Over the past several months, Arizona’s research, medical and public health professionals have stepped up to the plate like never before. The arrival of the SARS-CoV-2 virus called on us to respond to a wide variety of challenges. For many of us, it meant pivoting away from our day-to-day responsibilities in order to respond to the demands of the day. By most accounts, it appears that we have delivered. Unfortunately, the battle is not over.

Certainly, the goal of the Arizona Wellbeing Commons is more meaningful than ever: To work together to improve the health and wellbeing of the people of Arizona. Join us today as we make new connections, share new ideas and pursue new initiatives.

NOTE: This webinar event is a live broadcast. Real event times may differ slightly from what is indicated on the agenda.
Event agenda

9:00 a.m.
Welcome
Hosts: Josh LaBaer, Exec Dir, Biodesign Institute & Jude LaCava, Bioscience advocate
Larry Edward Penley, Chair, Arizona Board of Regents

9:15 a.m.
Keynote address
The Covid-19 Pandemic: What have we learned thus far?
Tara O'Toole, Exec Vice President and Senior Fellow, In-Q-Tel
From where I sit: A conversation with Dr. Tara O'Toole
George Poste, Chief Scientist, Complex Adaptive Systems, ASU
It's your turn: Share your ideas, questions and concerns
Information is Power: A video tribute to the Pandemic Modeling Team
Arizona State University, University of Arizona, Northern Arizona University

10:20 a.m.
About the Arizona Wellbeing Commons
Reports from our division leaders
Stay tuned. After each presentation, the division leaders want to hear your reactions, ideas and questions.

Arizona Wellbeing Commons division: Viruses, immunity, microbiomes and infectious disease
Efrem Lim, Assistant Professor, Biodesign Center for Fundamental and Applied Microbiomics

Arizona Wellbeing Commons division: Public health and healthcare services: law, policy and equity
David Sklar, Senior Advisor and Professor, College of Health Solutions, ASU

Arizona Wellbeing Commons division: Nutrition, obesity, exercise and lifestyle
Stavros Kavouras, Assistant Dean, Graduate Education Professor, College of Health Solutions, ASU
Dorothy Sears, Professor, College of Health Solutions, ASU

Arizona Wellbeing Commons division: Mental health, substance abuse, crime and behavior change
Kelly Cue Davis, Associate Professor, Edson College of Nursing and Health Innovation, ASU
William Corbin, Professor and Director of Clinical Training, Department of Psychology, ASU

10:28 a.m.
Arizona Wellbeing Commons division: Neurobiology, aging, dementias and movement disorders
Rita Sattler, Associate Professor of Neurobiology and Neurology, Barrow Neurological Institute
Jason Newbern, Associate Professor, School of Life Sciences, ASU

Arizona Wellbeing Commons division: Cancer prevention, detection, management and treatment
Karen Anderson, Professor, Biodesign Virginia G. Piper Center for Personalized Diagnostics, ASU
Carlo Maley, Associate Professor, Biodesign Center for Biocomputing, Security and Society, ASU

Arizona Wellbeing Commons division: Culture, arts, design and humanities in health
Tamara Underiner, Associate Dean for Academic Affairs, Graduate College, ASU

Here's what we heard: Josh LaBaer and Jude LaCava
COVID-19: Bridging the Gaps: A video tribute to those who reach farther
**Event agenda**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>11:35 a.m.</td>
<td>Break for self-guided tour of our poster gallery</td>
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<td><a href="https://azwellbeingcommons.org/events">https://azwellbeingcommons.org/events</a></td>
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<tr>
<td>11:35 a.m.</td>
<td><strong>Lunch time: 30-minute discussions</strong></td>
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<td><strong>Session One</strong>: 12:00 – 12:30 p.m.</td>
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<td><strong>Session Two</strong>: 12:30 – 1 p.m.</td>
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<td>12:00 –</td>
<td><strong>Discussions will explore:</strong></td>
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<td>1:00 p.m.</td>
<td>• What do you care about most?</td>
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<td>• What are our greatest challenges? What gets in the way?</td>
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<td></td>
<td>• What do we hope to or need to achieve to improve the health and wellbeing of the people of Arizona?</td>
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<td>• What would be a good next step?</td>
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<td>1:00 p.m.</td>
<td><em>Grab your lunch and join some of the state’s foremost experts to discuss hot topics in SARS-CoV-2.</em></td>
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<td>You won’t want to miss the chance to connect with people who care about the same things you do.</td>
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<td>1:00 p.m.</td>
<td><strong>Breakout sessions</strong></td>
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<td>This is your chance to join a division discussion to hear more about what’s in store for the year to come – and help inform the future agenda. You will have the opportunity to join two 45-minute sessions.</td>
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<td><strong>Breakout Session One</strong>: 1 p.m. – 1:45 p.m.</td>
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<td><strong>Breakout Session Two</strong>: 1:46 p.m. – 2:30 p.m.</td>
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<td>1:00 p.m.</td>
<td><strong>Breakout sessions will explore:</strong></td>
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<td>• What are the most important unanswered questions?</td>
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<td>• What tools/resources/knowledge do you need to make progress on your research goals?</td>
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<td>• What do I have to offer and want to contribute to research and translational opportunities in Arizona?</td>
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<td>• What opportunities do we have to collaborate?</td>
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<tr>
<td>2:30 p.m.</td>
<td><strong>Welcome back!</strong></td>
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<td>We hope you found your lunch discussions and breakout sessions interesting and informative.</td>
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<td>Return to plenary session (Webinar Room Code: 945 1025 3555)</td>
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<tr>
<td>2:30 p.m.</td>
<td><strong>Delivering the Goods</strong>: A tribute to Arizona’s ingenuity</td>
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<td>2:30 p.m.</td>
<td><strong>Breakout sessions</strong>: <strong>What did we hear and where are we going?</strong></td>
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<td>Division leaders</td>
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<td></td>
<td>• Efrem Lim: Viruses, immunity, microbiomes and infectious disease</td>
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<td>• Tamara Underiner: Culture, arts, design and humanities in health</td>
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<tr>
<td>3:05 p.m.</td>
<td><strong>Conference close</strong>: <strong>Where do we go from here?</strong></td>
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<td>You could win a Pandemic Survival Kit (Must be present at conference close).</td>
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<tr>
<td>3:15 p.m.</td>
<td><strong>Virtual happy hour</strong>: Want to continue a topic from your breakout session? Feel free to stay and join in some after-conference conversation. Thank you for coming! #AZWellbeing2020</td>
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Lunch Discussion Session One: 12:00 – 12:30 p.m.

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Breaking barriers: How Arizona’s universities are delivering new solutions for COVID testing and diagnosis

Table 1: Carolyn Compton
https://asu.zoom.us/j/3684548820

Table 2: Joshua LaBaer
https://asu.zoom.us/j/88168713444?pwd=VmdPOXNoNzNGU2pRdXIV3VlXcXNMFUT09

Table 3: Valerie Harris
https://asu.zoom.us/j/85179197707

Table 4: Vel Murugan
https://asu.zoom.us/j/236795463

What’s the outlook for COVID vaccine development?

Table 1: Will Humble
https://zoom.us/j/98003563060?pwd=djRla0VNeUxHQUVTTkIbkNQS2xxdz09

Table 2: Brenda Hogue
https://asu.zoom.us/j/83812285632

Table 3: Bertram Jacobs
https://asu.zoom.us/j/9476563002

Table 4: Doug Lake
https://asu.zoom.us/j/2242362588

Sparking innovation: Arizona’s business community responds

Table: Maria Aspinall, Cindy Jordan
https://us02web.zoom.us/j/8285035627?pwd=ZzdCMjZRYUFxRkxqFoKLd8FjDCNz09

Keeping the public informed: News media and experts working together. What works and what gets in the way?

Table 1: Allison Otu, Melissa Sevigny
https://us02web.zoom.us/j/8781930627?pwd=MFhYSHl0aWhVZkg3T3FgREN0C80Zz09

Table 2: Brad Halvorsen Steve Yozwiak, Amanda Morris, Alex Li
https://gannett.zoom.us/j/99002690688
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Fear and anxiety: How do we address the mental health effects of COVID-19?

Table 1: Athena Aktipis  
https://asu.zoom.us/j/87086787850

Table 2: William Corbin, Mitzi Krockover  
https://asu.zoom.us/j/99314032972

Table 3: Kelly Cue Davis, Keith Crnic  
https://asu.zoom.us/j/85402891818

Reaching beyond: Meeting the needs of Arizona’s most vulnerable

Table 1: Charlene Tarver  
https://us02web.zoom.us/j/88068316980

Table 2: Julie Baldwin  
https://nau.zoom.us/j/82294189805

Table 3: Tomás León  
https://equalityhealth.zoom.us/j/3864540385

Monitoring, contact tracing and tracking: Where do we stand in Arizona?

Table 1: David Engelthaler  
meet.google.com/wov-kown-yzc

Table 2: Crystal Marie Hepp, Jason Sahl  
https://nau.zoom.us/j/84540468904

Table 3: Adam Gushgari, Kyle Freese  
https://us02web.zoom.us/j/89932491140

Probing the great unknown: Understanding the long-term effects of COVID

Table 1: Christian Bime  
https://arizona.zoom.us/j/86335112995

Table 2: Paul Coleman, Danielle Brokaw  
https://asu.zoom.us/j/9593834397

Table 3: Alexandra Lucas  
https://asu.zoom.us/j/82170854701
Lunch Discussion Session Two: 12:30 – 1:00 p.m.

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Breakout Session One: 1:00 p.m.

Attendees will choose from:

- Viruses, immunity, microbiomes and infectious disease
  https://asu.zoom.us/j/84684709991?pwd=TC9qd3o0ZEhMTXV2b1dJUUmNRUxUT09

- Culture, arts, design and humanities in health
  https://asu.zoom.us/j/86379546942

- Cancer prevention, detection, management and treatment
  https://asu.zoom.us/j/87079638573

- Mental health, substance abuse, crime and behavior change
  https://asu.zoom.us/j/99314032972

Breakout Session Two: 1:45 p.m.

Attendees will choose from:

- Public health and healthcare services: law, policy and equity
  https://asu.zoom.us/j/84213463148

- Neurobiology, aging, dementias and movement disorders
  https://asu.zoom.us/j/4402583716

- Nutrition, obesity, exercise and lifestyle
  https://asu.zoom.us/j/6024962547
Joshua LaBaer, M.D., Ph.D.
Arizona Wellbeing Commons
Executive Director, Biodesign Institute, Arizona State University
Director, Virginia G. Piper Biodesign Center for Personalized Diagnostics
Dalton Chair for Cancer Research
Virginia G. Piper Chair of Personalized Medicine
Professor, School of Molecular Sciences

Joshua LaBaer launched the Arizona Wellbeing Commons four years ago as a way to bring together health, medicine and bioscience researchers and leaders across the state to work together to solve the big health and wellness issues facing the people of Arizona.

LaBaer is one of the nation’s foremost investigators in the rapidly expanding field of personalized diagnostics. His efforts focus on the discovery and validation of biomarkers — unique molecular fingerprints of disease — which can provide early warning for those at risk of major illnesses, including cancer and diabetes.

Formerly founder and director of the Harvard Institute of Proteomics, LaBaer was recruited to ASU’s Biodesign Institute as the first Piper Chair in Personalized Medicine in 2009.

The Virginia G. Piper Center for Personalized Diagnostics (VGPCPD) has a highly multidisciplinary staff of molecular biologists, cell biologists, biochemists, software engineers, database specialists, bioinformaticists, biostatisticians, and automation engineers. VGPCPD applies open reading frame clones to the high throughput (HT) study of protein function. In addition, his group invented a novel protein microarray technology, Nucleic Acid Programmable Protein Array, which has been used widely for biomedical research, including the recent discovery of a panel of 28 autoantibody biomarkers that may aid the early diagnosis of breast cancer.

LaBaer earned his medical degree and a doctorate in biochemistry and biophysics, from the University of California, San Francisco. He completed his medical residency at the Brigham and Women’s Hospital and a clinical fellowship in oncology at the Dana-Farber Cancer Institute, both in Boston. He has contributed more than 150 original research publications, reviews and chapters. LaBaer is an associate editor of the Journal of Proteome Research, a recent member of the National Cancer Institute’s Board of Scientific Advisors, Chair of the Early Detection Research Network Steering Committee and recent president of the U.S. Human Proteome Organization.

Jude LaCava
Bioscience enthusiast, advocate and philanthropist

You may know Jude LaCava as sports anchor for FOX 10 — the role he had for the past 22 years. What most people don’t know is that Jude is strongly invested in the Arizona bioscience constellation. He comes at it from a very personal angle: He and his sister founded the Dorothy Foundation to honor their mother, who died when Jude was a young man. He uses his resources and connections to bring people together to “facilitate the creation of a collaborative research model that seeks to make cancer history.”
Larry Edward Penley, Ph.D.
Chair, Arizona Board of Regents

Larry Edward Penley is currently serving his second term as chair of the Arizona Board of Regents. Dr. Penley is president of Penley Consulting, past president of the Thunderbird School of Global Management, former president of Colorado State University and past chancellor of the Colorado State University system. A former dean of the W. P. Carey School of Business at Arizona State University, he was a professor of management and Robert Herberger Arizona Heritage Chaired Professor. Regent Penley has held academic positions in Venezuela and Mexico, developed educational programs in partnership with institutions in China and Mexico and is professor emeritus at ASU.

Tara O’Toole, M.D., M.P.H.
Executive Vice President and Senior Fellow, In-Q-Tel

Tara O’Toole is an executive vice president and senior fellow at In-Q-Tel. Since 2014, she has directed B.Next, IQT’s initiative devoted to identifying and accelerating biotechnologies that could help detect, manage and quench epidemics of infectious disease, whether natural or deliberate. B.Next strives to create an “ecosystem of innovation” – including government, the private sector and academia, around issues related to the life sciences, biotechnology and national security.

Prior to joining IQT, Dr. O’Toole served as Under Secretary for Science and Technology at the Department of Homeland Security. In this role, she was responsible for scientific and technological research designed to provide new security and resilience innovations. Her accomplishments included the creation of a cybersecurity research division; the establishment of a robust R&D portfolio review process; developed strong collaborations with other federal R&D organizations; and delivered multiple technologies to DHS operational components that improved mission effectiveness and efficiency.

From 1999-2009, Dr. O’Toole was the CEO and Director of two university-based think tanks devoted to improving the country’s resilience to major biological threats. While leading the Johns Hopkins Center for Civilian Biodefense, Dr. O’Toole also served as a Professor of Public Health. She was appointed Professor of Medicine and Public Health at the University of Pittsburgh while directing the UPMC Center for Biosecurity. Her publications in the biodefense field include pandemic response scenarios such as Dark Winter and Atlantic Storm, as well as peer-reviewed papers on contagious disease epidemics; biodefense research and development strategies; and hospital preparedness.

Dr. O’Toole also served as Assistant Secretary of Energy for Environment, Safety and Health from 1993-97 where she made key contributions to the assessment and stabilization of pollution and special nuclear materials at the Nation’s nuclear weapons complex. In 1995, she led a national delegation to Russia to assist in the evaluation of the human health effects due to the former Soviet Union’s nuclear weapons program. Prior to becoming Assistant Secretary, O’Toole was a senior analyst at the Congressional Office of Technology Assessment. She also served for five years as a general internist in Baltimore Community Health Centers as part of the National Public Health Service.

Dr. O’Toole has a bachelor’s degree from Vassar College, an M.D. from George Washington University, and a Master of Public Health degree from Johns Hopkins University. She completed internal medicine residency training at Yale University and a fellowship in Occupational and Environmental Medicine at Johns Hopkins University. She was chair of the board of the Federation of American Scientists and is a member of the Council on Foreign Relations.
**George Poste, D.Sc., Ph.D., D.V.M.**  
*Regents Professor, School of Life Sciences*  
*Del E. Web Professor of Health Innovation*  
*Chef Scientist, Complex Adaptive Systems*  
*Arizona State University*

George Poste leads the Complex Adaptive Systems Initiative at Arizona State University, a program that links expertise in research on synthetic biology, ubiquitous sensing and healthcare informatics for personalized medicine. From 2003 to 2009, he directed and built the Biodesign Institute at ASU.

Dr. Poste founded the Biodesign Institute at ASU in 2003, and remained executive director until 2008. In addition to his academic post, he serves as chief executive of a consulting company, Health Technology Networks, which specializes in the application of genomic technologies and computing in healthcare. He serves on the board of directors of Monsanto, Exelixis and Caris Life Sciences and on the Scientific Advisory Boards for Synthetic Genomics and the A. Alfred Taubman Institute for Medical Research at the University of Michigan.

From 1992 to 1999 he was chief science and technology officer and president, R&D of SmithKline Beecham (SB). During his tenure at SB he was associated with the successful registration of 31 drug, vaccine and diagnostic products. In 2004 he was named as ‘R&D Scientist of the Year’ by R&D Magazine and in 2006 he received the Einstein Award from the Global Business Leadership Council. In 2009, Dr. Poste was named the recipient of the prestigious Scrip Lifetime Achievement Award, which acknowledged and honored his nearly four decades of research accomplishments spanning academia, industry, and government.

Dr. Poste is a fellow of the U.K. Royal Society, the Royal College of Pathologists and the U.K. Academy of Medicine, a member of the Council for Foreign Relations, and U. S. National Academy of Medicine Board on Global Health. He has served as a member of the Defense Science Board of the U.S. Department of Defense and currently serves on advisory committees for several U.S. government agencies in defense, intelligence, national security and healthcare.

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**Efrem Lim, Ph.D.**  
*Assistant Professor*  
*School of Life Sciences*  
*Biodesign Center for Fundamental and Applied Microbiomics*  
*Arizona State University*

Efrem Lim is a virologist who uses the tools of virus discovery to study host-virus interactions in human health and disease. The Lim lab studies interactions and evolution of the human virome in development and immunity.

The Lim lab integrates molecular virology and bioinformatic approaches to understand 1) how the virome shapes the trajectory of infant development, 2) how mother-infant relationships impact the virome and microbiome in HIV disease settings, 3) how metagenomic changes induced by immunosuppression affect transplant outcome, and 4) how viruses temper the homeostasis of the urinary tract in urinary disease. Their research is being used in precision medicine that personalizes the prevention and treatment of diseases to individuals. [The Lim Lab at ASU](#)
Speaker bios

**David Sklar, M.D.**  
**Senior Advisor and Professor, College of Health Solutions**  
**Arizona State University**

David Sklar is the editor of *Academic Medicine* and an emergency physician. He does research in health services and health professions education. He is the former chair of emergency medicine and associate dean of graduate medical education at the University of New Mexico. Dr. Sklar is a professor of health care delivery and senior advisor to the university provost in health policy and health professions education.

**Stavros Kavouras, Ph.D.**  
**Assistant Dean, Graduate Education Professor, Nutrition**  
**College of Health Solutions**  
**Arizona State University**

Stavros Kavouras directs the Hydration Science Lab where he is studying the mechanisms by which water intake impact health and performance. His current research focuses on the effect of water intake on glucose regulation and its implication on children’s hydration and obesity.

Kavouras, the author of more than 130 peer review articles and 7,100 citations (h-index 45) has given lectures in 29 countries. He is a section editor of the *European Journal of Nutrition* and associate editor of *Nutrients, Behavioral Medicine and Frontiers in Nutrition*. Dr. Kavouras is a fellow of the American College of Sports Medicine and the European College of Sports Science as well as elected member of the American Society of Nutrition, the Obesity Society, and the American Physiological Society.

**Dorothy Sears, Ph.D.**  
**Professor, College of Health Solutions**  
**Arizona State University**

Dorothy Sears is a professor of nutrition at Arizona State University College of Health Solutions. She earned a bachelor’s degree at the University of Southern California and a doctorate in molecular biology and genetics at Johns Hopkins University School of Medicine. She has conducted cardiometabolic disease and cancer research since 1995 and is an internationally recognized expert. Her scope of study spans the molecular to population health levels. Her transdisciplinary research approach incorporates dietary and behavioral intervention, systems biology, metabolomics, gut microbiome, epigenetics, gene expression profiling, and single gene analyses in humans and rodent models.

Dr. Sears aims to identify and characterize novel health-promoting behaviors, therapeutic targets, and diagnostic tools. Dr. Sears is actively researching the health benefits associated with nightly fasting and circadian alignment of food intake. She is lead investigator of multiple clinical studies of the metabolic and vascular effects of prolonged sitting funded by the National Institutes of Health and the American Heart Association. Her collaborations include investigators from research fields and institutions across the globe. She is passionate about mentoring trainees of all levels and supporting diversity in STEMM (Science, Technology, Engineering, Math, and Medicine). She is actively engaged in community service, advocacy, and outreach related to her research and professional interests.
Speaker bios

**Kelly Cue Davis, Ph.D.**  
*Associate Professor, Edson College of Nursing and Health Innovation*  
*Arizona State University*

Kelly Cue Davis is an associate professor in the Edson College of Nursing and Health Innovation at Arizona State University as well as a licensed clinical psychologist. For over 20 years, Dr. Davis has researched the effects of alcohol and drug consumption on sexual violence victimization and perpetration, sexual risk, and sexual health. She has served as principal investigator or co-Investigator on several research projects related to sexual violence and sexual risk, with grant funding from the National Institutes of Health and Department of Defense totaling over $30 million, including the prestigious NIH MERIT award.

Her recently funded projects include an evaluation of Safer Bars, a bystander intervention prevention program that will be implemented within alcohol serving establishments in the state of Arizona, as well as a laboratory-based study of young men’s alcohol-facilitated coercive condom use resistance, including “stealthing” (nonconsensual condom removal). Dr. Davis has over 100 publications in this area, has presented her work on sexual violence and risk both nationally and internationally, has served as an expert witness for alcohol-involved sexual assault criminal court cases, and is a Fellow of the American Psychological Association.

**William Corbin, Ph.D.**  
*Professor and Director of Clinical Training*  
*Department of Psychology*  
*Arizona State University*

William Corbin is professor and director of clinical training in the Department of Psychology at Arizona State University where he has been on the faculty since 2009. His federally funded program of research utilizes basic experimental and longitudinal survey research to inform the development of both behavioral and pharmacological prevention/intervention approaches to reduce harms associated with substance use.

He has more than 100 published journal articles, books, and book chapters in the area of addictive behaviors, and has published extensively with his graduate students and postdoctoral fellows. Dr. Corbin is currently an Assistant Field Editor for the *Journal of Studies on Alcohol and Drugs*, an Associate Editor for *Psychology of Addictive Behaviors* and is the current Secretary for the Research Society on Alcoholism. He is also the co-leader of the Arizona Well Being Commons division on Mental Health, Substance Abuse, Crime and Behavior Change.
Rita Sattler, Ph.D.

Associate Professor of Neurobiology and Neurology
Co-Director, Interdisciplinary Graduate Program in Neuroscience
Director, Barrow Neurological Institute Research Internship Program
Barrow Neurological Institute

Rita Sattler is an associate professor at the Barrow Neurological Institute in Phoenix, AZ with over 25 years of neuroscience research experience. She received her master and doctorate in Neurophysiology from the University of Toronto in Toronto, Canada where she studied mechanisms of neurodegeneration in stroke. As a postdoctoral fellow at Johns Hopkins University, Dr. Sattler focused her research on studies of synaptic biology and glutamate receptor function.

She then served as the lead scientist for a small startup Hopkins-initiated biotech company for four years (Psyadon Pharmaceuticals, Inc., former Ruxton Pharmaceuticals, Inc.), overseeing assay development and SAR studies of lead compounds for transcriptional activation of glutamate transporters as therapeutic targets for ALS. From there, Dr. Sattler joined the Johns Hopkins University Drug Discovery Center to strengthen her expertise in preclinical drug discovery.

With this strong translational neuroscience background, Dr. Sattler started her first faculty position in 2012, focusing on mechanisms of neurodegeneration in ALS and FTD using varying disease models, including human patient-derived induced pluripotent stem cells (iPSCs) differentiated into different subtypes of neurons and glia cells. Her current research combines her expertise in neurodegeneration and synaptic function and is aimed at the elucidation of synaptic dysfunction in neurodegenerative disorders, including amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD). She works with human patient-derived induced pluripotent stem cells as a disease model and employs state of the art molecular, biochemical and imaging technologies to identify novel disease pathways and therapeutic targets.

Jason M. Newbern, Ph.D.

Associate Professor, School of Life Sciences
Arizona State University

Jason Newbern’s laboratory studies the cellular and molecular mechanisms that direct the formation of the brain and spinal cord. The team uses genetic, cellular, and biochemical techniques to investigate the development of neurons and glia, primarily in the mouse nervous system. Their laboratory is particularly interested in understanding the neuropathogenesis of a family of developmental syndromes, known as the RASopathies. Intellectual disability, developmental delay, cognitive deficits, and seizures are often observed in individuals with a RASopathy. These syndromes are typically caused by genetic mutations in regulators of intracellular signaling via the Ras/Raf/MEK/ERK cascade, better known as the classical Mitogen Activated Protein Kinase (MAPK) or Extracellular Regulate Kinase 1/2 (ERK1/2) pathway. Abnormal activation of ERK1/2 may also be involved in schizophrenia and autism spectrum disorders.

Dr. Newbern’s laboratory is currently utilizing genetically modified mice to study precisely how ERK1/2 directs the formation of cortical excitatory and inhibitory circuits, in addition to the effects of RASopathy-linked mutations on these processes. The team is also exploring ways to reverse the pathological consequences of aberrant ERK1/2 activity with the goal of stimulating neurological recovery.
Karen Anderson, M.D., Ph.D.

**Professor, Biodesign Virginia G. Piper Center for Personalized Diagnostics**  
**School of Life Sciences, Arizona State University**  
**Medical Oncologist, Associate Professor of Medicine, Mayo Clinic Arizona**

Karen Anderson is focused on understanding how the immune response can be used to detect and alter cancer development. To create an effective cancer immunotherapy, Anderson’s team identifies target antigens and pushes scientific understanding of the mechanisms of immune regulation that limit effective immunotherapy.

Before moving to Arizona in 2011, Anderson was an instructor in medicine at Harvard Medical School’s Dana Farber Cancer Institute where she also completed her clinical fellowship in adult hematology and oncology and served as a medical oncologist at the Breast Oncology Center. While at Dana Farber, Anderson led two investigator-initiated breast cancer vaccine trials. One challenge in tumor immunology is how to measure immune responses across the proteome. Antibodies to tumor antigens can be detected in the blood of cancer patients and be used as biomarkers for early cancer detection.

Anderson’s team uses custom protein microarrays and bead-array assays to detect these antibodies and has identified novel biomarkers for the detection of breast, ovarian, and human papillomavirus-associated cancers.

Anderson developed novel assays for the detection of serum antibodies to the HPV16 proteome, which are strongly detected in HPV-associated oropharyngeal cancer patient sera. She is evaluating these antibodies as diagnostic and prognostic biomarkers.

Anderson is board certified in internal medicine and medical oncology. She has written more than 40 peer-reviewed articles, reviews, book chapters and editorials. Anderson serves as committee co-chair of the National Cancer Institute’s Early Detection Research Network Breast/Gyn Cancers Collaborative Group and is a member of NCI’s Cancer Biomarkers Study Section. She is a member of the American Association for Cancer Research and the American Society of Clinical Oncology.

Carlo Maley, Ph.D.

**Associate Professor, Biodesign Center for Biocomputing, Security and Society**  
**Faculty Associate, Biodesign Center for Immunotherapy, Vaccines and Virotherapy**  
**Faculty Associate, Biodesign Center for Mechanisms of Evolution**  
**Arizona State University**

Carlo C. Maley is the director of the Arizona Cancer and Evolution Center, the first president of the International Society for Evolution, Ecology and Cancer, co-founder and director of the Center for Evolution and Cancer at UCSF and was a member of the advisory board of the National Evolutionary Synthesis Center. He is currently an associate professor in the Biodesign Institute and the School of Life Sciences at Arizona State University.

Maley's work on the evolutionary dynamics underlying cancer progression and susceptibility have contributed to the field of evolution and cancer and the understanding of somatic evolution. Maley is known for his work on the evolutionary dynamics underlying tumor progression and the puzzle of how large and long-lived organisms suppress cancer, also known as Peto's Paradox. He pioneered the use of diversity measures from ecology to profile tumors, so as to predict which benign tumor is likely to become cancerous, and to predict survival of cancer patients. Maley's team uses use genomic data mining, phylogenetics, computational modeling, as well as wet lab techniques to solve these problems in order to develop better methods to prevent cancer and improve cancer management.

Maley has helped to bring together the cancer biology community and the evolutionary biology community through the activities of the Center for Evolution and Cancer at UCSF and more recently the International Society for Evolution, Ecology and Cancer, including planning and hosting the International Biannual Evolution and Cancer Conferences.
Tamara Underiner, Ph.D.
Associate Dean for Academic Affairs, Graduate College
Associate Professor, School of Film, Dance and Theatre
Arizona State University

Tamara Underiner is the Associate Dean for Academic Affairs in the Graduate College and founding director of the doctoral program in Theatre and Performance of the Americas. As associate dean, she convenes the University Graduate Council; oversees the Graduate Fellows initiative for interdisciplinary curriculum development and the Preparing Future Faculty and Scholars program; and supports the general professional development activities of the Graduate College for graduate students and postdoctoral fellows.

In February 2020, Dr. Underiner and a multi-disciplinary team received an award to establish a National Endowment for the Arts Research Lab. The award supports the Creative Health Collaborations Caregiving Research Lab, which will examine the role of three art forms in three caregiving situations: how theater might support families of children with special needs; how a digital app for journaling can assist families of cancer patients; and how music aids families of veterans with post-traumatic stress disorder.

The new Caregiving Research Lab supported by the NEA will bring community arts partners together with researchers in Herberger Institute for Design and the Arts, nursing, health solutions and humanities to help caregivers access creative resources not otherwise available to them and their loved ones. Parallel to the lab’s research activities will be the development of collaborative research and practice frameworks that will be of use to others interested in working in this intersectional space.

With colleague Stephani Etheridge Woodson, Dr. Underiner is the co-editor of the collected volume, Theatre, Performance and Change (Palgrave Macmillan, 2018). She is the author of Contemporary Theatre in Mayan Mexico: Death-Defying Acts (University of Texas Press, 2004), and has published essays in Theatre Journal, RISE: The Journal of Applied Theatre, Signs, Baylor Journal of Theatre and Performance, TDR: The Drama Review, and critical anthologies from academic presses in the U.S., Mexico and Canada. She is active in the Association for Theatre in Higher Education, the Alliance for Arts in Research Universities (a2ru), the American Society for Theatre Research, and the board of the Hemispheric Institute for Performance and Politics, based in New York City.
Carolyn Compton, M.D., Ph.D.

Dr. Carolyn Compton is an academic pathologist specializing in gastrointestinal disease. She is a Professor of Life Sciences at Arizona State University, a Professor of Laboratory Medicine and Pathology at the Mayo Clinic School of Medicine, and a Professor of Pathology at the Johns Hopkins Medical Institutions. She is the Chief Medical Officer of both the National Biomarker Development Alliance and an Affiliated Scholar in the ASU Healthcare Delivery and Policy Program.

Dr. Compton is the Medical Director of the ASU Biodesign Clinical Testing Laboratory. Nationally, she serves as the Chair of the Precision Medicine Core of the AJCC and the Chair of the Preanalytics for Precision Medicine Project Team of the College of American Pathologists.

She is the editor-in-chief of the Nature review journal Current Pathobiology Reports. Dr. Compton is a former Professor of Pathology at Harvard Medical School, Chief of Gastrointestinal Pathology at Massachusetts General Hospital, and Pathologist-in-Chief of the Boston Shriners Children’s Hospital. More recently she has served as the CEO and President of the Critical Path Institute (2012), the Director of the Office of Biorepositories and Biospecimen Research and the Director of the Innovative Molecular Analysis Technologies program at the National Cancer Institute (2005-2011), and the Strathcona Professor and Chair of the Department of Pathology at McGill University and Pathologist-in-Chief of the McGill University Health Center.

Vel Murugan, Ph.D.

Vel Murugan is an associate research professor at the Biodesign Virginia G. Piper Center for Personalized Diagnostics at Arizona State University. He brings wealth knowledge from both industry and academia. In addition to basic research his group focuses on developing and commercializing diagnostic tests. Murugan’s group utilizes integrated approach to study change in genomic architecture, gene expression upon exposures to agents related to weapons of mass destruction. Before joining, the Biodesign Institute, Murugan worked as the director of assay development at Sanaria Inc., a biotechnology company developing vaccines protective against malaria.

The primary focus of his research is to understand the mechanism underlying genomic changes, especially epigenetic modifications and change in gene expressions upon environmental insults and different disease conditions. His group is involved in the development of diagnostic tests to detect and quantify absorbed dose of radiation for Biomedical Advanced Research and Development Authority (BARDA). The Defense Advanced Research Projects Agency (DARPA) selected his group as one of the performers for developing a point of care diagnostics to detect exposures to weapons of mass destruction.

As a molecular biologist, he is leading a high throughput cloning team engaged in making expression clones for storage and distribution by DNASU.

Murugan earned both bachelor’s degree in zoology and master’s degree in biology from Madurai Kamaraj University. He holds a PhD in molecular biology from Tata Institute of Fundamental Research and a master’s in business administration from Northeastern University. Murugan completed his postdoctoral training from The University of Texas at Austin and Dana Farber Cancer Institute at the Harvard Medical School.
Will Humble

Will Humble is a long-time public health enthusiast and is currently the Executive Director for the Arizona Public Health Association (AzPHA). His 30 years in public health include more than two decades at the Arizona Department of Health Services, where he served in various roles including as the Director from 2009 to 2015. Prior to being appointed Director, he worked in various capacities in the public health preparedness service line. Most recently, he was a health policy director at the University of Arizona from 2015-2017. He continues to be involved in health policy in his role with AzPHA and as Adjunct Faculty with the UA Mel & Enid Zuckerman College of Public Health.

He has a BS in Marketing from NAU, a BS in Microbiology from ASU, and a Master’s in Public Health from the University of California at Berkeley. He was awarded an Honorary Doctorate of Science from the University of Arizona in 2015 for engaging partnerships between academic and executive public health.

Humble is active in the community and his home life, serving on the Board of Directors of the Scottsdale Training and Rehabilitative Services (STARS) and the Arizona Hospital and Healthcare Association (AzHHA). Will is a believer in using evidence-based health policy as a means to improving health outcomes and in leading and managing with emotional intelligence.

Brenda Hogue, Ph.D.

Brenda Hogue is a virologist who studies how coronaviruses, a large family of RNA viruses, that includes severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), assemble at intracellular membranes and their interplay with host cells that ultimately results in disease. Professor Hogue and her team use state-of-the-art molecular approaches, virus reverse genetic systems and bioimaging, including confocal microscopy, cryo-electron microscopy (-EM) and X-ray free electron lasers (XFELs), to address structure/function and mechanistic questions about how coronaviruses assemble their proteins and RNA genome to form infectious particles. The lab studies a class of proteins known as viroporins. Ongoing research is directed at understanding the role of coronavirus viroporins in virus assembly and their contribution to development of inflammation during infection. The overall goal is to use information gained from the research to identify targets and use structure-based design for therapeutic and vaccine development.

Bertram Jacobs, Ph.D.

Bertram Jacobs is a professor of virology with the School of Life Sciences. He is also a member of Bodesign Institute’s Center for Immunotherapy, Vaccines and Virotherapy, where his research is focused on developing a vaccine for HIV — one that prevents infection or extends the lives of HIV patients. Jacobs also leads a group of students every summer to sub-Saharan Africa to teach AIDS prevention to the international community.

Jacobs is one of the world’s foremost experts on a poxvirus called vaccinia, a cousin of the smallpox virus. He has genetically engineered vaccinia as a vehicle against a number of infectious agents, bioterrorism threats, cancer, and other viruses, including HIV. He also assists HIV/AIDS-related support organizations. He currently serves on the Board of Director’s for Aunt Rita’s Foundation, on the Advisory Board for Support for International Change, and on the Board of Directors for HEAL.
Mara Aspinall

Mara G. Aspinall is a healthcare industry leader and pioneer committed to active civic involvement. She is Managing Director and Co-Founder of BlueStone Venture Partners, a venture fund investing in life sciences in the US Southwest. She is also Managing Director of the Health Catalysts Group, a consulting firm for diagnostics and health tech firms, publishing the popular *Health Catalysts Diagnostics Year in Review*. She is a member of the Board of Directors of Abcam plc (ABC), Allscripts (MDRX), Castle Biosciences (CSTL), Orasure (OSUR), and Blue Cross Blue Shield Arizona. Aspinall is certified in Cybersecurity Oversight from Carnegie Mellon University.

Aspinall is co-author of The Rockefeller Foundation National COVID-19 National Testing & Contact Tracing Action Plan as well as Effective Testing and Screening for Covid-19 Report. She is also curator for TestingCommons.com – the most comprehensive database of COVID-related tests on the market or in development worldwide. As President and CEO of Ventana Medical Systems, a billion-dollar division of The Roche Group, Aspinall led her world-class team to new financial success, more than two dozen major instrument and assay launches as well as global leadership in companion diagnostics.

Previously, Aspinall was President of Genzyme Genetics and Genzyme Pharmaceuticals. Genzyme Genetics was the leading provider of diagnostic testing and genetic counseling in the oncology and reproductive markets. The business was sold to LabCorp for $1 billion. Genzyme Pharmaceuticals was an international trailblazer in specialized pharmaceutical ingredient manufacturing. Aspinall served on the Health and Human Services Secretary’s Advisory Council on Genetics, Health & Society in the Obama and Bush administrations. With a passion for education on the importance of diagnostics, Aspinall co-founded the Biomedical Diagnostics program at Arizona State University, the first and only program dedicated to Diagnostics as an independent discipline. ASU awarded their first Master degrees in Diagnostics in 2015 and has 100 students matriculating this year.

Aspinall was named Arizona Biosciences Leader of the Year by the Arizona Biotechnology Association and one of “100 Most Inspiring People in Life Sciences” by PharmaVOICE magazine and one of Women Inc’s Most Influential Corporate Board Directors. She started her business career at the strategic consulting firm Bain & Company. Aspinall holds an MBA from Harvard Business School and a BA from Tufts University.

Cindy Jordan

There aren’t many entrepreneurs whose careers include police officer, presidential campaign fundraiser, and founder of two healthcare IT startups.

Throughout each career change, Cindy has followed the same altruistic mantra: Change lives to make the world a better place. In five years as a police officer in the D.C. area, Cindy regularly experienced the definition of a “bad day.” This inspired a career transition to political fundraising where she could enact real change by supporting the issues and causes she’s most passionate about.

Twelve years later she moved to Tucson and began working in healthcare marketing at LP&G as lead strategist. It was during this time that Cindy developed a proprietary referral marketing tool for physicians, Medical Referral Source (MRS). Acquired by The Advisory Board Company in 2013, she successfully exited from her healthcare IT startup for $12.5 million and continued to work on growing MRS, now known as Crimson Medical Referrals, as managing director.

Soon after, she saw a loved one’s physical and mental health decline rapidly from stable to high risk. While caring for them, Cindy learned about gaps in healthcare and the pervasive loneliness and social isolation epidemic affecting vulnerable populations. Vowing to wage a war on loneliness, Cindy was moved to create an impactful solution marrying technology and compassionate human interventions; and in 2017, the Pyx Health app was born. Today, while Cindy’s work is far from done, 93% of Pyx users report feeling healthier, and health plans have seen significant reductions in costs for Pyx patients.
Brad Halvorsen

Brad Halvorsen is Executive Vice President of the Flinn Foundation, a private philanthropy based in Phoenix whose mission is to improve the quality of life in Arizona to benefit future generations. He provides strategic leadership for the Foundation’s program areas, including oversight of Arizona’s Bioscience Roadmap, the Bioscience Entrepreneurship Program, and the Flinn Scholars Program. He previously served as Vice President, Communications and other communications roles.

Brad joined the Foundation in 1989 after serving as a press aide and campaign press secretary to U.S. Senator Dennis DeConcini. He graduated magna cum laude from Arizona State University’s Walter Cronkite School of Journalism and Telecommunications. He has served on the boards of directors of the Arizona Grantmakers Forum, the Arizona Bioindustry Association, and the Communications Network for Philanthropy, a national organization of communications professionals at foundations.

Amanda Morris

Amanda Morris is a multimedia bioscience reporter for the Arizona Republic. She has been reporting on bioscience news for the Arizona Republic since October 2019 and has written numerous articles related to COVID-19, including coverage on vaccine and drug trials against the virus. Prior to joining the Arizona Republic, she has worked at the Associated Press, NPR, CNN, and the Hartford Courant and is a graduate of New York University.

Alex Li

Alex Li is a VR/AR developer and 3D Artist at the Arizona Republic who has an enthusiasm to explore how emerging technologies can be applied in service of bioscience reporting. Alex received his education at the University of Southern California with a Master’s in Specialized Journalism. He also holds a Bachelor’s in Journalism from Missouri School of Journalism.

Unlike most journalists, Alex chose a more technical career approach by spending most of his time and energy learning and mastering emerging technologies, such as Augmented and Virtual Reality, 3D modeling, photogrammetry, front-end development, etc. Alex is committed to advancing 3D and spatial storytelling that helps people better understand abstract topics. Alex is also a big fan of tennis, especially on clay court.

Allison Otu

Allison Otu is Executive Director for Corporate and Community Relations for The University of Arizona Health Sciences. In this role she leads capacity building efforts with local stakeholders at the City, chambers, economic councils and respective organizations. She serves on the Board of Directors for Downtown Phoenix Partnership, Inc. and Arizona School for the Arts.

Additionally, Otu is the co-chair of the Greater Phoenix Economic Council Health Innovation Committee and was appointed by City of Phoenix Mayor Kate Gallego to the Phoenix Women’s Commission in 2019. Otu currently serves as the Vice Chair of Marketing, Communications and Public Affairs on the Association of American Medical Colleges Group on Institutional Advancement Steering Committee.
Discussion Leader bios

**Melissa Sevigny**

Melissa Sevigny is the science reporter at KNAU (Arizona Public Radio) in Flagstaff, Arizona. She has a bachelor's degree in environmental science from the University of Arizona and an MFA in Creative Writing from Iowa State University. Her stories have run nationally on NPR's Morning Edition, All Things Considered, Science Friday, and Here & Now, and she’s received regional Edward R. Murrow awards for excellence in radio reporting.


**Keith Crnic, Ph.D.**

Keith Crnic chairs the Scientific Advisory Committee for the Institute for Mental Health Research. He is the retired Department Head and Professor of Psychology at Arizona State University; and has held faculty appointments at the University of Washington School of Medicine, Department of Psychiatry and Behavioral Sciences; and the Department of Psychology, Penn State University. Dr. Crnic is a clinical child psychologist who has published more than 140 scientific papers on child and family mental health, and served on scientific review committees at the National Institute of Health and the Maternal and Child Health Bureau of the US Public Health Service.

**Mitzi Krockover, M.D.**

Mitzi Krockover is Principal and Senior Consultant of SSB Solutions, a health care management consulting, development and investment firm. She is a Managing Director of Golden Seeds, an angel investment organization dedicated to funding early-stage women-led companies, serving as co-chair of the Golden Seeds Health Care Sector Group and founding member of the Arizona Chapter of Golden Seeds. Prior to her activities with Golden Seeds, Dr. Krockover was the founding Director of the Health Futures Council at Arizona State University (HFC).

As Chair of the Board of the Institute of Mental Health Research (IMHR), Dr. Krockover helps lead the organization to support mental health research. IMHR's mission is to partner with Arizona researchers to support broad-based, innovative mental health research. IMHR is the only statewide, non-profit organization dedicated to mental health research in the United States.

Dr. Krockover has been a leader in the area of women's health and women's issues. She was the Iris Cantor-UCLA Women's Health Center's founding Medical Director; the Center was designated a Center of Excellence by DHHS. She then served as Vice President of Women's Health for Humana Inc., where she served as the company's chief healthcare strategist and spokesperson for women's health. She also serves on the Executive Committee of the Women's Health initiative of Springboard, an organization that provides investment in women-led companies in the life sciences and tech.

Other non-profit affiliations include Take the Lead, the Washington University Phoenix Regional Cabinet, the Institute for Public Health at Washington University National Council, and the Health Futures Council at ASU. A graduate of Washington University in St. Louis with a BA in Arts and Sciences, Dr. Krockover received her medical degree at the University of Texas Health Science Center at San Antonio. She completed her residency in internal medicine at Northwestern University.
Discussion Leader bios

**Athena Aktipis, Ph.D.**

Athena Aktipis is an Associate Professor in the Department of Psychology at Arizona State University, co-Director of The Human Generosity Project, and Director of the Interdisciplinary Cooperation Initiative at ASU. She studies how systems effectively scale up cooperation and avoid being undermined by cheating. Her work encompasses many different systems and methods, from studying human sharing in The Human Generosity Project to cellular cooperation and cheating in multicellular bodies. Aktipis is the author of *The Cheating Cell: How Evolution Helps Us Understand And Treat Cancer* (Princeton University Press). She is also the chair of the Zombie Apocalypse Medicine Meeting and is the host of the podcast, Zombified.

**David Engelthaler, Ph.D.**

David Engelthaler is an Associate Professor and the Director of TGen North, the infectious disease arm of the non-profit Translational Genomics Research Institute. He currently oversees the TGen North Clinical Laboratory that was stood up in March 2020 to specifically provide COVID-19 testing and has provided tests for more than 40,000 Arizonans. Dave also oversees a number of research groups working on the development of analytical tools to detect and characterize infectious diseases such as tuberculosis, valley fever, MRSA, and others. His team at TGen also provides genomic services to CDC and local health departments.

He has published more than 130 scientific papers and chapters on epidemiology, disease ecology, genetics, and microbiology and he has two dozen patented inventions, including a Valley Fever molecular assay that recently received FDA 510k clearance. Dave received his Masters in Microbiology from Colorado State University and his Ph.D. in Biology at Northern Arizona University. Dave was previously the Arizona State Epidemiologist and a biologist for CDC in Ft. Collins. Dave has worked in federal, state and local government, has started for-profit and non-profit businesses. Dave sits on a number of local and national Boards and recently he led the establishment of Flagstaff, AZ as “America’s First STEM City”.

**Crystal Hepp, Ph.D.**

Crystal Hepp is an Assistant Professor of Informatics at Northern Arizona University, in the School of Informatics, Computing, and Cyber Systems and an Assistant Director of the Pathogen and Microbiome Institute. She received her Ph.D. in Molecular and Cellular Biology from Arizona State University in 2013. Her research team focuses on using genomics to understand how pathogens move over time and space.

Hepp’s research over the past few years has focused heavily on West Nile Virus and St. Louis Encephalitis Virus circulation throughout the southwestern United States. In response to the pandemic, she has repurposed her laboratory to focus on detection of SARS-CoV-2 and other clinically relevant viruses in sewage from Northern Arizona communities.

**Jason Sahl, Ph.D.**

Jason Sahl is an Assistant Professor of Biology at Northern Arizona University and Assistant Director of the Pathogen and Microbiome Institute. His research focuses on infectious disease genomics and bioinformatics. Most of his work has focused on the genomics and ecology of public health bacterial pathogens, biothreat agents, as well as emerging fungal and viral pathogens, including SARS-CoV-2. He has also developed algorithms in comparative genomics to process complex sequencing datasets and to provide strain-level resolution from metagenomics datasets. Currently, he is applying these tools to track SARS-CoV-2 in wastewater, providing an early warning system for potential community transmission.
Discussion Leader bios

**Adam Gushgari, Ph.D.**

Adam Gushgari is CEO and Co-founder of AquaVitas. The company focuses on providing useful, scientifically defensible wastewater-based epidemiology datasets to clients for use in mitigation and prevention of health crises - through a patented wastewater sampler specifically developed for wastewater monitoring for epidemiological purposes. Since the onset of the COVID-19 pandemic, the company’s services have become a paramount tool that both municipal and private clients have leveraged to reduce the spread of disease within their communities or businesses.

During his master’s degree program at Texas A&M University, he participated in a regional study regarding water quality, use, and availability in the Rio Grande river basin, involving both literature and field research. Following this comprehensive research project, he began working in the Biodesign Center for Environmental Health Engineering at Arizona State University, focusing on Urban Metabolism Metrology. Throughout his doctoral degree studies, he focused on assessing population drug use through wastewater monitoring and assessing exposure to carcinogenic N-nitrosamines in the built and natural environments. Following his doctoral thesis defense, in 2018, he assisted in establishing the first publicly acknowledged and accessible wastewater-based epidemiology dashboard and project in Tempe, Arizona to track opioid and illicit narcotic use within the city – a project which is still in existence today.

**Kyle Freese, Ph.D.**

Kyle Freese is the Chief Epidemiologist for STChealth, an information exchange and health intelligence company headquartered in Phoenix, Arizona. He holds a bachelor’s degree in Physiology, a Master's degree in Public Health in Behavioral and Community Health Sciences, and a Ph.D. in Epidemiology. He is a member of the American College of Epidemiology, the Society for Epidemiologic Research, and the American Public Health Association. He has published numerous peer-reviewed articles in academic journals and is a regular opinion contributor for the Arizona Republic and Phoenix Business Journal. He is the epidemiology lead for the SAFE Return-to-Work program and directs and designs the COVID testing and surveillance solutions for client partners.

**Charlene Tarver, JD, LL.M., CEBS**

Charlene Tarver is the founder and executive director of The Women’s Economic Institute, Inc—a community-based Think Tank committed to closing the wealth gap for minority women entrepreneurs and girls through policy, technical assistance, and economic development. Tarver is also convener of the Black AZ COVID-19 Task Force—an advocacy initiative and consortium of African American educators, physicians, public officials, CBOs and public health administrators. The Task Force is responsible for lobbying Arizona’s Governor and DHS to increase COVID-19 testing in marginalized communities, release race and ethnic data, place moratoriums on rental evictions and utility shutoffs, and issue emergency assistance for small, minority-owned companies.

Tarver has extensive experience advocating locally and nationally for vulnerable and impoverished populations. From HIV/AIDS and homelessness, to health/pay equity, and criminal justice reform, Tarver has been a tireless voice for social and racial justice. She has a passion for community engagement and corporate philanthropy and is a Fellow of Leading for Change and the Flinn Brown Civic Leadership Academy, a member of Valley Leadership, and serves on the Phoenix Industrial Development Authority Board, the Maricopa County Sheriff’s Advisory Board, and the Georgetown University Alumni Advisory Board which addresses equity issues for Black staff, faculty, and students university-wide. Tarver’s prior Mayoral appointments include the City of Phoenix Pension Reform Task Force and the City of Phoenix Parks and Recreation Board. Tarver is also the founding president of the National Coalition of 100 Black Women, Inc., Phoenix Metropolitan Chapter.

Tarver holds a BA in sociology from NYU, a JD from the University at Buffalo School of Law, and an LL.M. in Tax and CEBs from Georgetown University Law Center. She is the author of *Unleashing Your Powerhouse* and may be reached at www.womenseconomicinstitute.com or 480-406-8324.
**Discussion Leader bios**

**Julie A. Baldwin, Ph.D.**

Julie A. Baldwin is a Regents' Professor and Director of the Center for Health Equity Research at Northern Arizona University. She is Principal Investigator for the Southwest Health Equity Research Collaborative. Dr. Baldwin earned her doctorate in Behavioral Sciences and Health Education in 1991 from the Johns Hopkins University School of Hygiene and Public Health. For nearly 15 years, she worked primarily with tribal communities in northern Arizona to design culturally relevant health promotion programs for youth and their families. From 1994-2004, she served as a tenured faculty member at Northern Arizona University, with a joint appointment in the Mel and Enid Zuckerman Arizona College of Public Health. She joined the faculty at the University of South Florida (USF) College of Public Health in the Department of Community and Family Health in 2005. She returned to Northern Arizona University in August 2015 and is now a Regents’ Professor in the Department of Health Sciences and the Director of the Center for Health Equity Research.

Dr. Baldwin’s research over the years has focused on both infectious and chronic disease prevention. Cross-cutting themes which have characterized her work include: utilizing community-based participatory research approaches, working with underserved and/or marginalized populations, and addressing health disparities by developing and implementing culturally-centered public health interventions. She has been PI or Co-PI of several federally funded projects from such agencies as CDC, NIMH, NIAAA, NIDA, NIMHD, NCI, the Robert Wood Johnson Foundation and HRSA/AMERSA-SAMHSA/CSAT.

For almost 30 years, Dr. Baldwin has had a consistent program of health promotion research for children and youth, with a special emphasis on working with American Indian adolescents and their families. She continues to contribute significantly to this field of research today, as the Co-Director of a NIDA Research Education grant, the “Institute for Translational Research Education in Adolescent Drug Abuse” and recent Co-Director of another NIDA grant entitled, the “Intertribal Talking Circle for the Prevention of Substance Abuse in Native Youth.” Dr. Baldwin is currently the PI of the National Institute on Minority Health and Health Disparities funded RCMI, entitled, “The Southwest Health Equity Research Collaborative” (U54MD012388). This project is designed to build the capacity of Northern Arizona University in biomedical, clinical, and behavioral research to address health disparities in the Southwestern US. She is also currently a member of the National Academies of Sciences, Engineering and Medicine Board on Population Health and Public Health Practice and the Roundtable on the Promotion of Health Equity.

As a citizen of the Cherokee Nation of Oklahoma, she has made a life-long commitment to serving diverse communities and to advocating for health promotion programs for children, adolescents and families.

**Valerie Harris, Ph.D.C.**

Valerie Harris is the Clinical Lab Manager for the ASU Biodesign Clinical Testing Lab (ABCTL). ABCTL was formed in order to rapidly respond to the emerging COVID-19 pandemic within the state of Arizona, and has quickly grown to be one of the highest-throughput clinical diagnostic labs performing COVID-19 tests in Arizona with over 3,000 tests being performed per day. ABCTL was also the first lab in the Western US to perform saliva-based testing, pioneering a less-invasive way of monitoring the presence of SARS-CoV-2 within the population. Harris is an interdisciplinary scientist formally trained in Molecular Biology and Veterinary Cancer Epidemiology. Previously, she worked as a wildlife field biologist studying non-infectious disease epidemiology in Africa, Mexico, Thailand and Central America. She is completing her Ph.D. in Biological Design from the School of Biological and Health Systems Engineering at Arizona State University in the Spring of 2020.
**Tomás León**

Tomás León, MBA, is senior vice president, marketing and strategy, for Equality Health. Equality Health, a Phoenix-based company, is the nation’s leading integrated healthcare delivery system focused solely on improving care delivery through the lens of culture.

With more than two decades of experience in diversity and inclusion, community mobilization, business development, health equity, policy advocacy, philanthropy and marketing communications, Tomás brings an innovative, purpose-driven approach to advancing equity, diversity, and inclusion in healthcare. In his recent role as the president and CEO of the Institute for Diversity in Health Management, an affiliate of the American Hospital Association, he created and launched an award-winning equity of care campaign to eliminate health care disparities that engaged nearly 1,500 hospitals and health systems and 50 state hospital associations in this national initiative.

His previous senior executive roles include president and CEO of the People of Color Network, Inc.; president of Friendship Community Mental Health Center; equity partner of MarCom Worldwide LLC; vice president of the Community Foundation of Southern Arizona, president and CEO of the Tucson Hispanic Chamber of Commerce, executive director of Youth On Their Own, Inc.; and associate director of the Border Health Foundation.

As a tireless leader on behalf of diverse communities and populations, Tomás has been recognized with numerous awards for his work and advocacy, including Diversity MBA’s Top 100 Under 50 Emerging Leaders Award, Wellness Council of Arizona’s Executive Champion for Worksite Wellness Award, and achievement honors from the Arizona Healthcare Executives and the Diversity Leadership Alliance. An expert on nonprofit and health care management, Tomás has been invited to teach a master’s level course at the University of Arizona and continues to speak across the country as a subject matter expert. He has served on numerous boards and committees, including the U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Arizona Council of Human Services Providers, Arizona Health Care Cost Containment System and the Arizona Department of Health Services. He holds a bachelor’s degree in psychology from The University of Arizona and an MBA from the University of Phoenix. He can be reached at tleon@equalityhealth.com, (602)-799-4382 or https://www.linkedin.com/in/tomasleon/.

**Christian Bime, M.D.**

Christian Bime is an Associate Professor of Medicine and Clinical Translational Sciences at the University of Arizona – Tucson. He is a Pulmonary and Critical Physician and Medical Director of the Medical Intensive care Unit at Banner University Medical Center – Tucson.

In addition to his leadership role and bedside care for critically ill patients, including COVID-19 patients in the ICU, he has an active NIH and Industry funded research program to study Acute Respiratory Distress Syndrome (ARDS) which happens to be the most severe complication of SARS-CoV-2 infection.

His translational research program seeks to personalize therapies for ARDS caused by COVID-19 pneumonia as well as non-COVID-19 associated ARDS. His work also seeks to identify diagnostic and prognostic biomarkers in acute critical illnesses. In partnership with researchers across the country, he is participating in an NIAID supported Network to collect data on a cohort of COVID-19 patients. This data will perform an immunophenotyping assessment that will help inform recommendations for COVID-19 care and hopefully identify new targets and optimal timing of experimental treatments.
Paul Coleman, Ph.D.

Dr. Paul Coleman is a research professor at the ASU-Banner Neurodegenerative Disease Research Center. He attended elementary, middle and high school at Friends Seminary in New York and then obtained an A.B. degree magna cum laude from Tufts. He next earned a Ph.D. in physiological psychology from the University of Rochester. After military service at the Army Medical Research Laboratory, Ft. Knox, KY, he completed a fellowship at Johns Hopkins School of Medicine. He spent several decades as a Full Professor at the University of Rochester School of Medicine during which time he was Director of the University of Rochester Medical Center Alzheimer’s Disease Center and Director of an NIH Training Program in Neurobiology of Aging. During this time he also spent time at Cold Spring Harbor Laboratory. While at the University of Rochester he trained a number of students who are now Professors throughout the United States and Europe. In 2007 he moved his laboratory to the Banner Sun Health Research Institute. In 2015 he moved his laboratory to the Neurodegenerative Disease Research Center at the Biodesign Institute, Arizona State University.

Ever since Dr. Coleman’s first publication on Alzheimer’s disease that indicated continuing neuronal plasticity in the aging human brain and loss of this plasticity in Alzheimer’s disease (Science, 1979) his work has focused on differentiating changes in the brain in Alzheimer’s disease from changes related to normal, non-demented ageing. His initial studies in this area were based on quantitative Golgi studies of dendritic extent in human and rodent brains. Feeling a need to be able to competently expand into studies using molecular biology, he spent much of two summers at Cold Spring Harbor Laboratories learning molecular biology and molecular biology methods. One of these summers resulted in the first publication (with Jim Eberwine in PNAS) of a method of profiling gene expression in single identified neurons. Most recently, Dr. Coleman’s work has expanded into the realm of epigenetics. This work is successfully demonstrating that reduced transport of epigenetic molecules from the cytoplasm into the cell nucleus is an early key event in the cellular pathology of Alzheimer’s disease. This inability of epigenetic molecules to translocate to the nucleus, where they should be, has consequences for chromatin structure and consequently, the massive changes in gene expression seen in the AD brain. In addition, the aberrant cytoplasmic localization of epigenetic molecules leads to interactions with transport mechanisms in axons and dendrites, to interactions with mitochondria and to other interactions leading to the pathophysiology of Alzheimer’s disease.

Dr. Coleman has received a number of awards for his work, including a Leadership and Excellence in Alzheimer’s Disease Award from the National Institutes of Health (one of 12 ever awarded) and a Pioneer Award from the National Alzheimer’s Association.

Danielle Brokaw

Danielle Brokaw graduated from Arizona State University in 2020 with a Bachelor’s degree in Molecular Biology and Biotechnology and a minor in statistics. She currently works at the ASU-Banner Neurodegenerative Disease Research Center at the Biodesign Institute, Arizona State University. She works in Dr. Paul Coleman’s laboratory, applying -omics technologies to the study of Alzheimer’s disease and other neurodegenerative disorders. In March, Danielle fell ill with a fever, cough, shortness of breath, and other symptoms consistent with the novel coronavirus-19 (COVID-19). After the initial infection subsided, Danielle began to experience sequelae and received a diagnosis of Post-COVID Syndrome. In her day-to-day life nearly seven months post her initial infection, Danielle still experiences persistent and spontaneous neurological and cardiovascular symptoms. Despite being personally affected by the disease, Danielle is interested in investigating molecular mechanisms behind the neurological symptoms she and others are experiencing as well as exploring the potential longitudinal neurological impact of COVID-19 infection and its combinatorial impact with existing neurodegenerative disorders.
Discussion Leader bios

**Douglas Lake, Ph.D.**

Dr. Douglas Lake is a tumor immunologist who has been at ASU since 2006. Previously, he was at the University of Arizona Cancer Center where he studied anti-tumor T cells and tumor-associated peptides as immunotherapy targets. Currently, he is investigating an enzyme called QSOX1 that is over-expressed in multiple tumor types. Lake was the first to show that this enzyme is important in tumor cell growth, invasion and metastasis. His laboratory is developing chemical and biological inhibitors of QSOX1 with strong therapeutic potential.

His laboratory also studies Valley Fever (Coccidioidomycosis). A pressing clinical need is that Valley Fever lacks an accurate and sensitive diagnostic test while patients are acutely symptomatic. Because the current test relies on an immune response, which is often delayed in this disease, patients can go for as long as three months without a diagnosis. As a result, many patients are inappropriately treated. Lake is developing a test that detects bits and pieces of the fungus in urine in infected patients.

Lake’s research team also studies chimeric antigen receptor T cells (CAR T cells). This technology redirects the immune system toward defined markers on tumors and unleashes T cells as the most potent killers against tumors. The vision for CAR T therapies is to re-activate patients’ immune systems against their tumors, such that they will have lifelong immunity against their tumor and any mutant tumors that might arise.

**Alexandra Lucas, M.D.**

Dr. Alexandra Lucas is the Director of the Cardiovascular Fellowship Research program at Dignity Health Phoenix and a Professor at the Biodesign Institute, Arizona State University. She moved to the University of Florida in 2006 from Canada where she trained at McGill University and the Universities of Alberta and Western Ontario. Dr. Lucas moved from the John P. Robarts’ Research Institute and University of Western Ontario in London, ON, Canada, where she has been a professor and principal investigator studying inflammation in vascular disease.

More recently, Dr. Lucas’s research group has examined the roles of serine protease inhibitors (serpins) as well as the glyocalyx and chemokines in transplant vasculoapthy. This work has led to studies on the roles of serpins and glycosaminoglycans both as mediators and as potential therapeutic targets in transplant rejection as well as in acute inflammatory viral hemorrhagic fevers and in aggressive pancreatic cancer. Dr. Lucas is a co-inventor and co-founding scientist for Viron Therapeutics, Inc., a biotechnology company that has now successfully completed a clinical trial analyzing a viral anti-inflammatory serpin, a purified protein therapeutic as a new class of therapeutic agent, holding 17 patents.

Dr. Lucas is a practicing interventional cardiologist in addition to running an active basic research lab in vascular inflammatory research with over 127 papers and reviews and 18 patents published as well as two new patents in preparation for submission by the University of Florida. She has held AHA and NIH funding. Dr. Lucas has been an active member of the Canadian Society for Atherosclerosis and Thrombosis Board having also served as Editor-in-Chief for two journals and serves on an American Heart Association grant panel as well as reviewing for the NIH. Dr. Lucas has recently been an invited plenary speaker, presenting research from her lab on serpins and the glyocalyx in inflammatory vascular disease and viral sepsis. She is additionally on the editorial board for several journals. Dr. Lucas also practices karate and is a co-director for an annual medical mission to Fort Liberté in Haiti.
**Steve Yozwiak**

Steve Yozwiak is Senior Science Writer at the Translational Genomics Research Institute (TGen), where he has worked since 2008. He produces press releases about biomedical science (more than 600 at tgen.org/news) and produces TGen Today magazine (more than 20 issues at tgen.org/tgen-today). Yozwiak writes internal documents, including more than 20 issues of TGen Insider and more than 30 reports for the TGen Board of Directors/Governors. He works with all news media to arrange interviews with TGen scientists and coordinates with all media, in conjunction with TGen partners and collaborators.

Yozwiak was a reporter and editor at The Arizona Republic (Phoenix) from 1998 to 2008. He covered Northwest Valley retirement communities, emergency services (police and fire), Arizona Legislature and state government agencies, science and the environment. Prior to that he was a reporter and photographer at The Daily Republic (Fairfield, Calif.), where he covered Fairfield City Hall, Solano County, environment, and emergency services. Yozwiak is a graduate of the University of Arizona (Tucson).