Researchers Respond: How COVID-19 Has Impacted Research With Human Tissue

In early 2021, NDRI commissioned a survey to thousands of researchers who have utilized NDRI’s services to gain insight and understanding of the impact of COVID-19 on the use of human tissue in research. Our survey received a very strong response from investigators from the USA, Canada, Western Europe and Asia with representation from academia, industry, government agencies and non-profit institutions. Of the respondents, 79% indicated that the global pandemic impacted their teams’ ability to conduct research using human tissue. These impacts were felt in a variety of ways including restricted access to buildings/labs, hiring freezes, increased safety measures/trainings, centralized deliveries, work-from-home orders, and reduced patient interactions.
The loss and suffering imposed on our nation and the world from COVID-19 have been unimaginable. It seems that all descriptions of the pandemic and its impact have been over-used at this point. Yet, one year into the layers of resulting disruption and devastation, it comes as no surprise that scientific research is the proverbial light at the end of the tunnel.

The late Congressman Paul G. Rogers, a mentor I had the great privilege to work with for many years, is memorialized often for his words: “Without research, there is no hope.” There can be no doubt that without research we would not be lining up by the millions to receive one of three (at this point) FDA-approved vaccines for COVID-19.

The pace of discovery supporting the development of these vaccines has been remarkable. Let’s not lose sight of this “real time” example of the life-saving power of collaboration between academia, industry, government and philanthropy.

I am exceedingly proud of my NDRI colleagues who have remained focused and dedicated to our mission throughout the pandemic. Our service to the research community has not stopped for one day during these trying times. To be sure, there have been countless modifications to how we meet the needs of the researchers we serve. Our commitment is to make certain that any pandemic-related modifications to our operations be managed to ensure the most seamless service possible. As all organizations navigating this terrain have discovered, it has not been easy. Yet, we have learned so much about what we can do in ways that we had not imagined.

Many researchers have engaged in dialogue with us regarding current and emerging needs for biospecimens from those infected with COVID-19. The cover story of this issue of Research Nexus highlights what researchers have been eager to share with us about the impact of the coronavirus on their current work — and on their research plans for the future. NDRI is supporting COVID-19 research, and working with partners to evaluate risk to provide tissue for scientific investigations.

We look forward to continuing to contribute to COVID-19 and other critical research endeavors. Thank you for your continued partnership with NDRI!

Bill Leinweber
President & CEO
National Disease Research Interchange
Researchers Respond: How COVID-19 Has Impacted Research With Human Tissue

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In your research, would you accept tissue/organs from donors who have previously tested positive for COVID-19 and since recovered?

Yes: 24%
No: 12%
Unknown at this time: 64%

Do you believe your future ability to accept organs/tissue for research will require each donor to have received the COVID-19 vaccine?

Agree: 43%
Disagree: 57%

As many daily activities grounded to a halt in response to the global pandemic over the past year, NDRI adjusted course and continued working 24/7 to support research moving forward. Like many organizations, NDRI quickly shifted to remote work for staff safety. Staff kept operations seamless for researchers and partners, continuing to provide consistent service through the turbulent times.

Labs, researchers, recovery partners alter operations
Researchers who receive organs/tissues from NDRI had to alter their operations, and many labs across the country shut down for a period of time. From mid-March through May 2020, many investigators were forced to halt their projects while they were unavailable to process organs and tissues. About half of NDRI’s researcher protocols went on hold.

NDRI’s recovery partners also faced challenges, especially during the Spring of 2020, when massive reductions in the volume of elective and non-essential surgeries led to a reduced volume of donation opportunities from hospitals and eye banks. However, because life-saving transplant surgeries continued consistently, donation opportunities referred to NDRI from organ procurement organizations (OPOs) and tissue banks continued.

Donor screening process changes rapidly
NDRI tissue source site partners had to make rapid changes to their processes to be able to screen donors who are, or who may be infected with SARS-CoV-2, in accordance with guidance from both the Centers for Disease Control (CDC) and Centers for Medicare & Medicaid Services (CMMS). A COVID screening addendum to evaluate risk and COVID testing in some cases is now routine.

NDRI’s new screening process aligns with the needs of its recovery partners to assess potential risk of infection and availability of testing. NDRI’s procurement system, Rhythm, was updated with data fields to notate COVID screening and testing results and efficiently screen and recover tissue according to investigator requirements.

At the time of the survey, 56% of respondents did not believe there to be any significant changes to regulatory, equipment or facility requirements at their institution as a result of the pandemic that would preclude their ability to receive human tissue moving forward. “This insight along with the nearly 50% of surveyed researchers who foresaw an increased need for human tissue in 2021 compared to 2020 is a positive indicator for sustained growth in the biomedical sciences as the world continues to understand the longstanding impacts of the global pandemic on human tissue research,” says Cristina Kelly, Director, Scientific Services at NDRI. Researchers were also split with if they will require organ and tissue from donors who have received a COVID-19 vaccination. The information gathered in this survey will shape how NDRI continues to communicate regulatory updates and data to current and future investigators. A follow up to this survey will be commissioned, and we look forward to sharing our findings.

To see the complete survey data please visit https://ndriresource.org/covidsurvey.
Expanding the horizons of biomedical research

NDRI Celebrates 30 Years of NIH Funding for Human Tissue and Organ Research Resource Program

July 2020 marked a major milestone for NDRI — 30 consecutive years of funding from the National Institutes of Health (NIH) for its Human Tissue and Organ Research Resource (HTORR) program. This most recent NIH award to NDRI was for $1,318,296 over five years.

NDRI’s HTORR program supports academic biomedical research investigators by providing both normal and diseased human biospecimens from a diverse donor pool for a broad range of complex research projects. The program is recognized as an essential research resource for NIH-funded investigators due to its customized procurement, processing, preservation and distribution protocols. HTORR investigators author ~150 publications annually, showing the impact the resource has for the scientific community.

Dr. Francis S. Collins, Director, National Institutes of Health has said of NDRI’s work: “Were it not for the availability of precious tissues supplied by NDRI, this field of biomedical and bioscience research would not be where it is right now.”

Access to biospecimens from particular cohorts of diseased donors can be challenging for investigators. In 2020, NDRI also received the following supplemental grants for the HTORR program that focus on specific disease initiatives of the NIH:

HTORR program is supported by:
- NIH Office of the Director, Office of Research Infrastructure Programs (ORIP)
- National Eye Institute (NEI)
- National Heart Lung and Blood Institute (NHLBI)
- National Institute of Allergy and Infectious Diseases (NIAID)
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
- National Institute for Diabetes and Digestive and Kidney Disease (NIDDK)
- National Institute for Neurological Disorders and Stroke (NINDS)
Alzheimer’s disease and Related Dementias

“Invaluable and rare brain specimens from patients with Alzheimer’s disease allow me to make new discoveries in the role of CSF (cerebrospinal fluid) flow dynamics in the Alzheimer’s process. Funding by the NIH and HTORR allows me to obtain samples which I would otherwise not be able to afford.

Jefferson Chen, MD, PhD
Associate Professor of Neurosurgery,
University of California Irvine

$350,192
Awarded by National Institute of Aging and the Office of the Director
This award addresses gaps in research by developing a comprehensive human biospecimen resource that provides highly annotated biospecimens from post-mortem donors with a history of Alzheimer’s disease and related dementias.

“NDRI provides my lab with valuable tissue to assess clinically relevant Alzheimer’s disease pathology to compare with our human iPSC-based in vitro studies. The ability to use human tissue offers important validation for our studies assessing the role that viruses play in Alzheimer’s disease pathology.”

Allison Ebert, PhD
Associate Professor, Department of Cell Biology, Neurobiology and Anatomy, Medical College of Wisconsin

Autism Spectrum Disorder

$295,903
Awarded by National Institute of Mental Health
This award supports NDRI’s efforts to provide the NIH NeuroBioBank with post-mortem brains recovered from donors with a history of Autism Spectrum Disorder (ASD) to further research into the etiology of the disorder. A second objective of this supplement is to collaborate with leading medical institutions, organ procurement organizations and the tissue bank community to identify and recover pediatric, control brains that are invaluable for investigators studying key factors in development that are impacted in ASD.

“We rely heavily on NDRI to fulfill our mission of recovering neurologic tissue from donors with neurodevelopmental diseases for characterization and distribution to interested researchers. This is particularly true with regard to autism spectrum disorder cases. Tissue remains in high demand, but these cases are rare and difficult to recruit. NDRI has been instrumental in acquiring these for us, year after year. The professionalism, organization, timeliness, and high quality of NDRI’s work make them one of our most reliable and productive partners.”

Tom Blanchard, PhD, JD
Director, University of Maryland Brain and Tissue Bank

HIV/AIDS

“NDRI supports my research by providing high-quality tissue samples we use to optimize assays and as a comparison to HIV+ donors. The staff is very professional and their services provide a unique opportunity to obtain samples that otherwise would be very difficult.”

Natalia Soriano-Sarabia, PhD
Assistant Research Professor, Department of Microbiology, Immunology and Tropical Medicine, George Washington University

$185,470
Awarded by the National Institute of Allergy and Infectious Diseases
The objective of this award is to develop an HIV Human Tissue Resource (HTTR). Through this supplement, NDRI provides federally funded investigators access to human biospecimens obtained from defined cohorts of HIV-positive and control donors so they can address the complex issues facing HIV research, including viral persistence, latency and reactivation, as well as, HIV-associated complications. The one-year supplement transitioned into a no-cost extension to complete the work supporting HIV investigators.
Recently published GTEx collection catalogs impact of DNA sequence changes on gene expression

In 2010, the National Institutes of Health Common Fund launched the Genotype Tissue Express (GTEx) project to help scientists understand how different genes might lead to certain types of diseases. NIH awarded the tissue procurement component of the GTEx Project to NDRI. In the first year alone, NDRI partnered with organ procurement organizations and tissue banks across the country to collect more than 80,000 biospecimens. By the end of the donor accrual phase of the project in 2015, NDRI tissue source sites recovered tissues from 654 organ and tissue transplant donors.

In the almost five years since NDRI’s completion of tissue collections for the GTEx Project, countless studies have been published to help scientists better understand how genetic variation across the body — and even between sexes — contributes to gene expression and function and impacts overall health. Most recently, the GTEx consortium has completed a wide-ranging set of studies documenting how small changes in DNA sequence can impact gene expression across more than four dozen tissues in the human body. These studies, released in a set of 15 papers published in *Science* and other journals, constitute the most comprehensive catalog to date of genetic variations that affect gene expression.


“Findings from the GTEx study will be critical for identifying the genetic variants associated with complex human diseases that can one day lead to more personalized treatments and potential cures for patients.”

*Bill Leinweber, President and CEO of NDRI*
NDRI Honors Donor Network West with Empowering Research and Discovery Award

Congratulations to Donor Network West, an organ procurement organization (OPO) that serves northern California and northern Nevada, for being recognized by NDRI and the Association of Organ Procurement Organizations (AOPO) with the second annual NDRI/AOPO Empowering Research and Discovery Award for outstanding commitment to the advancement of research. The award was presented on June 25, 2020 during the Association of Organ Procurement Organizations (AOPO) 2020 Virtual Annual Meeting.

“Donor Network West is committed to our partnerships with academic medical centers, hospitals, universities and biotechnology centers as they work to study and develop new treatments for patients within our community and beyond,” said Janice F. Whaley, CEO of Donor Network West. “We are honored to be recognized by NDRI and AOPO for our team’s accomplishments in advancing the development and scientific knowledge to save and heal future lives.”

In 2019, Donor Network West coordinated more than 500 research-authorized donors providing hundreds of organs and thousands of tissue samples to expand medical science through research. That same year, the organization had more than 1,200 organs and tissues placed for research, including dorsal root ganglia, which are essential to investigators studying critically needed treatments for chronic pain. Providing donors and their families with the opportunity to increase knowledge and develop advanced medical therapies for pain management, neurological disorders, autoimmune reactions and degenerative muscle diseases leaves the long-lasting legacy of hope that could not be accomplished in any other way.

The winner of the 2021 NDRI and AOPO Empowering Research and Discovery Award will be announced at the virtual AOPO Annual Meeting during the week of June 28.

NDRI and Bay Area Lyme Foundation’s Biobank continues to advance understanding of Lyme disease

Now in its third year, the Lyme Disease Tissue Collection Program is a collaborative initiative of the Lyme Disease Biobank (LDB), National Disease Research Interchange (NDRI), and MyLymeData Patient Registry. The program collects surgical and post-mortem tissue samples and detailed information from people with Lyme disease and other tick-borne infections to aid in accelerating research efforts related to these diseases. Liz Horn, PhD MBI, Principal Investigator of the Lyme Disease Biobank presented about the Lyme Biobank’s Tissue Repository at the 5th Annual LymeMIND Virtual Conference in November, 2020. You can view the video here: www.ndriresource.org/lyme-disease.

1. Request information packet from NDRI: go to NDRIresource.org/lyme-disease
2. NDRI sends you the packet and answers any questions you have.
3. Complete forms in the packet to enroll. Consider linking your tissue donation with your MyLymeData profile.
4. Receive enrollment confirmation and Donor Registration Card from NDRI.
5. Alert NDRI when you schedule surgery or have any significant health changes. NDRI will coordinate the donation with your healthcare team.
6. Make a difference! Your donation makes research possible.

www.ndriresource.org
On average, 150 publications per year are authored by investigators who receive tissue from NDRI. Investigator publications cover a broad spectrum of scientific research areas, including cancer, diabetes, cardiovascular, musculoskeletal, neuroscience, and respiratory. Below are two publications from NDRI investigators in 2020.

A full list of publications can be found on NDRI’s website: [ndriresource.org/for-researchers/publications](http://ndriresource.org/for-researchers/publications)

mRNA Characterization of the Retina

The retina is a stratified layer of sensory neurons lining the posterior portion of the eye. This study characterizes the mRNA transcriptome of central and peripheral human retina as well as supporting macular RPE/choroid tissue. This data will be valuable to the vision research community for characterizing global changes in gene expression in clinically relevant ocular tissues.


Cardiomyocyte Isolation

A comprehensive reference map of all cell types in the human body is necessary for improving our understanding of fundamental biological processes and in diagnosing and treating disease. Toward this goal, we benchmarked single-cell and single-nucleus RNA technologies on pluripotent stem cells differentiating into cardiomyocytes in vitro to determine the optimal strategy for mapping cell types and states in the human heart.

Dorsal Root Ganglion (DRG) and Pain Research with Clint Young, PhD, GRT Therapeutics, Inc

Young and his team’s goal is to create an immortalized human DRG cell line sourced from normal patient controls and those with chronic pain conditions. Currently there is only one immortalized human DRG cell line (HD10.6) with limited availability for research use.

By exploring novel pain targets and different therapeutic approaches on the immortalized human DRG, Young and team believe they can accelerate our drug discovery process by creating a platform for greater translation into clinic. Their ambition is to deliver four to five new non-addictive non-opioid pain-relieving products to patients by 2022.
Meet our Researchers

Throughout our 40-year-history, NDRI has supported countless scientists across the globe by providing human biospecimens to advance their research projects. Meet a few who are making advancements in their fields.

Visit https://ndriresource.org/researcherhighlights to watch their video interviews.

Alan J. Grodzinsky, ScD
Professor of Biological, Electrical and Mechanical Engineering
Massachusetts Institute of Technology (MIT)

Osteoarthritis is one of the most common age-related diseases, affecting as many as 30 million Americans. Alan Grodzinsky, ScD, Professor of Biological, Electrical and Mechanical Engineering, MIT and team are studying tissue from NDRI donors to better understand the painful, chronic condition that destroys cartilage, the cushion between bones, and results in painful friction. Hear about the exciting work they are doing with the National Institutes of Health and NASA to study osteoarthritis in astronauts in space and how their findings may apply to the rest of us back here on Earth.

Reynold A Panettieri Jr., MD
Vice Chancellor for Translational Medicine and Science
Professor of Medicine, Robert Wood Johnson Medical School
Director, Rutgers Institute for Translational Medicine and Science

Reynold A. Panettieri, Jr, MD, is the inaugural Director of the Institute for Translational Medicine and Science and Vice Chancellor for Translational Medicine and Science at Rutgers University, and previously served as the Director of the Airways Biology Initiative at the University of Pennsylvania. His focus is on asthma, COPD and related lung disease, specifically the cellular and molecular mechanisms that regulate airway smooth muscle cell growth and the immunobiology of airway smooth muscle. While he says his research discoveries themselves are exciting, it is the legacy of developing the next generation of scientist physicians that truly excites him. He’s also inspired by the donors and families who make such a tremendous impact to humanity through their gift of tissues and organs for research.

Kornelia Polyak, MD, PhD
Professor of Medicine, Harvard Medical School
Co-Leader, Dana-Farber Harvard Cancer Center, Cancer Cell Biology Program Dana-Farber Cancer Institute/Harvard Medical School

Dr. Kornelia Polyak, MD, PhD investigates how cellular and molecular changes that occur in ductal carcinoma in situ (DCIS)—a non-invasive subtype of breast cancer—allow cancer cells to become invasive. Her work may inform the development of new immunotherapy drugs and reveal biomarkers that could be used to identify which DCIS may progress to invasive disease. She and her team will continue to explore why pre-invasive tumors progress in some cases and what role the immune system plays in this process. While experimental models are helpful in showing researchers what could happen, her video underscores why the ability to study human tissue is key in helping researchers drive progress toward helping the next person.
NDRI Director and Chair of the Finance and Audit Committee, Rob Marcantuono, CPA, MBA, is passionate about anything that supports health and education.

“Financial access to these areas can sometimes be challenging,” he said. “Being able to support increased access is important to me.”

“NDRI has proven itself capable of adjusting strategy based on the changing scientific landscape. No matter where the future of science leads, NDRI will be a key interchange on the path.”

Robert Marcantuono, CPA, MBA
Chair, Finance & Audit Committee
NDRI Board of Directors

Marcantuono was introduced to NDRI in 2014 through a mutual acquaintance — a former audit partner — with an opportunity to serve on NDRI’s then newly created Finance and Audit Committee.

“Being able to serve as the Chair of that committee has been a truly rewarding experience,” he said.

Marcantuono brings a command of auditing, budgeting, risk management and cash and investment to NDRI through his work with University City Science Center, the nation’s largest urban research park, which accelerates technology commercialization, economic development and the market availability of life-enhancing scientific breakthroughs.

He began his career in public accounting working with Arthur Andersen, LLP — a “Big Five” firm at that time — where he stayed long enough to get his Certified Public Accountant (CPA) certification before moving into private industry. After gaining experience at a small consulting firm, he moved into the nonprofit sector, where he has remained ever since. He holds an MBA from Temple’s Fox School of Business and currently serves as Chief Financial Officer for Germantown Friends School in Philadelphia.

One of the things he enjoys most about serving on NDRI’s Board of Directors is learning about the research. His guidance helps NDRI adjust strategies to ensure advantage over all available funding opportunities.
NDRI Board Chair Emeritus Hal Broxmeyer, PhD, recently co-authored an article in *Stem Cell Reviews and Reports* (https://doi.org/10.1007/s12015-020-10056-z) on the Effects of SARS-CoV-2 Spike Protein on Hematopoiesis. The study helps researchers understand the virus's effect on host tissues, which give rise to the very immune cells that defend against viral infection.

Dr. Broxmeyer is with the Indiana University School of Medicine where he serves as Distinguished Professor, Mary Margaret Walther Professor Emeritus Professor of Microbiology/Immunology, and is program leader of the NCI-Designated Indiana University Simon Cancer Center Program on Hematopoiesis, Heme Malignancies and Immunology.

NDRI Board Chair Emeritus Hal Broxmeyer, PhD and distinguished professor of microbiology and immunology at Indiana University Simon Cancer Center

NDRI Board Chair-Emeritus Hal Broxmeyer, PhD, recently co-authored an article in *Stem Cell Reviews and Reports* (https://doi.org/10.1007/s12015-020-10056-z) on the Effects of SARS-CoV-2 Spike Protein on Hematopoiesis. The study helps researchers understand the virus's effect on host tissues, which give rise to the very immune cells that defend against viral infection.

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NDRI Board Chair-Emeritus Hal Broxmeyer, PhD and distinguished professor of microbiology and immunology at Indiana University Simon Cancer Center

NDRI Board Chair Emeritus studies effects of SARS-CoV-2 on host tissue

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NDRI’s Melissa VonDran shares progress in research collaborations at AATB annual meeting

Melissa VonDran, PhD, NDRI’s Vice President of Operations and Biorepository Director, virtually presented on progress in research collaborations as part of the American Association of Tissue Banks (AATB) annual meeting in October 2020. She was joined by Aaron Goldenberg, PhD, Associate Professor and Research Director with Case Western Reserve University’s Department of Bioethics.

Accreditation renewals mark NDRI’s commitment to excellence

In September 2020, NDRI successfully completed its bi-annual College of American Pathologist’s (CAP) self-inspection to maintain compliance with the accreditation program for a Sponsor Facility and Biorepository. No deficiencies were noted, and an on-site CAP inspection is expected in 2021. Earlier in 2020, NDRI also received renewal of its provisional New York State (NYS) licensure to operate as a Non-Transplant Anatomic Bank.

Adhering to the CAP and NYS standards demonstrates NDRI’s commitment to maintaining excellence in regulatory compliance and best practices.

Good Vibes Initiative

NDRI’s Good Vibes Initiative, formerly known as the Culture Club, is a team of eight NDRI staff from a variety of departments within the organization who work to build participation, energy, and positivity to the workplace. This past year was challenging with remote-working and social distancing restrictions however the group put together several events to keep staff motivated and having fun. This included an ice cream social day, a competitive fundraiser to donate to two nonprofits chosen by staff, and a pumpkin decorating contest. Additionally, a food drive was held which collected over 350 food items for Philabundance, a Philadelphia-area nonprofit that acquires, resues and distributes food to help feed those in need, while also advocating for policies that increase food access. The group has also used the ongoing pandemic to focus on mental-health check-ins to team members including distributing succulents and handmade heating pads to all staff and organizing get to know us sessions. At the conclusion of 2020 staff voted on company-wide superlatives with awards going to the ‘Rookie of the Year’, ‘Most Caffeinated’ and the ‘Dr. Doolittle Award’ (most pet-obsessed) as well as others. In 2021, the group will continue to focus on positive energy and recognizing all staff who go above and beyond at work.
Staff Awards

Jason Cavanaugh, Senior Manager, Logistics Management & Biorepository, NDRI’s 2020 Employee of the Year Award

The logistics involved in building out a new facility and ensuring a smooth move are challenging in the best of circumstances. Jason Cavanaugh, NDRI’s Senior Manager of Logistics Management & Biorepository, took on the challenge in the middle of a pandemic. As time came for NDRI’s long-planned move of its logistics operations from the Drexel University Science Center to our new facilities at 3 Parkway, Philadelphia, like the rest of the country, was in a pandemic-related lockdown. That didn't stop Jason, who kept his eye on the ball, working with construction staff and multiple vendors to ensure that the build-out of the new facility aligned with NDRI's business needs and that the move proceeded smoothly. As NDRI staff transitioned to remote-work operations from mid-March to June, Jason remained on-site, overseeing logistics, shipping and receiving to keep core functions moving. As if navigating a move in the midst of a pandemic wasn't challenging enough, Jason also had the “opportunity” to keep operations active in the midst of and following historic riots and civil unrest in Center City, as well.

Hamidou Keita, Private Donor Specialist, Hospital Source Sites, Employee of the Quarter for Q3 2020

Congrats Hamidou Keita, Private Donor Specialist, Hospital Source Sites, on being awarded with NDRI’s Employee of the Quarter Award in the 3rd Quarter of 2020! Hamidou was recognized for his excellent performance and attitude.

Armon Luckenbach, Fulfillment Coordinator, Employee of the Quarter for Q4 2020

Congratulations Armon Luckenbach, Fulfillment Coordinator, for being awarded our Q4 2020 Employee of the Quarter. Armon, who started working for NDRI in July of 2020, has been consistent in his dedication to NDRI, his willingness to learn, and passion to his job on the fulfillment team.

NDRI Service to Science Awards Dinner—Save the Date

NDRI is pleased to announce that our Service to Science Awards Dinner will take place in 2022 at the Union League of Philadelphia!

Please visit www.ndriresource.org/servicetoscience for up-to-date information. For questions about NDRI’s Service to Science Awards Dinner or additional information about our sponsorship opportunities contact Eileen Falchetta, Director, Marketing & Communications at NDRI40@ndriresource.org. We hope to see you there!
Board of Directors

The NDRI Board of Directors is comprised of leadership representing a cross-section of disciplines—experts in organ and tissue donation and preservation, research, accounting, finance and non-profit management, all of whom share their expertise to enable us to carry out our mission of advancing biomedical research.

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Chair of the Board  
President, Shepherd University

Bill Leinweber  
President & CEO, NDRI

Meenhard Herlyn, DVM, DSc  
Chairman Emeritus  
Caspar, Wistar Professor in Melanoma Research  
Director, The Wistar Institute Melanoma Research Center  
Professor, Molecular and Cellular Oncogenesis Program  
The Wistar Institute

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Chairman Emeritus, NDRI  
Distinguished Professor,  
Mary Margaret Walther Professor  
Professor of Microbiology/Immunology,  
Program Leader, NCI-Designated Simon Cancer Center Program on Hematopoiesis, Heme Malignancies and Immunology  
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Keith Reemtsma, MD (deceased)  
Noel K. Maclaren, MD  
D. Walter Cohen, DDS (deceased)
In 1980, NDRI was founded to serve researchers human tissues and organs across the U.S. to support research towards a cure for diabetes. As the need for human biospecimens for research into many more diseases grew, so did NDRI’s services. Today, NDRI serves hundreds of scientists around the world whose scientific endeavors span the full range of disease and disability.

**NDRI supporting breakthrough discoveries with unmatched experience.**

- Customized biospecimen acquisition and processing tailored to specific protocol requirements
- Responsive 24/7/365 call center for requests and biospecimen distribution
- Diverse experience distributing nearly every human tissue and organ type
- Ethical and regulation-compliant biomaterial acquisition and handling

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