RESEARCH & Scholarship Matters

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

What's inside this issue:

COVID-19 RESEARCH

SPIT LAB

PRODUCT PRODUCTION

SCHOLARLY ARTICLES

AND MORE

RESEARCH & SCHOLARSHIP FISCAL YEAR IN REVIEW





COVID-19 WORK ON CAMPUS coming together to battle coronavirus

During the COVID-19 pandemic, our faculty took initiative in their respective areas to, once again, contribute to the public good. With a need for many different types of subject matter experts, DU's faculty, staff, and students worked together to write scholarly articles, conduct multitudes of research, assist in outfitting essential personnel with proper PPE, and much more.

In a time of need and uncertainty, DU delivered. The spirit of creative thinking and innovation never stopped at the University. We took this opportunity to again live our vision of being a great private university dedicated to the public good; of living our values: to strive for excellence, innovation, engagement, integrity and inclusiveness in all that we do.

Please enjoy reading about some of this incredible work in this issue of *Research* & *Scholarship Matters*. Never has this publication been more appropriately named. This list is not complete; however, that does not diminish the value and meaning of all the incredible work, time and energy devoted to the cause. If your COVID-19 related work was not captured in this publication, please send an email to Audry.LaCroneedu.edu.

COVID-19 Scholarly Articles



Lena Lundgren, GSSW

Published in Frontiers in Psychiatry, this <u>article</u> presents an interdisciplinary and international perspective on how COVID-19 and the related systemic shock impact on individuals with SUDs (substance use disorders) directly and indirectly.



Mike Hoa Nguyen, MCE Published in the Educational Researcher, this paper explores the federal funding formula for colleges and universities, specifically Minority Serving-Institutions, in the COVID-19 stimulus bill (CARES Act).



Govind Persad, SCOL Published in the New England Journal of Medicine, this <u>article</u> argues that governments and policy makers must do all they can to prevent the scarcity of medical resources and provides six recommendations to be used to develop guidelines that can be applied fairly and consistently across cases.





Andrew Urbaczewski & Young-Jin Lee, DCB Published in the European Journal of Information Systems, this <u>paper</u> explores the benefits and drawbacks of government surveillance within the COVID-19 outbreak of 2020.

SPIT LAB

PHIL DANIELSON, NSM; SARAH WATAMURA, CAHSS; MATTHEW RUTHERFORD, RSECS; & CORINNE LENGSFELD, PROVOST'S OFFICE







The need for quick, accurate testing of COVID-19 for the DU community sparked the creation of the SPIT Lab. Currently, the University is using a nasal-pharyngeal swab to test for SARS-CoV-2 (the virus that causes COVID-19), but plans to move to a saliva-based test this year that would allow for testing of up to 1,000 people per day with a less than 24-hour turnaround time.

It is known that SARS-CoV-2 targets the lungs where it can cause a severe acute respiratory syndrome, but the virus can also be found in many bodily fluids including nasal mucus, saliva, urine, blood and fecal material. Nasal-pharyngeal swabs are considered the "gold standard" for the reliable detection of SARS-CoV-2, however, several studies by major universities have shown that the reliability of detecting the virus in saliva samples is equivalent to that of nasal-pharyngeal swabs.

The overall testing process for nasal-pharyngeal swabs and saliva samples is similar to what will be used for testing saliva on campus. The genetic material from the virus is extracted from the saliva, followed by using RT-QPCR (Reverse Transcription Quantitative Polymerase Chain Reaction) technology to detect the presence of the virus. This technology is the most sensitive and accurate method available for the detection of SARS-CoV-2.

The accuracy of the test is achieved by looking for multiple different regions of the virus' genetic material. This "redundancy" helps to ensure that a positive result really is positive and that a negative result really is negative. Overall, this assay has a very high degree of sensitivity (generally 98-100%). The assay is also very specific in that it only detects SARS-CoV-2. It is not "fooled" by any other respiratory viruses including other seasonal human coronaviruses that cause common colds.

Currently, the lab is in the process of being set up, with all equipment on site. Next steps are to test the robots and detection platforms to make sure that everything works smoothly in hopes that everything will be up and running when flu season arrives in full force.



COVID-19 RESEARCH

ELAINE BELANKSY & BENJAMIN INGMAN, MCE



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Assisting with the implementation of COVID-19 guidelines from the CDC in rural schools with a particular focus on nutrition, physical activity, physical education, social-emotional learning, and management of chronic conditions.

KIMBERLY BENDER, GSSW



Exploring how responsive collective care models, in the U.S. during the COVID-19 pandemic, may guide us towards more sustainable collective cultures of health and wellbeing moving forward.



LISA BROWNSTONE, MCE

Using a qualitative approach to look at the impact of COVID-19 social distancing on people's experiences of their bodies, eating, emotions, and identities.

KIMBERLY CHIEW & PETER SOKOL-HESSNER, CAHSS



Collecting behavioral and epidemiological data from a nation-wide sample to examine how people feel, think, and behave under the sustained stress of the pandemic.

JENNIFER GREENFIELD, GSSW



In collaboration with National Jewish, studying the long-term social and economic impacts of Post-COVID Syndrome.

AMY HE, GSSW



Conducted a multi-site (2 states and 2 counties) workforce needs assessment with over 2,000 child welfare workers around workplace safety, transition to remote work, and use of virtual platforms to engage with clients during COVID-19.

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JULIA RONCORONI, MCE

Assessing whether COVID-19 has impacted Latinx adults' experiences of social isolation and food insecurity & whether rates of social isolation and food insecurity predict engagement in health-promoting activities.

CECELIA ORPHAN, MCE



Identifying how rural public higher education institutions are being impacted in real-time by COVID-19 budget shocks due to state funding cuts and rising costs associated with virus mitigation.



EUGENE WALLS, GSSW

Using Photovoice methodology, the study examines the experiences and strategies of social workers who, because of the COVID-19 pandemic, have been forced to provide services remotely.

VAN ENGELENBURG LAB, NSM



Creating synthetic versions of SARS-CoV-2 virus, which could enable a way to manufacture effective diagnostics and a vaccine.

RESIDENTIAL HOUSING AND WASTE WATER MANAGEMENT

KEITH MILLER, NSM; CORINNE LENGSFELD, PROVOST'S OFFICE; JAMES ROSENER, FACILITIES; SHAWN MARTIN, FACILITIES







The University initiated an effluent monitoring program to detect Covid-19 virus in dorms during orientation week. Wastewater samples are collected by Keith Miller (NSM) and Shawn Martin (Facilities) three times a week, and they are sent by courier to DU's lab partner in Ft. Collins the same day.

The project initially started with discrete samples collected from two dorms, but quickly expanded to time-based monitoring of five dorms. Covid-19 levels in the effluents are received in just over 24 hours from the time of sample collection.

These results, used in conjunction with contact tracing and selective testing Covid-19 students at DU's onsite testing facility, have enabled the University to quickly identify and isolate infected, sometimes asymptomatic students in dorms, preventing the spread of the virus in the DU community.



Above: Keith Miller (NSM) and Shawn Martin (Facilities) collect wastewater samples from a dorm.

MENTAL HEALTH & WELLBEING

THE MENTAL HEALTH COLLABORATIVE

Assisted people accessing DU's clinic resources on campus, developed a website to centralize information about DU's mental health clinics to provide guidance on which clinic on campus is best suited given the patient's needs, and hosted mental health resources for BIPOC communities gathered by the Collaborative.

ROUNDTABLE DISCUSSIONS

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DANIELS COLLEGE OF BUSINESS

Hosted a Voices of Experience miniseries where three prominent C-suite executives discussed how COVID-19 has affected their industries and challenged them as leaders.

CREATIVE CLASSES

JARED DEL ROSSO, CAHSS



Offered an independent study course in the Spring 2020 term that looked more closely at the positive and negative outcomes of taking classes virtual. \cap

PRODUCT PRODUCTION

PPE PRODUCTION THE INNOVATION LAB, RSECS



Production of personal protective equipment (PPE), such as face shields, protective barriers, face mask dispensers, and dispensers for disinfection supplies for classrooms and other spaces on campus.

HAND SANITIZER PRODUCTION KIHA



Manufactured and donated 60% alcohol hand sanitizer to six nursing homes and home care facilities, and an Emergency Room.

COVID-19 MODELING

JULIA DMITRIEVA, CAHSS



This model predicts the impact of various public health measures and epidemiologic conditions on the rates of infection on campus throughout Fall guarter.

ALEX HUFFMAN, NSM; FACILITIES MANAGEMENT & PLANNING; & LAMONT SCHOOL OF MUSIC



Using a mathematical model and a small network of air sensors to estimate the probability of airborne infection within individual classrooms to improve preventative efforts before students return; and released publicly available <u>database</u> of selected COVID-19 resources for community outreach.

SURVEYS

RENEE BOTTA, CAHSS



Composed and executed a survey to nearly 3,500 DU faculty, staff and students about returning to campus amid the COVID-19 pandemic.

LISA MARTINEZ AND JEFFREY LIN, CAHSS



Assisting with the implementation of COVID-19 guidelines from the CDC in rural schools with a particular focus on nutrition, physical activity, physical education, social-emotional learning, and management of chronic conditions.

FISCAL YEAR 2020 Breaks more records

FY 2020 was yet another record breaking year for research at the University of Denver. Research expenditures increased 13% over FY 2019, topping \$41 million. DU received 135 new awards totaling over \$34 million.

Research & scholarship saw 244 principal investigators, 401 faculty authors, 25,124 citations, 807 archival publications, 25 faculty-authored books, 8 granted patents and 4 highly cited papers.

The University of Denver increased funding for student research and scholarship in FY 2019. More than 600 undergraduate and graduate students were supported by \$3.2 million in grant funding, resulting in 20% of all students paid on campus being supported by grant funding.

For more information, check out the Research and Scholarship Annual Report.



Figure 1. Highlights the 10-year trend. Research expenditures have increased 93% from FY 2011 to FY 2020.

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 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. Not all submissions can be included, but every attempt will be made to be inclusive of all high quality research, scholarship and creative works.

WANT MORE INFORMATION?

Want to receive emails regarding resources, celebrations, opportunities, and upcoming deadlines related to research and scholarship?

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Previous issues can be found here.