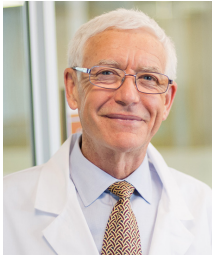


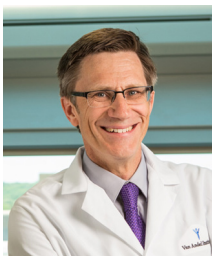
## Leadership



**Peter Jones, Ph.D., D.Sc.**  
Chief Scientific Officer  
Director, Center for Epigenetics

Peter Jones, Ph.D., D.Sc., is a pioneer in epigenetics, a growing field that explores how genes are regulated and provides new avenues for developing therapies for cancer and other diseases.

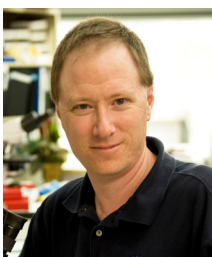
His discoveries have helped usher in an entirely new class of drugs that have been approved to treat blood cancer and are being investigated in other tumor types. Jones is a member of the National Academy of Sciences and chief scientific officer of Van Andel Research Institute.



**Patrik Brundin, M.D., Ph.D.**  
Associate Director of Research  
Director, Center for Neurodegenerative Science

Patrik Brundin, M.D., Ph.D., investigates molecular mechanisms in Parkinson's disease, and his goals are to develop new therapies aimed

at slowing or stopping disease progression or repairing damage. He is one of the top-cited researchers in the field of neurodegenerative disease and leads international efforts to repurpose drugs to treat Parkinson's. Brundin is director of Van Andel Research Institute's Center for Neurodegenerative Science.



**Bart Williams, Ph.D.**  
Director, Center for Cancer and Cell Biology

Bart Williams, Ph.D., studies the building blocks of bone growth on behalf of the millions suffering from diseases such as osteoporosis. He seeks new way of altering cell signaling pathway

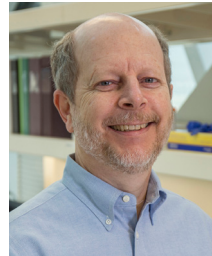
to encourage healthy bone development and dete cancer spread to the skeleton. Williams is director of Van Andel Research Institute's Center for Cance and Cell Biology.



**Scott Jewell, Ph.D.**  
Director, Core Technologies and Services

Scott Jewell, Ph.D., leads Van Andel Research Institute's Core Technologies and Services, which provide technology and specialized expertise for research investigators. Cores and services include bioinformatics and biostatistics,

cryo-EM, confocal microscopy and quantitative imaging, flow cytometry, genomics, pathology and biorepository, small-animal imaging, vivarium management and transgenics. Jewell is a past president of the International Society for Biological and Environmental Repositories (ISBER).



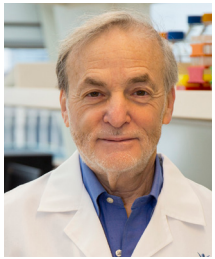
**Steve Triezenberg, Ph.D.**  
Dean, Van Andel Institute Graduate School  
Professor, Center for Epigenetics

Steven Triezenberg, Ph.D., explores the genetic and epigenetic control systems of viruses to understand how infections progress and to reveal new ways to stop those infections. His discoveries with

herpes simplex viruses have opened new possibilities for antiviral drug development and have revealed new insights into how human cells control gene expression. In addition to running a lab at Van Andel Research Institute, Dr. Triezenberg is the founding dean of Van Andel Institute Graduate School.

# Center for Epigenetics

Research areas: Epigenetics, cancer, heart disease, neuroepigenetics and structural biology



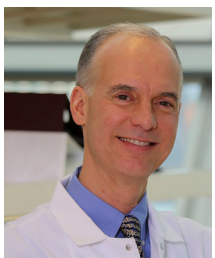
**Stephen Baylin, M.D.**  
Director's Scholar  
Primary affiliation: Johns Hopkins University

Stephen Baylin, M.D., studies the body's genetic control systems—called epigenetics—searching for vulnerabilities in cancer. Baylin is a pioneer in this field, and was among the first to trace epigenetic causes of cancer. His studies have led to new therapies for breast, lung and colorectal cancers and many others. He is co-leader of the Van Andel Research Institute–Stand Up To Cancer Epigenetics Dream Team, a Director's Scholar at VARI and co-head of Cancer Biology at Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins University.



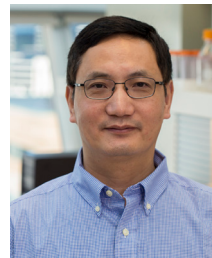
**Stefan Jovinge, M.D., Ph.D.**  
Director, DeVos Cardiovascular Research Program (a joint effort between VARI and Spectrum Health)

Stefan Jovinge, M.D., Ph.D., develops ways to help the heart heal itself and has led dozens of clinical trials in regenerative medicine. As a critical care cardiologist and scientist, he uses a bench-to-bedside approach in an effort to give patients with serious heart conditions longer, healthier lives. The clinical platform for his research is the Cardiothoracic Intensive Care Unit at Spectrum Health Frederik Meijer Heart & Vascular Institute and the basic science effort in regenerative medicine is performed at VARI. He serves as director of the DeVos Cardiovascular Research Program, a collaboration between Spectrum Health and VARI.



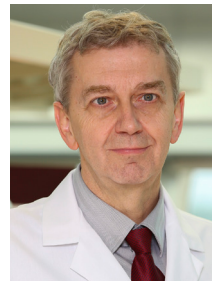
**Peter W. Laird, Ph.D.**  
Professor

Peter W. Laird, Ph.D., seeks a detailed understanding of the molecular foundations of cancer with a particular focus on identifying crucial epigenetic alterations that convert otherwise healthy cells into cancer cells. He is widely regarded as an international leader in this effort and has helped design some of the world's state-of-the-art tools to aid in epigenetics research. Laird is a principal investigator for the National Cancer Institute's Genome Data Analysis Network and is a professor in Van Andel Research Institute's Center for Epigenetics. He also played a leadership role in The Cancer Genome Atlas, a multi-institutional effort to molecularly map cancers.



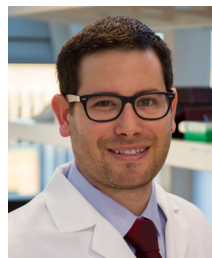
**Huilin Li, Ph.D.**  
Professor

Huilin Li, Ph.D., uses cryo-electron microscopy to reveal the most basic building blocks of DNA replication and other systems vital for life. He has been at the vanguard of cryo-EM for more than 20 years, and his research has implications for some of the world's most critical public health concerns, including tuberculosis, cancer, mental illness and many more. He is a professor in the Center for Epigenetics.



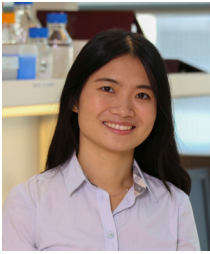
**Gerd Pfeifer, Ph.D.**  
Professor

Gerd Pfeifer, Ph.D., studies how the body switches genes on and off, a biological process called methylation that, when faulty, can lead to cancer or other diseases. His studies range from the effect of tobacco smoke on genetic and epigenetic systems to the discovery of a mechanism that may help protect the brain from neurodegeneration. Pfeifer's studies have implications across a range of diseases, including cancer, Parkinson's, diabetes and many others. Pfeifer is a professor in Van Andel Research Institute's Center for Epigenetics.



**Scott Rothbart, Ph.D.**  
Assistant Professor

Scott Rothbart, Ph.D., studies the ways in which cells pack and unpack DNA. This elegant process twists and coils roughly two meters of unwound DNA into a space less than one-tenth the width of a human hair. Although this process is impressive, it is also subject to errors that can cause cancer and other disorders. Rothbart seeks new targets for drug development in this process. He is an assistant professor in Van Andel Research Institute's Center for Epigenetics.



**Hui Shen, Ph.D.**  
Assistant Professor

Hui Shen, Ph.D., develops new approaches to cancer prevention, detection and treatment by studying the interaction between genes and their control systems, called epigenetics. Her research focuses on women's cancers, particularly ovarian cancer, and also has shed new light on the underlying mechanisms of other many cancer types, including breast, kidney and prostate cancers. She is an assistant professor in Van Andel Research Institute's Center for Epigenetics.

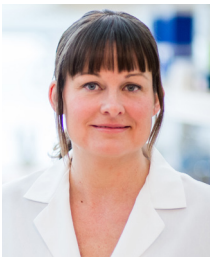


**Piroska Szabó, Ph.D.**  
Associate Professor

Piroska Szabó, Ph.D., studies the flow of epigenetic information from parents to their offspring, with a focus on how epigenetic markers are remodeled during egg and sperm production, and how these markers are rewritten after fertilization. These processes have profound implications on fertility and embryo development. Disturbances in epigenetic remodeling are thought to contribute to disease conditions lasting well into adulthood. Szabó is an associate professor in Van Andel Research Institute's Center for Epigenetics.

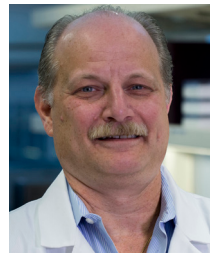
## Center for Neurodegenerative Science

Research areas: Parkinson's disease, depression/suicide, aging, prion disease, Alzheimer's disease, Huntington's disease and neuroepigenetics



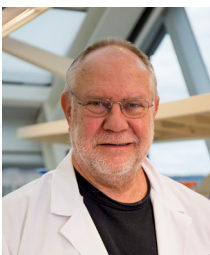
**Lena Brundin, M.D., Ph.D.**  
Associate Professor

As a psychiatrist and a scientist, Lena Brundin, M.D., Ph.D., seeks ways to diagnose and treat depression and suicidality by studying inflammation of the nervous system. Her findings may lead to earlier interventions for depressive patients and for development of a new class of antidepressants that targets the immune system. She also investigates how inflammatory mechanisms can damage nerve cells in Parkinson's disease. She is an associate professor in the Center for Neurodegenerative Science.



**Jeffrey Kordower, Ph.D.**  
Director's Scholar  
Primary affiliation: Rush University Medical Center

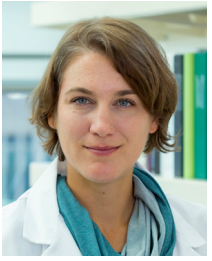
Jeffrey Kordower, Ph.D., is an international authority on the onset of Parkinson's, Alzheimer's and Huntington's diseases, and works to develop new procedures aimed at slowing disease progression or reversing damage to the brain. He holds a primary appointment at Rush University in Chicago and is a Director's Scholar at Van Andel Research Institute, where he focuses on designing preclinical studies and clinical trials to translate these new approaches into meaningful changes for people suffering with movement disorders.



**Gerhard Coetzee, Ph.D.**  
Professor

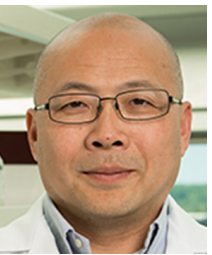
Gerhard Coetzee, Ph.D., searches the human genome for minuscule changes that contribute to onset, progression and drug resistance of many diseases, ranging from cancer to Parkinson's to rare and heritable disorders. His team deploys genome sequencing technologies and high-powered computational arrays to tease out patterns and interactions of markers and treatment targets from among the human genome's more than three billion DNA base pairs. Coetzee is a professor in the Center for Neurodegenerative Science.





**Viviane Labrie, Ph.D.**  
Assistant Professor

Viviane Labrie, Ph.D., studies the dynamic interplay between the human genome and its control system—the epigenome—to understand how neurodegenerative diseases start and progress in an effort to develop improved diagnostics and treatments. Labrie’s scientific pursuits have deepened understanding of conditions from Parkinson’s and Alzheimer’s diseases to schizophrenia to healthy aging to lactose intolerance. She has also developed new methods for epigenome analysis. She is an assistant professor in the Center for Neurodegenerative Science.



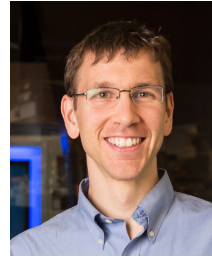
**Jiyang Ma, Ph.D.**  
Professor

Jiyang Ma, Ph.D., studies abnormal proteins that causes neurodegenerative diseases, including Parkinson’s disease and prion diseases in humans and animals. His lab has developed new ways to understand the how these proteins spread and cause diseases in humans and animals. The lab is also developing new approaches to diagnose and treat these devastating disorders. Ma is a professor in the Center for Neurodegenerative Science.



**Darren Moore, Ph.D.**  
Associate Professor

Darren Moore, Ph.D., seeks new diagnostic and treatment approaches for Parkinson’s by investigating the inherited form of the disease, which comprises five to 10 percent of cases. He aims to translate the understanding of these genetic mutations into better treatments and new diagnostic tools for Parkinson’s, both inherited and non-inherited. Discoveries from Moore’s Lab routinely elucidate the faulty molecular interactions that transform healthy, functioning neurons into diseased ones. Moore is an associate professor in the Center for Neurodegenerative Science.



**Jeremy Van Raamsdonk, Ph.D.**  
Assistant Professor

Jeremy Van Raamsdonk, Ph.D., studies the genetics of aging and the mechanisms underlying Parkinson’s and Huntington’s disease. He focuses primarily on understanding what causes aging, and how the changes that take place during normal aging contribute to the development of neurodegenerative disease. His work on the relationship between oxidative stress and aging has upended many scientific assumptions about the effect of reactive oxygen species on lifespan. Ultimately, Dr. Van Raamsdonk hopes to leverage the knowledge gained about aging to develop novel treatments for neurodegenerative disorders. He is an assistant professor in the Center for Neurodegenerative Science.

## Center for Cancer and Cell Biology

Research areas: Asthma, diabetes, neurofibromatosis type 1, osteoarthritis, osteoporosis, sarcoma, tuberous sclerosis and blood, bone, breast, colorectal, pancreatic and prostate cancers



**Patrick Grohar, M.D., Ph.D.**  
Associate Professor, VARI  
Pediatric Oncologist, Spectrum Health  
Helen DeVos Children’s Hospital

Patrick Grohar, M.D., Ph.D., develops new drugs to treat bone cancer in children, in addition to pursuing a deeper understanding of the mechanisms of sarcomas and related conditions. Once proven safe and effective in the lab, his team translates these potential therapies into clinical trials for children with few other options. He is an associate professor in Van Andel Research Institute’s Center for Cancer and Cell Biology and a pediatric oncologist at Spectrum Health Helen DeVos Children’s Hospital.



**Brian Haab, Ph.D.**  
Professor

Brian Haab, Ph.D., searches for new ways to diagnose and stratify pancreatic cancer based on the chemical fingerprints tumors leave behind. Part of the problem Haab aims to solve is that cancers often look and behave normally—until

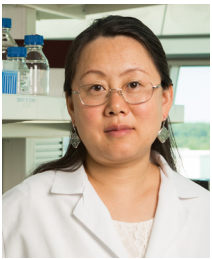
after they've started making people sick. Haab is sleuthing out clues to build a library of diagnostic tools that will help providers diagnose tumors earlier and optimize treatment. He is a professor in the Center for Cancer and Cell Biology.



**Jeff MacKeigan, Ph.D.**  
Associate Professor

Jeff MacKeigan, Ph.D., studies the biological systems that influence cellular metabolism and the cell's recycling process, known as autophagy. Extensive knowledge of these complex cellular processes helps the MacKeigan Laboratory

understand how tumor cells respond to and resist treatment. The MacKeigan team pairs their cell biology expertise with cutting-edge techniques, such as computational modeling and next-generation sequencing, to identify new therapeutic targets and strategies. MacKeigan is an associate professor in the Center for Cancer and Cell Biology.



**Xiaohong Li, Ph.D.**  
Assistant Professor

Xiaohong Li, Ph.D., studies when various cancers, particularly prostate and breast cancer cells, migrate from their original site and spread to the bone. These cells stay dormant and might wake up years later or grow-up to bone metastases, which

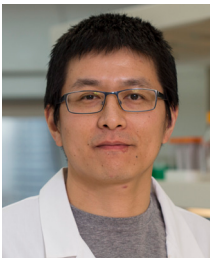
cause debilitating pain and are exceedingly difficult to treat. Li hopes that a better understanding metastatic cancers will lead to new diagnostic tests and targeted therapies. She is an assistant professor in the Center for Cancer and Cell Biology.



**Karsten Melcher, Ph.D.**  
Associate Professor

Karsten Melcher, Ph.D., studies molecular structure and cellular communication, which have implications for finding new treatments for serious health threats including cancer, diabetes and obesity. His expertise extends beyond human cells—his

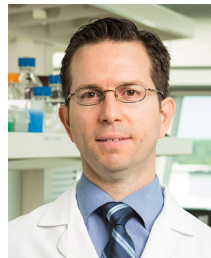
research into plant hormones may one day lead to heartier crops that resist drought and help meet the nutritional demands of a growing global population. Dr. Melcher is an associate professor in the Center for Cancer and Cell Biology.



**Wei Lü, Ph.D.**  
Assistant Professor

Wei Lü, Ph.D., is working to unravel how brain cells communicate with each other. Using techniques such as cryo-electron microscopy, his work has contributed to the field's understanding of molecules that play crucial roles in the development and function

of the nervous system. He is an assistant professor in the Center for Cancer and Cell Biology.



**Lorenzo Sempere, Ph.D.**  
Assistant Professor

Lorenzo Sempere, Ph.D., studies the role of microRNAs in the origin and growth of cancer. These very short strands of genetic material were discovered just over 15 years ago, and are now recognized as dynamic regulatory modules of the larger human genome. Sempere targets microRNAs in an effort

to develop new cancer drugs, specifically for pancreatic and breast cancers. He is an assistant professor in the Center for Cancer and Cell and Biology.



**Matt Steensma, M.D.**  
 Assistant Professor, VARI  
 Surgeon, Spectrum Health Helen DeVos  
 Children's Hospital

Matt Steensma, M.D., studies the genetic and molecular factors that cause benign tumors to become cancers to find vulnerabilities that may be targeted for treatment. As a scientist at

VARI and practicing surgeon at Spectrum Health Helen DeVos Children's Hospital, he is committed to translating scientific discoveries into treatments that improve patients' lives.



**H. Eric Xu, Ph.D.**  
 Professor  
 Director, VARI-SIMM Research Center

H. Eric Xu, Ph.D., explores the structure of molecules in the body's complex hormone signaling system, which plays a vital role in health and disease. He is particularly known for his discoveries in defining the

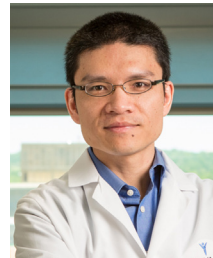
structure of molecules critical to the development of new drugs for cancer, diabetes and many others. He is a professor in VARI's Center for Cancer and Cell Biology and also serves as director of VARI-SIMM Research Center in Shanghai, China.



**George Vande Woude, Ph.D.**  
 Distinguished Scientific Fellow

George Vande Woude, Ph.D., is a titan in cancer biology. He is the founding director of Van Andel Research Institute, which he led for a decade. His discovery and description of the MET receptor tyrosine kinase as an oncogene,

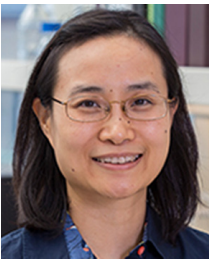
together with its activating ligand hepatocyte growth factor, have led to new possibilities for cancer therapies. His discovery has revolutionized the way scientists view the disease especially in tumor progression. He is a distinguished scientific fellow in the Center for Cancer and Cell Biology and a member of the National Academy of Sciences.



**Tao Yang, Ph.D.**  
 Assistant Professor

Tao Yang, Ph.D., studies the signaling systems that govern skeletal stem cells and the role they play in diseases such as osteoarthritis and osteoporosis. Bones are the largest producer of adult stem cells, which mature into cartilage,

fat or bone tissue—a process that falters with age. Yang seeks a better understanding of these systems in search of new treatments for degenerative bone disorders and other skeletal aging. He is an assistant professor in the Center for Cancer and Cell Biology.



**Ning Wu, Ph.D.**  
 Assistant Professor

Ning Wu, Ph.D., investigates the interface between cellular metabolism and cellular signaling, particularly as they relate to cancer. On the most basic level, cancer is a disease of uncontrolled cell growth, and Wu believes that understanding

a tumor's voracious energy requirements and altered signaling pathways will lead to new treatments that optimize existing combination therapies and identify novel therapeutic targets. She is an assistant professor in the Center for Cancer and Cell Biology.

## Bioinformatics and Biostatistics Core



**Manager: Mary Winn, Ph.D.**

The Bioinformatics and Biostatistics Core provides efficient, high-quality computational and statistical expertise for the analysis and interpretation of data. The Core maintains workflows for the processing and analyzing of genomic data sets, supports the design of rigorous and reproducible experiments and proposals, assists in the preparation of manuscripts, and provides training in the use of analytical software and methods.

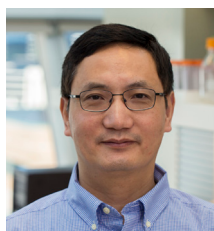
## Confocal Microscopy and Quantitative Imaging Core



**Manager: Corinne Esquibel, Ph.D.**

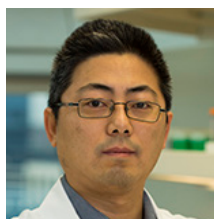
The Confocal Microscopy and Quantitative Imaging Core offers numerous imaging resources to address a broad variety of research questions, from gene expression analysis to cell motility.

## Cryo-EM Core

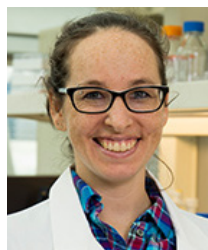


**Director: Huilin Li, Ph.D.**  
**Manager: Gongpu Zhao, Ph.D.**

The Cryo-EM Core harnesses revolutionary technology to visualize some of life's smallest—yet most vital—components. It encompasses a suite of state-of-the-art cryo-electron microscopes (cryo-EM), which are supported by expert staff and a robust high-performance computing cluster with extensive cloud capabilities.



## Flow Cytometry Core



**Manager: Rachael Sheridan, Ph.D., CCy**

The Flow Cytometry Core provides high-quality, comprehensive cytometry services and expertise to scientists at VARI and external collaborators. Core staff also offer assistance with data analysis, grant preparation and production of high-quality graphics for publication.

## Genomics Core



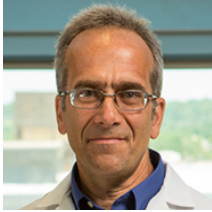
**Manager: Marie Adams, M.S.**

The Genomics Core is home to a high-caliber and extensive catalog of genomic and epigenomic sequencing and iScan array options as well as genotyping and cytogenetic services. Core staff collaborate closely with individual investigators on project design and data analysis, ensuring a high level of service from start to finish.

## Pathology and Biorepository Core



**Director: Scott Jewell, Ph.D.**  
**Associate Director:**  
**Galen Hostetter, M.D.**



The Pathology and Biorepository Core integrates extensive anatomic pathology expertise with the best practices in biorepository management to ensure high-quality biospecimens and analysis for internal investigators and external collaborations. The Institute's Biorepository is nationally and internationally recognized, and is accredited by the College of American Pathologists (no. 8017856).

## Small-Animal Imaging Facility

The Small-Animal Imaging Facility encompasses a broad range of imaging and image analysis tools for use with biologic specimens and rodents, giving scientists crucial, non-invasive tools for observing disease pathology and novel phenotypes in intact systems.

## Vivarium and Transgenics Core

**Director: Bryn Eagleson, MLAS**  
**Manager: Audra Guikema, B.S., LVT, RLAT**



The Vivarium and Transgenics Core develops and supports high-quality mouse modeling services for VARI investigators, collaborators and the greater research community. The Institute's state-of-the-art Vivarium is accredited by the Association for Assessment and Accreditation of

Laboratory Animal Care (AAALAC) International.

