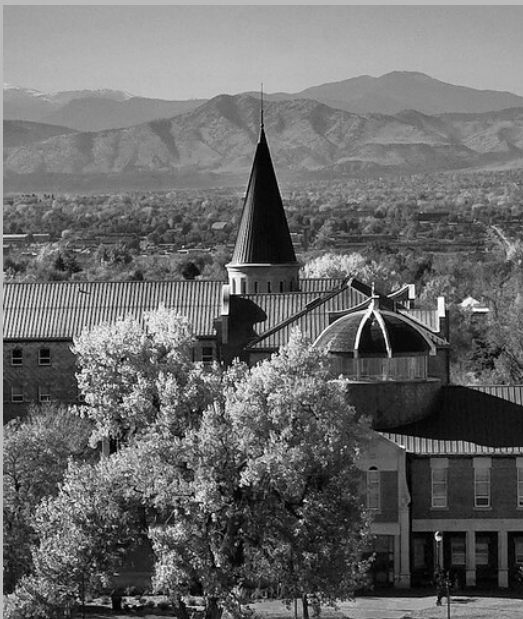
With a focus on healing historical trauma, the Our Stories, Our Medicine Archive seeks to create a community-based and owned archive to document Indigenous cultural genealogy and traditional cultural health knowledge. The archive is partially public-facing where people will be able to digitize and preserve their own cultural knowledge, stories, and artifacts; and part research project, which will ask people about their cultural health knowledge as it relates to their community. These stories capture the ways people have of explaining how they understand health and how to use traditional Indigenous knowledge to manage health conditions (e.g. the use of an herb to treat anxiety, or a type of cactus that is helpful for diabetes).

This collection will create an interactive archive and health knowledge repository, capturing how community members talk about traditional cultural health knowledge in their daily life experiences. An additional aspect of the project is to include evidence-based health information that is in relationship with traditional Indigenous health knowledge shared through participant stories. In the next step, the Associate Professor Ramona Beltran (GSSW) and the research team will study how these stories engage people and how they may help them seek further information and help regarding their own health.

Indigenous methodology was used throughout the course of the project. From the development of the protocol and questionnaire used in research, collaborators were intentional about centering Indigenous culture and cosmology, both of which shaped the approach to building the archive. For instance, while developing the protocol, collaborators sat in a circle and told their own "medicine story," speaking about what that meant for them personally and culturally. Basing the process in ceremony, the group was able to identify questions and articulate them in ways that center Indigenous ways of knowing and being.

Though the archive seeks to be a place where Indigenous and Indigenous Latinx people can learn about culture, genealogy, and traditional health knowledge, the hope is that they are also able to see themselves reflected in others and potentially reduce the health impacts of historical and intergenerational [trauma](#) in their communities by focusing on a culture of healing.

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IN THE NEWS

From February through June, the University of Denver garnered 102 mentions in elite and national media outlets, and 217 mentions in local media outlets.

NBC Nightly News - "Colorado Police Officers Placed on Leave Over Photos Connected to Death of Elijah McClain," interview with Apryl Alexander, associate professor, GSPP

Denver 7 - "Should Juneteenth Become a State or Federal Holiday?" quotes from Susan Schulten, professor, CAHSS

The Colorado Sun - "Could Coronavirus Change Our Obsession with School Testing and Accountability?," opinion from Erin Anderson, assistant professor, MCE

The Associated Press - "Virus Pummels Commercial Real Estate, Could End Long Boom," quotes from Glenn Mueller, professor, DCB

The New York Times - "Hickenlooper Stumbles in Colorado Race, Complicating Democrats' Senate Push," quotes from Floyd Ciruli, adjunct faculty, JKIS

Newsweek - "Trump Failed to Deliver for Evangelicals in Supreme Court Abortion Case," opinion from Joshua Wilson, associate professor, CAHSS

KOA Radio - "Trump's Executive Order on Social Media," radio interview with Derigan Silver, associate professor, CAHSS

ABC News - "Nursing Home Ventilators Could Help Hospitals Amid Coronavirus Crisis," interview with Govind Persad, assistant professor, SCOL

PBS NewsHour - "Fostering Pets is Helping Some Better Cope with the Pandemic," interview with Phil Tedeschi, executive director of the Institute for Human-Animal Connection and clinical professor, GSSW

ABC News - "Surge in Divorces Anticipated in Wake of COVID-19 Quarantine," interview with Howard Markman, professor, CAHSS

The Denver Post - "How Gov. Polis Recruited Private Engineers to Analyze Colorado Cellphone Data During Coronavirus Crisis," quotes from Bernard Chao, professor, SCOL

The Colorado Sun - "Our Uneasy Commitment to Federalism is Killing Us," opinion from Jennifer Greenfield, associate professor, GSSW

The Washington Post - "Partisanship Has No Place in Managing the Coronavirus Outbreak," quotes from Jeanne Abrams, professor, ULIB

WHO'S REQUESTING GOVERNMENT INFORMATION? (AND HOW DO WE MAKE IT MORE EFFICIENT?)

MARGARET KWOKA



When you think of who is requesting federal government and agency information, who comes to mind? News agencies? They're just one small piece of the pie - 2.6% of requestors. Who is the remaining 87.4%? And what are they doing with this information?

A large chunk of the remaining pool are commercial businesses requesting records from large regulatory agencies like the EPA. This information is helpful to businesses because they do their due diligence on business deals, figure out how to be more competitive in bidding for government contracts, learn what their competitors are up to, or warehouse and resell government documents to regulated businesses.

Another large group of requestors are private citizens. In one study, Professor Margaret Kwoka (SCOL) is focusing on first-person requests. These records are for someone's personal information like their FBI file, health information through the VA, genealogy requests (social security or prison records of ancestors).

Requests related to immigration are now more than half of all federal Freedom of Information Act (FOIA) requests, with 45% of requests going to the Department of Homeland Security. Often, non-citizens or their lawyers are requesting their personal records because there is no other way of getting them. In deportation proceedings held in immigration court, there is no discovery, so this information must be requested under FOIA.

In another study to complete the data for her book manuscript, Margaret looked at every agency that receives more than 500 requests per year. In order to get their data on FOIA, she had to make FOIA requests, and in one case, even sued (and won) to get the information. This is the most comprehensive look at who uses FOIA.

Insight into who actually needs FOIA, how many people, and how often, shows just how crucial the mechanism is, but also that there should be better, more efficient options. As it stands, FOIA can be expensive and burdensome to agencies, keeping them from serving the public well. By looking at who needs the data and why, better ways of managing this dispensing of information can be designed and implemented. Margaret argues FOIA should be reimagined into a "leaner, meaner" FOIA, or else it may collapse under its own weight.

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DU'S BRAVE LAB ADDRESSES PEDIATRIC ANXIETY

MICHELLE ROZENMAN, TIM SWEENEY, ANNE DEPRINCE & JULIA DMITRIEVA

In 2018, Colorado was ranked 48th out of 50 states in mental health services for children and adolescents. This is especially problematic for anxious youth. Anxiety is the most common, yet most under-identified and under-treated disorder: 30% of kids and teens will experience anxiety disorder by age 18. There is dire need for more and better treatments for youth anxiety. So what is happening at DU to reach these young people?

Directed by Dr. Michelle Rozenman, assistant professor of psychology (CAHSS), the BRAVE Lab at DU conducts research to improve provider knowledge about anxiety and improve treatments that target the underlying processes.

Increasing Knowledge About Anxiety

Most anxious youth first present for services in pediatric primary care. Primary care has become the de facto mental health system, and parents feel comfortable talking to their child's doctors and nurses. Through a DU funded Faculty Research Fund award, Michelle surveyed 115 medical doctors and nurses working in pediatric primary care about their knowledge and needs related to pediatric anxiety. While 70% of providers regularly discuss anxiety with their patients and parents, most did



not know what treatments to recommend or where to refer youth for services. However, all 100% of participating providers indicated interest in additional training in pediatric anxiety. Michelle is currently working toward developing an online tool kit that providers could use in real time to ask their patients and their parents about anxiety and refer them to the right supports.

Targeting Anxiety With Computerized Intervention

Together with Co-PI Tim Sweeney, a vision scientist also in the Department of Psychology, and funded by the DU

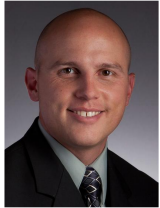
Professional Research Opportunities for Faculty, Michelle is studying a process called interpretation bias. Interpretation bias occurs when someone interprets environmental or situational ambiguity as overly-threatening. Michelle and Tim are studying whether and how anxious youth and emerging adults may be overly sensitive in interpreting ambiguity as threatening from linguistic and visual/perceptual perspectives, and how this may be related to anxiety. They hope to identify a "tipping point" where interpretation bias becomes problematic.

As a next step, Michelle, alongside Co-PIs Tim Sweeney, Anne DePrince, and Julia Dmitrieva (Psychology, CAHSS), received a phased innovation grant from the National Institute of Mental Health, to test whether a computerized intervention might reduce interpretation bias in order to treat anxiety disorders in youth. This intervention may provide an opportunity to "re-train the brain" away from fearful and threatening associations, and allow young people to experience symptom relief.

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EARLIER INTERVENTIONS, HAPPIER OUTCOMES

**CHADD CLARY, CASEY MYERS,
BRAD DAVIDSON & MOHAMMAD MAHOOR**



What if there was a better way to decide whether the time is right for knee surgery?

Similar to the technology found in your cell phone, an inertial measurement unit (IMU) could be the key to more helpful information for those making these decisions and assist in optimizing surgery timing.

An IMU is an electronic device that measures and reports a body's accelerations, angular velocities, and orientations. When worn by people, IMUs could measure movement quality before, during, and after a diagnosis or surgical intervention.

On their own, IMUs do not have enough information or high enough fidelity to characterize a patient's movement quality. That's where machine learning, which is good at identifying patterns in data and associating those patterns, comes in. IMU sensor data, combined with supplementary gait lab measurements, could be used by machine learning techniques, to quantify a person's ability to walk smoothly or navigate stairs in real time.

Together with KIHA, Chadd Clary of the Center for Orthopaedic Biomechanics (COB) and assistant professor of mechanical and materials engineering (RSECS), is researching how this approach could be crucial for those considering surgeries like hip or knee replacement. Patients would wear sensors to get a base-line idea of how they move, the quality of that movement, and how it changes

after surgery. It could also be used to monitor progress during rehabilitation.

This research has potential implications in the field of neurodegenerative diseases as well. Movement quality is a key indicator for diagnosing disease. Chadd has seen firsthand the early signs and effects of Parkinson's disease on a family member's body movement several years before an official diagnosis.

Currently, Chadd is focusing his research on osteoarthritis of joints where cartilage wears away, leaving bone on bone contact and with it, pain and inflammation. Understanding what those characteristic changes are will help build an algorithm that will sort patients into categories such as: healthy, mildly osteoarthritic, or ready for a total knee/hip replacement. Thus, assisting with both diagnosis and optimizing surgery timing.

Getting this research and helpful information out to those who need it is important. Chadd and his group are partnering with associate professors Melissa Akaka and Ali Besharat of DU's Consumer Insights and Business Innovation Center (CiBiC) to research the consumer side of the project. Together, the hope is to understand how and what interventions this technology can provide to help people make these decisions and live healthier, happier lives.

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SELECT RECENT GRANTS AWARDED

Associate Professor Elizabeth Escobedo, History Dept. Chair Carol Helstosky & Assistant Professor Esteban Gomez (CAHSS), \$137k
Grant from the US Dept. of Veterans Affairs for "NCA's Veterans Legacy Program (VLP)"

Assistant Professors Erica Larson & Robin Tinghitella & Teaching Associate Professor Julie Morris (NSM), \$1.5m
Grant from the National Science Foundation for "Collaborative Research: RoL: The Evolution and Maintenance of Variable Species Boundaries"

Professors Doug Clements & Julie Sarama (MCE), \$53k
Grant from Northwestern University (subaward NIH) for "NIH Infant and Toddler Toolbox"

Associate Professor Alison Schofield (CAHSS), \$300k
Grant from the National Endowment for the Humanities for "Dead Sea Scrolls from Cave 1: New Editions and Translations"

Professor Brian O'Neill (JKSIS), \$126k
Grant from Battelle National Labs for "Integrated Multi-sector Multi-Scale Modeling Scientific Focus Area"

Associate Professor Kateri McRae (CAHSS), \$446k
Grant from the National Institutes of Health for "Investigating the neural systems that support the beneficial effects of positive emotion on stress regulation"

Assistant Professor Jonathan Moyer (JKSIS), \$451k
Grant from QED Inc. (subaward U.S. Agency for International Development) for "The Learning Contract"

Scientist Monika Bleszynski & Professor Maciej Kumosa, (RSECS), \$60k
Grant from the Colorado Office of Economic Development and Int'l. Trade for "New Materials for Icing Prevention"

Assistant Professors David Coppini & Kareem El Damahoury, (CAHSS), \$50k
Grant from the Colorado Trust for "Media Landscape Study"

Research Associate Professor Kevin Morris (GSSW), \$25k
Grant from Foundation A et P Sommer for "Measuring the Efficacy of Animal Assisted Interventions at Green Chimneys"

A full list of recently awarded grants can be found:

- <https://www.du.edu/news/faculty-and-staff-grants-june-2020>
- <https://www.du.edu/news/faculty-and-staff-grants-april-and-may-2020>
- <https://www.du.edu/news/faculty-and-staff-grants-march-2020>

PROBLEM SOLVING THROUGH COLLABORATION

MELISSA AKAKA & ALI BESHARAT

When world-leading food company Danone needed to understand what matters most to Gen Z consumers, the company reached out to DU's Consumer Insights and Business Innovation Center (CiBiC). The study gained insights into Gen Z perceptions and behaviors, allowing Danone to enhance its customer experience.

CiBiC has been operating on DU's campus since 2017 and was co-founded by two associate professors, Ali Besharat and Melissa Akaka, at Daniels College of Business, Department of Marketing. CiBiC works with local, national, and international companies through consumer insights and marketing research projects. Often, a company doesn't know its specific business problem or its research and data needs—this is where market intelligence and consumer insights are needed. The Center works with clients



to derive empirical insights by collecting data through different qualitative and quantitative methods (i.e., observation, interviews, focus groups, survey research, experimental design, etc.), and provides recommendations to define strategic growth initiatives and solve the unique challenges these businesses face.

CiBiC has a diverse group of clients, ranging from local businesses and advertising/branding agencies to world-leading companies across different sectors. For example, the Center has researched and developed a loyalty program for a luxury

retailer that motivates customers to spend more and makes them feel valued by the company; gained insights into the market and variability of snacks and personal preferences to inform design; and conducted in-depth market research to understand the competitive landscape and regulatory roadblocks that may impact a new product as it enters the market.

The Center has also directly engaged with on-campus partners, such as the DU Mental Health and Wellness Collaborative (The Collaborative), an interdisciplinary group focused on psychotherapy, applied mental health research, training & education, and mental health policy for the prevention and advancement of mental health in Denver and beyond. CiBiC evaluated the

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A NEW APPROACH TO CLASSIC QUESTIONS

CEDRIC ASENSIO

With the invention of new tools and technology like CRISPR, researchers are able to take a modern approach to classic cell biology questions with far-reaching impact.

Take for example, diabetes. According to the CDC, more than 34 million people are living with diabetes - 90-95% of them have type 2 diabetes. For those with type 2, the beta cells found in the pancreas do not secrete enough insulin or the body's cells do not respond properly to insulin. This leads to the pancreas making more insulin to try to get the body's cells to respond, but eventually it cannot keep up and blood sugar rises. This can lead to serious health problems, such as heart disease, vision loss, and kidney disease (CDC).

For the body to work properly, insulin secretion must be regulated and finely controlled. Thus, understanding how beta cells make secretory granules, the compartments which store and release insulin,



as well as the proteins involved in the process, are key to potentially finding a cure. Over time, the hope is to build a sort of road map of all proteins involved in secretory granule building and regulation of insulin secretion.

Using technology like gene-editing technique CRISPR, could provide a new path to answers. In this process, the Cas9 enzyme acts like a pair of "molecular scissors" that can cut the two strands of DNA at a specific location in the genome and bits of DNA can be added or removed. Using this technique, genes can be

inactivated one by one, allowing researchers to see which genes affect the building of secretory granules.

Through an American Diabetes Association grant with his colleague in Australia, Assistant Professor Cedric Asensio (NSM) found that when one particular protein - VPS41 - is removed from a beta cell, it cannot secrete insulin. They further found that mice genetically modified to lack VPS41 specifically in beta cells of the pancreas develop type 2 diabetes due to a defect in insulin secretory granule formation. Previous studies have also shown mice that are resistant to diabetes have increased amounts of VPS41. Now, by taking mutations found in humans and introducing them to the beta cells of mice, they will be able to see which mutations affect the formation of these secretory granules. If a defect is found, it could indicate VPS41 is causative of Type 2 diabetes.

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PROBLEM SOLVING THROUGH COLLABORATION

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needs and goals of the group to compile a business plan that encompassed financial, organizational, and growth considerations for this collaboration.

With a core mission of raising awareness about the importance of consumer insights and the role of insights in innovation, CiBiC goes beyond simply helping marketers and businesses by being focused on its stakeholders and problem solving. It also supports faculty providing opportunities for data collection and leveraging their skills as subject matter experts on projects. Students can participate with CiBiC in a variety of ways, from being a part of a subject pool to, working in a research lab, to leading client research projects. These relationships are helping to foster cross-disciplinary collaboration between departments and divisions on campus as well as support grant funding initiatives.

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A NEW APPROACH TO CLASSIC QUESTIONS

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Through his NIH National Institute of General Medical Sciences grant, Cedric is studying what appears to be another crucial protein called HID1. Cells that lack HID1 have been found to have defects in insulin secretion. It also appears to be one of the first actors involved in the process of creating secretory granules.

Finding answers to these questions does not only relate to diabetes. A similar concept can be applied in brain function and neuroscience to neurons, which also have secretory granules. Instead of making insulin though, these compartments make, store, and release neuropeptides, which can signal hunger, thirst, fatigue and many other physiological responses.

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ABOUT THE PUBLICATION

Research and Scholarship Matters is a quarterly newsletter produced on behalf of the faculty of the University by the Senior Vice Provost Provost for Research and Graduate Education. Faculty with notable accomplishments or images suitable to the front panel of the next issue are encouraged to send them to Audry.LaCrone@du.edu. Not all submissions can be included, but every attempt will be made to be inclusive of all high quality research, scholarship & creative works.

Previous issues can be found [here](#).

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