



HIGHLIGHTS OF HOPE | FALL/WINTER '19 ISSUE

2 Du Awards 4 Grand Challenges in Parkinson's Disease 6 Clinical Trials 8 Epigenetics & the Brain
10 Depression & Suicidality 12 Graduate School Breaks the Mold 14 Science on the Grand 15 Meet Blue Apple Teacher Paul Solarz 16 Project-Based Learning 18 Events
26 Event Sponsors 27 Purple Community 5K 28 Student Ambassador/Duncan Lake Fashion Show 29 MINI on the Mack 30 Breast Cancer Survivor Inspires at Griffins Game
32 Community Transition Campus Partnership 33 Donor Profile: Jason Dawes 34 Memorials & Tributes

DR. JUAN DU WORKS TO SOLVE MYSTERIES OF THE BODY’S TEMPERATURE REGULATION SYSTEM

The human body is an elegant machine, one whose temperature is kept in check by an intricate biological thermostat.

But despite its critical role in keeping us healthy and protecting us from heat or cold-related injuries, little is known about exactly how this system works.

Van Andel Institute’s Dr. Juan Du hopes to solve this problem from the ground up by determining the structures and functions of its components, namely communication hubs called ion channels that allow chemical messengers to pass into and out of cells. Her groundbreaking work, which has implications for treating fever, pain and neurodegenerative disorders among others, recently earned her federal funding from the National Institutes of Health, as well as a pair of prestigious awards — the McKnight Scholar Award and the Klingenstein-Simons Fellowship Award in Neuroscience.

These awards will support her efforts to determine how specialized cells called sensory neurons monitor temperature-related information that they then convey to the brain. Currently, the precise mechanics of this process aren’t clear.

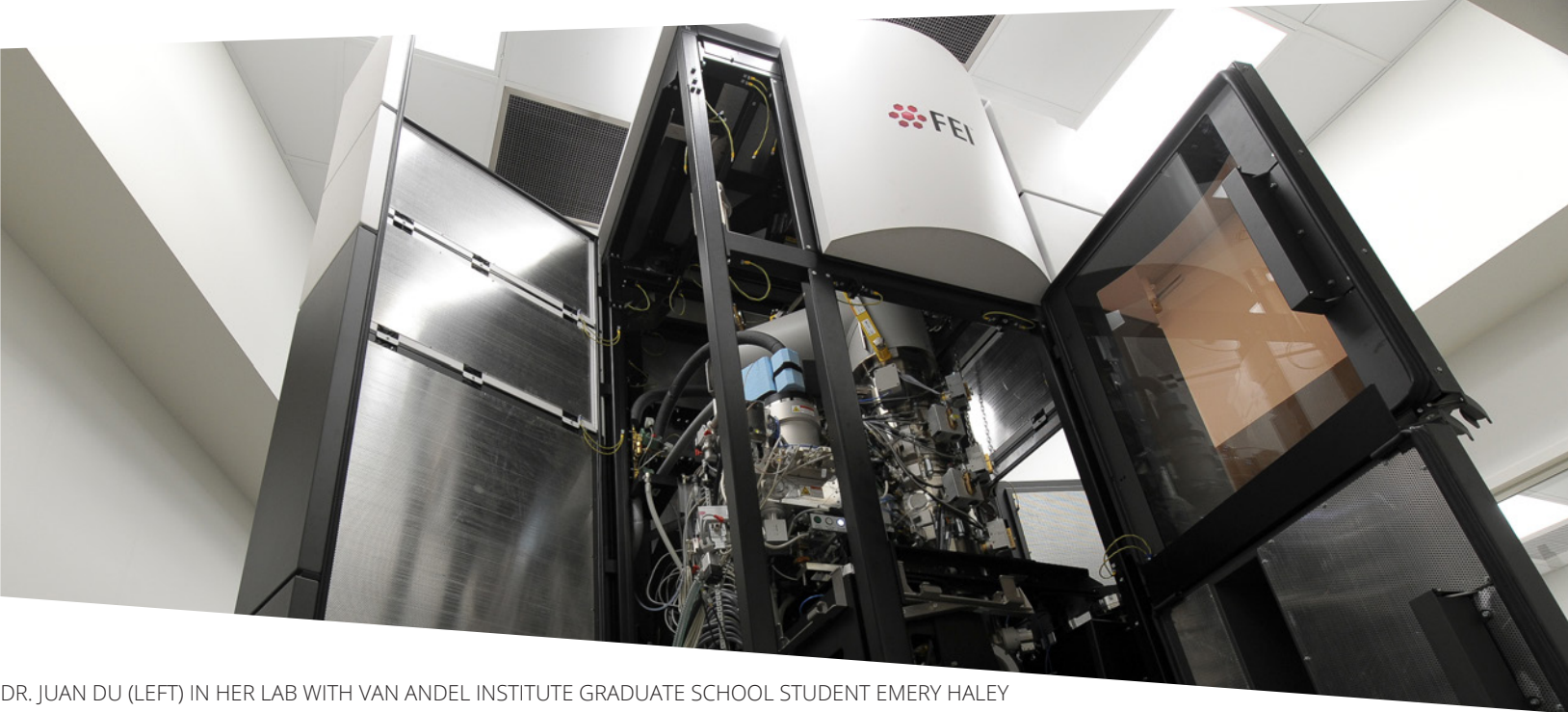
“Our tissues, especially our brains, are extremely vulnerable to temperature,” Du said. “Thankfully, our bodies have an amazing sensation and regulation system to maintain body temperature

within a narrow range and to warn us when we are exposed to harmful external stimuli, such as extreme heat or extreme cold. Understanding the individual components of this network and how they operate in concert could be a game-changer for treating a host of disorders, from chronic pain to neurological conditions.”

Du will use a revolutionary technique in her research called cryo-electron microscopy, or cryo-EM, which allows scientists to visualize molecular structures in their natural state down to the atomic level — about 1/10,000th the width of a human hair. The structures can then be used to inform development of new compounds that could be potentially used for manipulating thermosensitive ion channels and, therefore, treating temperature-related conditions.

Her earlier work with cryo-EM has already borne fruit. Since joining the Institute in 2017, she and her colleagues have resolved the structures of several major drug targets, including TRPM2, a protein integrally involved in temperature regulation. This work was supported by the Institute’s Employee Impact Campaign, which is funded by Du’s colleagues and supported generation of data required to obtain further federal and fellowship funding.

“It is thrilling to shed light on such a long-standing scientific mystery,” Du said. “We hope our findings will serve as the basis for new and better treatments and improved patient care.”



DR. JUAN DU (LEFT) IN HER LAB WITH VAN ANDEL INSTITUTE GRADUATE SCHOOL STUDENT EMERY HALEY

MEETING THE GRAND CHALLENGES OF PARKINSON’S DISEASE

More than 200 years ago, British surgeon Dr. James Parkinson penned an essay about “the shaking palsy,” a mysterious disorder that would later come to bear his name.

Since then, our understanding of what we now call Parkinson’s disease has vastly changed. No longer is it considered simply to be a movement disorder. Instead, we now know that it comprises a complex mix of motor and non-motor symptoms, the latter of which may start decades before diagnosis. We also know that, in most cases, it cannot be attributed to a singular cause. Instead, a host of factors — many unique to individual people — are likely at play.

In August, hundreds of scientists, physicians and people with Parkinson’s joined together at the Institute for the *Grand Challenges in Parkinson’s Disease* symposium and *Rallying to the Challenge* meeting, co-hosted with The Cure Parkinson’s Trust and Parkinson’s Movement. Both events tackled genetics, one of the factors that contributes to the disease, from its role in Parkinson’s origins to the real-world implications of genetic testing for the families of people with the disease.

“We’ve come a long way in parsing the genetic aspects of Parkinson’s, but we still have much more to do in terms of translating this knowledge into actionable prevention or treatment strategies,” said Dr. José Brás, an associate professor at Van Andel Institute and co-organizer of this year’s symposium. “*Grand Challenges in Parkinson’s Disease* and *Rallying to the Challenge* are invaluable opportunities to unite the research and advocacy communities under one roof to tackle urgent problems and to find ways to work together to beat Parkinson’s.”

More than 90% of Parkinson’s cases are sporadic, meaning that there is no singular, currently identifiable cause. Growing evidence suggests that the disease results from a combination of factors that vary from person to person, such as genetics, shifts in how our genetics are regulated (a set of processes called epigenetics) and environmental exposures.

Scientists believe these changes slowly accumulate until they reach a critical point, eventually tipping the scale toward Parkinson’s. The exception to this is the small subset of cases that can be directly linked to changes in specific genes that are passed down through families. However, it is important to note that having a mutation in one of these genes does not always mean a person will get Parkinson’s.


“Understanding the role genetics plays in Parkinson’s is a daunting task but the benefits are undeniable,” said Dr. Rita Guerreiro, an associate professor at Van Andel Institute and *Grand Challenges in Parkinson’s Disease* co-organizer. “For years, this symposium and the *Rallying to the Challenge* meeting have served as important forums to bring together critical viewpoints necessary to make tangible progress.”

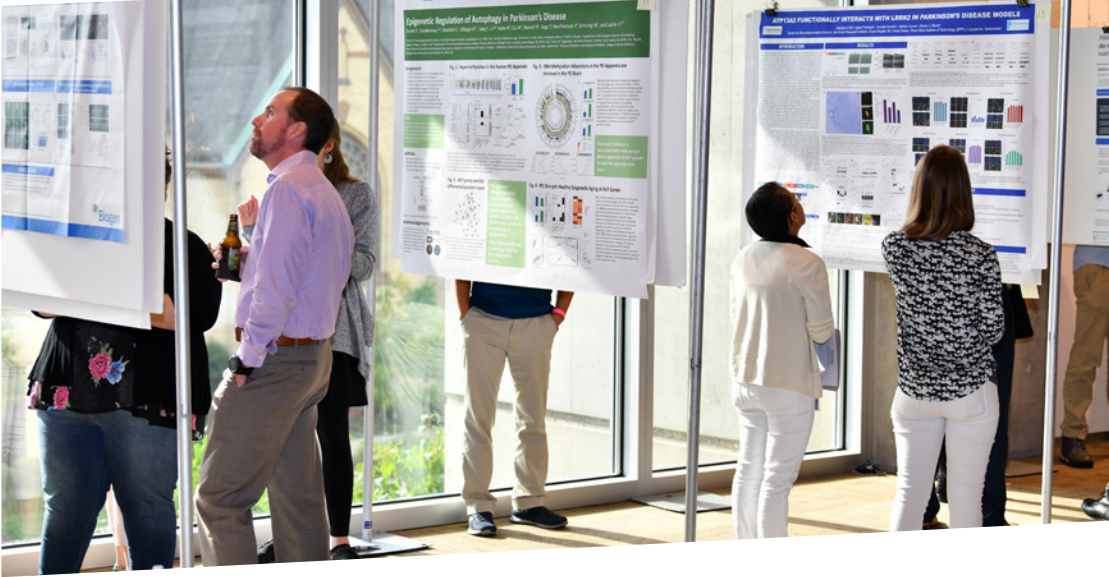
At *Grand Challenges in Parkinson’s Disease*, scientists took a deep dive into many of the emerging areas of genetic research in Parkinson’s. Participants explored whether sporadic and familial Parkinson’s should be considered to be the same disease, how a rare genetic disorder is helping untangle the genetic contributors to Parkinson’s and how genetic features of the disease may be used to inform clinical trials that test potential therapies.

“We’ve come a long way in parsing the genetic aspects of Parkinson’s, but we still have much more to do in terms of translating this knowledge into actionable prevention or treatment strategies.”

— DR. JOSÉ BRÁS

These advances are exciting but, as the attendees of the *Rallying to the Challenge* meeting discussed, there also are caveats. The advent of much more accessible genetic testing has brought with it a host of new challenges. Questions remain as to which test to use, when to test, how to integrate data gathered from testing to support research and what to do with results when we lack effective ways to halt the disease’s progress. Critically, they also highlighted the need for the scientific community to clearly and concisely explain research findings in context, and the need for the people in the Parkinson’s community to be able to personally interpret and understand the implications of research findings.

The collaborative spirit of *Grand Challenges in Parkinson’s Disease* and *Rallying to the Challenge* underscores the importance of team science and inclusion of people with Parkinson’s in the process. They also reaffirm our shared commitment to an overarching goal — to improve the lives of people with Parkinson’s and drive progress toward a cure. 



HONORING EXCELLENCE

Ellen Sidransky, M.D., National Human Genome Research Institute, National Institutes of Health

Jay Van Andel Award for Outstanding Achievement in Parkinson’s Research

Dr. Sidransky was the first to link an increase in Parkinson’s disease risk to mutations in the gene *GBA*, which produces an enzyme that breaks down a common lipid located in lysosomes, cells’ internal waste removal systems. Alterations in *GBA* are now known to be the most common genetic risk factor for Parkinson’s and dementia with Lewy bodies, and is a major target for new experimental medications designed to slow or stop progression, a feat not possible with current treatments.

Tilo Kunath, Ph.D., University of Edinburgh
Tom Isaacs Award

Dr. Kunath made headlines for his work with advocate Dr. Joy Milne and her ability to detect Parkinson’s disease by scent. Milne noticed her late husband’s scent changed around 12 years before his diagnosis with Parkinson’s. Later, while at a research meeting with many people with Parkinson’s in attendance, she noticed many of them carried a similar scent. She reported this to Kunath, who pursued this idea further and has since worked alongside Milne, Perdita Barran, Ph.D., of the University of Manchester, and a team of researchers to isolate several substances in the skin that signal Parkinson’s, opening potential new avenues for earlier diagnosis and, hopefully one day, therapeutic intervention. Kunath’s empathy, enthusiastic engagement with the Parkinson’s community and willingness to share his knowledge were central to his nomination and subsequent selection as the 2019 honoree. The Tom Isaacs Award is jointly presented by Van Andel Institute and The Cure Parkinson’s Trust in memory of Trust co-founder and champion of the Parkinson’s community, Tom Isaacs.

(TOP TO BOTTOM) MEMBERS OF THE CURE PARKINSON’S TRUST-VAN ANDEL INSTITUTE LINKED CLINICAL TRIALS TEAM; DR. PATRIK BRUNDIN, DR. ELLEN SIDRANSKY, DR. JOSÉ BRÁS & DR. RITA GUERREIRO; *GRAND CHALLENGES IN PARKINSON’S DISEASE* POSTER SESSION

HOW VAN ANDEL INSTITUTE SUPPORTS CLINICAL TRIALS THROUGH COLLABORATION AND CONNECTION

INSTITUTE SERVES AS A CONNECTOR THAT FOSTERS DISCOVERY OF POTENTIAL NEW TREATMENTS

Clinical trials can be a bastion of hope for people living with terminal disease. For a person with cancer who may be at the end of what standard care offers, clinical trials investigating potential new treatments can quite literally be a lifeline. At the same time, clinical trials for diseases like Parkinson's, where breakthroughs have historically been few and far between, give participants hope that they could be on the cutting edge of potential new therapies.

Although Van Andel Institute does not treat patients or conduct clinical trials onsite, it is positioned to support the global efforts to find new and innovative approaches to treating — and perhaps curing — these diseases. VAI scientists lend their expertise and laboratories to the hunt for new therapies, and the Institute brings together the many groups — scientists, physicians, philanthropists and companies — required to carry out trials.

Currently, VAI supports nearly two dozen clinical trials geared toward finding new, life-changing treatments for Parkinson's and cancer through a pair of innovative collaborations: the Linked Clinical Trials initiative, a partnership with The Cure Parkinson's Trust in the United Kingdom, and the Van Andel Research Institute–Stand

Up To Cancer Epigenetics Dream Team, a coalition of leading scientists, physicians, philanthropies and industry partners with a shared goal of getting promising new cancer therapies to patients faster.

“Diseases like cancer and Parkinson’s are too big of a problem for one person or group to take on alone – they require a concerted, collaborative effort.”
– DR. PETER A. JONES

“Diseases like cancer and Parkinson's are too big of a problem for one person or group to take on alone — they require a concerted, collaborative effort,” said Dr. Peter A. Jones, VAI's chief scientific officer. “Together we are united with one goal: to provide groundbreaking new therapies and, ultimately, beat these diseases that steal away so many of our loved ones.”

Clinical trials ongoing
Among the clinical trials currently underway through the VARI–SU2C Epigenetics Dream Team are a slate of combination therapies that pair epigenetic drugs, which work by regulating when and to what extent the instructions encoded in our genes are carried out, with other medications such as those that boost the immune system.

These potentially potent combinations are now being investigated in lung cancer, bladder cancer and blood cancers, among others, and may better fight these tough-to-treat diseases.

“We’re trying to advance the standard of care by having new treatment options in the arsenal that an oncologist or a hematologist could have to fight patients’ cancers,” said Dan Rogers, the Institute’s clinical research manager. “From a patient perspective, clinical trials offer treatments that could possibly extend their life and give them good quality of life.”

Progress can’t wait
According to some estimates, it can take over a decade and more than a billion dollars to shepherd a new drug through the research, development and clinical trial phases before pharmaceutical companies can obtain federal approval to go to market. Still, despite the hard work poured into developing new therapies, more than 9 in 10 new drugs fail in development, while the diseases they are meant to treat continue claiming lives.

That is where the Institute’s Linked Clinical Trials collaboration with The Cure Parkinson’s Trust helps by exploring whether drugs already on the market could be effective treatments for diseases they weren’t originally designed to treat.

“Through LCT, scientists are looking at what drugs are already approved by the Food and Drug Administration to identify potential avenues for new treatments,” Rogers said. “This approach, coupled with work being done to discover new drugs, helps us have a broad impact in clinical research across the country and world.”

For instance, clinical trials are ongoing to explore whether a number of drugs intended for diabetes treatment — including exenatide, lixisenatide and liraglutide — could also be treatments for people with Parkinson's. That's because the complex molecular mechanisms that give rise to both diseases overlap, meaning a drug designed to fix a problem in diabetes may also help fix a similar issue in Parkinson's.

A tailored approach
A strong research portfolio and dedicated team of scientists positions the Institute to pursue the breakthroughs that benefit humanity. The Institute’s multipronged approach to clinical trials — both uncovering new drugs and seeking to repurpose old ones — reflects this.

“By working with a collective of investigators and institutions, we leverage our scientific strength to have an impact,” Rogers said. “We work boldly to advance ideas that could change the standard of care for generations.”

For more information on these clinical trials, visit vai.org/clinical-trials.

DISEASES BEING TARGETED BY CLINICAL TRIALS

- Parkinson's disease
- Metastatic colorectal cancer
- Acute myeloid leukemia
- Myelodysplastic syndrome (MDS), acute myeloid leukemia (AML), Myelodysplastic syndrome (MDS) and chronic myelomonocytic leukemia (CMML)
- Small cell lung cancer
- Non-small cell lung cancer
- Bladder (urothelial) cancer
- Liver, pancreatic, bile duct and gallbladder cancers
- Breast cancers, triple negative or hormone resistant/HER2-negative metastatic breast cancer

SCIENTISTS EXPLORE NEXUS OF EPIGENETICS AND THE BRAIN

The instructions for life are written in our DNA, the complex genetic code passed down from our parents and combined to make us.

But we now know that there is more at work here. Another code overlays this genetic blueprint, governing how, when and to what extent these biological instructions are carried out. This secondary level of control, called epigenetics, holds exceptional promise for solving some of biology's biggest mysteries and better understanding and treating countless illnesses.

"Epigenetics are commonly studied in cancer but we're really only in the early stages of studying epigenetic mechanisms in the brains of patients with neurodegenerative and psychiatric diseases," said Dr. Viviane Labrie, an assistant professor at Van Andel Institute. "It's an entirely new and potentially transformative frontier."

She and her team are already hard at work charting the nexus between epigenetics and the brain. What they find could have major implications for better diagnosing and treating numerous neurological disorders that affect millions of people around the world.

Adjusting genetic volume dials in Alzheimer's

An estimated 5.8 million people in the U.S. and 44 million people worldwide have Alzheimer's disease, making it the most common cause of dementia globally and the sixth leading cause of death in the U.S. Although those figures are staggering on their own, the problem is expected to worsen — by 2050, the number of people with Alzheimer's is expected to rise to 14 million and 135 million, respectively, due in part to a growing and aging global population.

This spring, Labrie and her colleagues identified a mechanism that accelerates aging in the brain and gives rise to the disease's most devastating biological features. Their findings combine three long-standing theories behind Alzheimer's origins into one cohesive narrative that explains how healthy cells become sick and gives scientists new avenues for screening compounds designed to slow or stop disease progression, something existing medications cannot do.

"Epigenetics are commonly studied in cancer but we're really only in the early stages of studying epigenetic mechanisms in the brains of patients with neurodegenerative and psychiatric diseases."

— DR. VIVIANE LABRIE

The findings center on genetic volume dials called enhancers, which turn the activity of genes up or down based on influences like aging and environmental factors. Labrie's team took a comprehensive look at enhancers in brain cells of people at varying stages of Alzheimer's and compared them to the cells of healthy people. They found that in normal aging, there is a progressive loss of important epigenetic marks in enhancers. In Alzheimer's, this loss is accelerated, essentially making the cells act older than they are and leaving them vulnerable to the disease.

At the same time, these enhancers over-activate a suite of genes involved in Alzheimer's pathology in brain cells,

spurring the formation of plaques and tangles, and reactivating the cell cycle in fully formed cells — a highly toxic combination.

"In adults, brain cells typically are done dividing. When enhancers reactivate cell division, it's incredibly damaging," Labrie said. "The enhancer changes we found also encourage the development of plaques, which act as gasoline for the spread of toxic tangles, propagating them through the brain like wildfire. Taken together, enhancer abnormalities that promote plaques, tangles and cell cycle reactivation appear to be paving the way for brain cell death in Alzheimer's disease."

Labrie and her colleagues also linked enhancer changes to the rate of cognitive decline in Alzheimer's patients. They next plan to search for compounds that may fix broken enhancers and, hopefully, translate their findings into new, more effective therapies.

Finding a hot spot for psychotic symptoms

Although they are two separate neurological disorders, schizophrenia and bipolar disorder share several common features; for example, they both are marked by periods of hallucinations, delusions and irregular thought processes. Psychosis in both of these disorders result from the overproduction of dopamine, a key biological regulator of reward-seeking behaviors, emotional responses, learning and movement.

Despite medications existing for both conditions, there are often challenging side effects such as apathy, weight gain and uncontrolled movements called dyskinesias. There are also no effective ways to screen or track progression of either disorder.

And, until recently, they were both at the center of a vexing puzzle.



DR. VIVIANE LABRIE

"We've known since the 1970s that the effectiveness of antipsychotic medications is directly related to their ability to block dopamine signaling. However, the exact mechanism that sparks excessive dopamine in the brain and that leads to psychotic symptoms has been unclear," Labrie said. "We now have a biological explanation that could help make a real difference for people with these disorders."

Earlier this year, Labrie and her collaborators found a hot spot of epigenetic marks that ratchets up dopamine production while simultaneously scrambling the brain's synapses, the information hubs that transmit rapid-fire neural messages responsible for healthy function. The result is a catastrophic shake-

up of the brain's organization and chemical balance that fuels symptoms of psychosis.

These epigenetic marks — chemical tags that switch genes on and off — were clustered at an enhancer for a gene called *IGF2*, a critical regulator of synaptic development. Enhancers are stretches of DNA that help activate genes and can be major players in the development of diseases in the brain and other tissues.

The enhancer also controls the activity of a nearby gene called tyrosine hydroxylase, which produces an enzyme that keeps dopamine in check. When the enhancer is epigenetically switched on, production of dopamine becomes dysregulated, resulting in too much of the chemical in the brain.

"What we're seeing is a one-two punch — the brain is being flooded with too much dopamine and at the same time, it is losing these critical neural connections," Labrie said. "Like many other neurological disorders, schizophrenia and bipolar disorder often have early, or prodromal, phases that begin years before obvious symptoms. It is our hope that our findings may lead to new biomarkers to screen for risk, which would then allow for earlier intervention."

Learn more about Dr. Labrie's work at labrielab.vai.org.

COLLABORATIVE TEAM SEEKS TO DETECT SUICIDE RISK IN THE BLOOD

A Grand Rapids-based study aims to identify blood-based biomarkers for suicide risk, laying the foundation for a test that could help physicians identify people who are likely to self-harm and allow for earlier, life-saving intervention.

The project is the first study of its kind, and is a collaboration between Van Andel Institute’s Dr. Lena Brundin, Pine Rest Christian Mental Health Services’ Dr. Eric Achtyes and Columbia University Department of Psychiatry’s Dr. J. John Mann. It is supported by a newly awarded five-year, \$3.6 million grant from the National Institute of Mental Health (NIMH) of the National Institutes of Health.

“Suicide is a leading cause of death in the U.S. and, unfortunately, rates continue to increase,” Brundin said. “Suicidal ideation is more than mental — there are measurable biological contributors such as byproducts of chronic inflammation that influence a person’s likelihood for self-harm. Leveraging these markers could hold the key to helping people before it is too late.”

The study comes at a critical time. Despite growing awareness and the best efforts of mental health professionals, suicide rates are climbing. In 2017, suicide was the 10th leading cause of death overall in the U.S. and the second leading cause of death among people ages 10–34. From 2001 to 2017, suicide rates in the U.S. grew 31%, from 10.7 to 14 people per 100,000, according to NIMH.

Pinpointing the cause

Recent findings suggest that sustained inflammation may cause a toxic imbalance that alters brain chemistry and elevates suicide risk.

Inflammation is the immune system’s normal reaction to harmful stimuli, such as infection, injury or chronic disease, or even stress. Following one of these insults, the body releases a cascade of white blood cells, which produce chemicals that attempt to remove the cause of the problem and start the healing process. The results, though designed to help us, aren’t always pleasant. They include increased blood flow, leading to redness and increased heat; fluid rushing to the area, causing swelling; and pain, the result of a flood of chemicals to stimulate nerves.

Once their job is done, cells stop pumping out these chemicals and the symptoms of inflammation wear off. Occasionally, however, something goes awry and the body overproduces inflammatory chemicals or continues producing them long after it should have stopped. If left unchecked, this can disrupt the body’s ability to function normally and contribute to a number of issues, including depression.

Searching for answers

During the five-year study, which is slated to begin enrolling at Pine Rest in October, 160 people will be followed for one year and provide blood specimens along with clinical information. Participants will be selected from those who are admitted to the inpatient hospital or the outpatient clinics and divided into two groups — those who are depressed with suicidal thoughts or behaviors and those who present with depression alone. In addition to searching for markers, the team will work to identify the inflammatory mechanisms that give rise to depressive and suicidal symptoms with the goal of developing ways to stop them.

“Clinicians are looking for tools to help them identify individuals who are at highest risk for suicide among those who are depressed,” Achtyes said. “We are hopeful this study will help us develop these tools to better understand who is at imminent risk.”

In tandem with the clinical study, the team will search for inflammatory markers in brain tissue samples from people who have died by suicide. The samples are housed at the New York State Psychiatric Institute Brain Bank at Columbia University.

“Suicidal behavior often occurs during an acute crisis or stress affecting a person with a psychiatric illness,” Mann said. “Similarly, inflammation can be triggered by life stress or an acute psychiatric illness and can alter brain function, which may result in depression, fatigue and irritability. In some cases, this can lead to a suicide attempt. We plan to track stress and inflammation in psychiatric patients and link fluctuations in their levels to suicidal thoughts and actions in order to find ways to help prevent suicidal behavior.”

The confidential National Suicide Prevention Lifeline is free and available 24/7 at 1-800-273-TALK (8255).

Research reported in this publication is supported by the National Institute of Mental Health of the National Institutes of Health under award no. 1R01MH118221 (Brundin, Achtyes, Mann). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

DR. ERIC ACHTYES & DR. LENA BRUNDIN



AT VAN ANDEL INSTITUTE GRADUATE SCHOOL, AN INNOVATIVE APPROACH TO SCIENTIFIC EDUCATION

FOUNDED IN 2005, VAIGS BREAKS THE MOLD IN TRAINING THE SCIENCE LEADERS OF TOMORROW

When Dr. Steven J. Triezenberg was recruited to lead Van Andel Institute Graduate School in 2006, he faced an interesting question: how do you build a degree program offered at countless institutions of learning, but make it stand apart from the rest?

It was a challenge that Triezenberg, faculty and staff met head-on by conceiving an adaptive, innovative, research-intensive curriculum built on a mission to create not only the next generation of scientists, but also the biomedical research leaders of the future.

Standing apart from the rest

The Graduate School offers a five-year Ph.D. in molecular and cellular biology. Universities that offer similar degrees have traditionally administered lecture-based courses geared toward giving students broad knowledge of the entire scope of molecular and cellular biology.

The relationship with Institute students, scientists and laboratories creates a learning environment that cultivates scientific leaders. The Institute uses a problem-based curriculum, which helps ensure the Graduate School can adapt its educational offerings around the latest scientific discoveries and breakthroughs.

Rather than lecturing students on information across multiple disciplines, the school leverages its place in a biomedical research institute to develop lifelong learning skills both in the classroom and the laboratory.

"Scientists learn by seeing an interesting problem that nobody has solved yet, and then we read the literature surrounding that problem. We talk with colleagues about the best approach to the problem and then write a proposal saying 'Here's how I want

"Our curriculum inherently stays in touch with where science is, because the problems keep moving as the science keeps moving."

— DR. STEVEN J. TRIEZENBERG

to attack that problem and why it matters," Triezenberg said. "Then we hope that people are convinced enough to want to fund it. That's how scientists learn. We built a curriculum that replicates that process."

This is accomplished through a rigorous curriculum that, in the students' first year, equates to roughly half of their time spent in the classroom and the other half in the laboratory. That ratio shifts in later years to be 80–90% laboratory time and 10–20% classroom time.

"What matters more than gathering knowledge about topics of current interest is building the skills to learn what you will need in the future," Triezenberg said. "Our curriculum inherently stays in touch with where science is, because the problems keep moving as the science keeps moving."

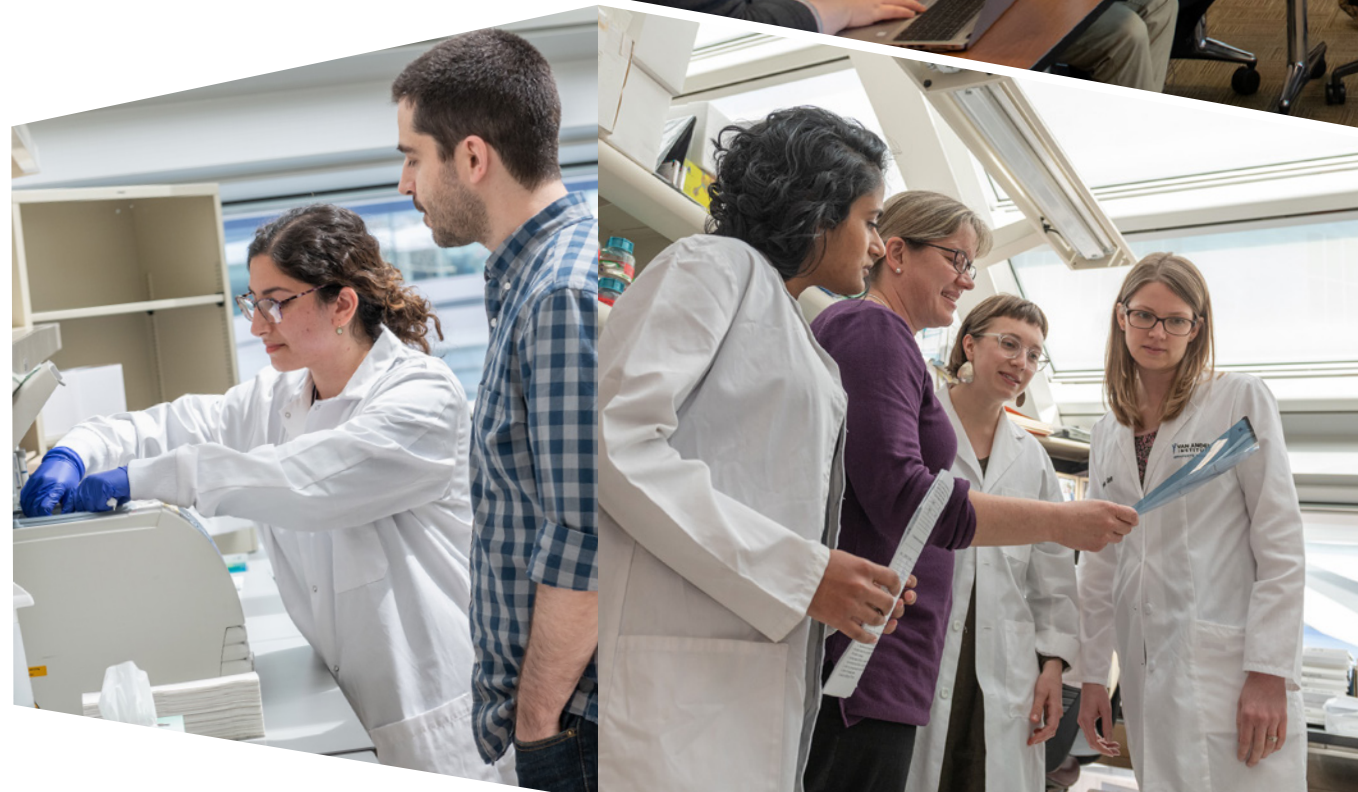
In the later years of the degree program, the curriculum incorporates professional development training with the aim of preparing students to become future scientific leaders. This includes everything from learning how to oversee and conduct experiments to learning how to apply for grants or other research funding.

Working with world-class talent

Because the Graduate School is housed in a research institute, students work alongside some of the brightest minds from around the world who are working to multiply the impact of scientific discovery. This access puts students right in the thick of important discoveries happening in laboratories throughout the Institute. For example, graduate students were authors or co-authors on more than 20 research papers at the Institute in 2018.

"The opportunity to work with scientists in a direct mentoring relationship gives students a supporting role in both raising the prestige and furthering the mission of the Institute," Triezenberg said.

To learn more, visit vaigs.vai.org.



VAN ANDEL INSTITUTE SCIENTISTS MENTOR GRADUATE SCHOOL STUDENTS

SCIENCE ON THE GRAND

INSTITUTE ROLLS OUT THE RED CARPET FOR A TWO-DAY CONFERENCE
FOCUSED ON INNOVATIVE EDUCATION

More than 100 educators from across the United States visited Van Andel Institute for the annual *Science on the Grand* conference held in July. The two-day conference honored the teaching profession and provided guests with breakout sessions, discussions and keynote presentations with the goal of creating classroom culture that supports STEAM (science, technology, engineering, art and math) content, and helps educators nurture their own curiosity for personal growth and enjoyment.

The conference was designed and curated by the Institute's expert team of educators to provide research-based and classroom-tested content that puts the needs of teachers front and center, and addresses content standards, as well as personal and professional development.

Dr. J. Andrew Pospisilik, director of the Institute's Center for Epigenetics, gave a keynote presentation during the event that

highlighted the Institute's work in epigenetics and outlined how epigenetics play a key role in human development and disease treatment. Pospisilik also addressed how teachers can better prepare students by providing them with the skills necessary to be successful in STEAM fields. *New York Times* best-selling author Dave Burgess gave another keynote entitled "Teach Like a Pirate" that showcased new ways teachers can increase student engagement, design wildly creative lessons, and create positive classroom experiences for their students.

Science on the Grand is one of the many, unique ways the Institute engages with and supports teachers and helps them create classrooms where curiosity, creativity and critical thinking thrive.

To learn more about VAI's education programs, including teacher and student-focused events and materials, visit vaei.org.



(LEFT TO RIGHT) DAVE BURGESS GIVING KEYNOTE & SPEAKING DURING A BREAKOUT SESSION AT *SCIENCE ON THE GRAND*; TEACHERS WORK TOGETHER DURING CONFERENCE BREAKOUT SESSIONS; EVENT GUESTS MINGLE IN THE INSTITUTE'S LOBBY

BLUE APPLE TEACHER – AUTHOR PAUL SOLARZ CREATES CLASSROOM EXPERIENCES WHERE STUDENTS TAKE THE LEAD

Students in Paul Solarz' classroom are on an adventure — learning together and discovering new concepts that shape their world. They are part of a new generation of students who are using project-based learning to collaborate, work creatively and think critically about solutions to complex problems. Solarz is a passionate advocate for project-based learning and for more than 20 years has inspired his students at Westgate Elementary School in Arlington Heights, Illinois, to approach the process of learning in new and exciting ways. In 2018, Solarz was approached by Van Andel Institute to help design and author two projects for the Institute's Blue Apple initiative — a newly unveiled program that helps teachers facilitate inspiring learning experiences in their classrooms.

One of Solarz' projects, State of Sustainability, is designed to get students thinking about sustainable environmental practices and how these strategies can improve life in the state where the students live. State of Sustainability is one of 10 Blue Apple projects that are currently being offered to educators throughout the United States, and Solarz is confident that the Institute's new initiative will give students and teachers the tools they need to solve real-world problems and develop a love of learning.

"Blue Apple projects are easy to implement, yet go deep enough to make the class time spent on them extremely worthwhile — plus, they're a whole bunch of fun to teach," Solarz said. "With Blue Apple, the Institute has created instructional experiences that engage and empower students, and make project-based learning fun and motivating."

Solarz creates projects in his classroom that incorporate science, math, engineering, art and technology, and designs them in a way that gives students the space to ask their own questions and work collaboratively to make sense of what they discover. As an experienced educator, he has gained unique insights into the benefits of project-based learning and now believes it's one of the best ways to teach.

"When teachers tell students what to do and what to think, we rob them of the process of learning, and I think our students need to be given trust and freedom to work on their own and with their peers in order to learn how to research information and solve problems," Solarz said. "By experiencing things firsthand, learning becomes much more permanent than if it was just read in a textbook or heard in a lecture. That's why my students are encouraged to complete experiments, conduct surveys and build models of the things they want to understand better."

Designed by teachers around the needs of students, Blue Apple makes project-based learning easy to implement, memorable and fun. Solarz thinks there is nothing better than students who are so immersed in their work that they forget they're working.



PAUL SOLARZ

"Using the State of Sustainability project, my students created detailed infographics using statistics and data, and worked collaboratively as an entire class to create a book to share their research on our state's sustainability regarding various natural resources," Solarz said. "They were so excited to work on this project that they often gave up their lunch and recess in order to keep working together — and at the end of the day, learning just doesn't get more authentic than that."

For information on how you can purchase a Blue Apple project for your classroom, or if you're interested to learn more about Van Andel Institute's project-based learning programs, visit blueappleteacher.org.

EDUCATION WHERE CURIOSITY, CREATIVITY AND CRITICAL THINKING THRIVE

STUDENTS AND TEACHERS TRANSFORM THEIR CLASSROOMS WITH PROJECT-BASED LEARNING

There is an innate desire in most humans to leave the world a better place than it is today. This altruism drives us to discover everything from new therapies for diseases to innovative ways to improve our environment. For students using Van Andel Institute's newly unveiled Blue Apple project-based learning initiative, making the world a better place is where learning begins.

Students solving real problems and finding real answers
Blue Apple uses an educational philosophy called project-based learning to engage grade school students in meaningful projects that address real-world problems. Students ask questions, investigate potential solutions, critique their work, revise, reflect and then share their discoveries with an authentic audience. In many ways, project-based learning mirrors the methods scientists at VAI use to develop new diagnostics and therapies for cancer and other diseases.

“When you start with a big goal like making the world better, students see how their work and the process of learning matters, and they become more intrinsically engaged in the process.”
— DAWN MCCOTTER

Every Blue Apple project includes materials and online resources for students and teachers — and inside every box is an underlying goal: make the world a better place. Blue Apple projects cover topics like water quality, healthy eating and nutrition, germs and illness, generational history, philanthropic investing, micro-lending, green energy and soil conservation. Each project is designed to help students see their value as members of a global community.

“Students come with different motivators that are both extrinsic and intrinsic,” said Dawn McCotter, Van Andel Institute teacher programs manager. “When you start with a big goal like making the world better, students see how their work and the process of learning matters, and they become more intrinsically engaged in the process.”

At the leading edge of education
Project-based learning isn't a new concept, but VAI learning solutions specialists Jamie MacPherson and Ben Talsma believe the Institute is at the forefront of this progressive education movement.

“There are quite a few schools starting to do cross-curricular instruction, but most have not incorporated project-based learning extensively,” Talsma said. “We are extremely well-positioned to serve as a resource for teachers.”

When students work through a Blue Apple project, they use a variety of skills that combine science, math, English, language arts and social studies to uncover new insights and make new discoveries. This approach keeps students invested in their work and gives them ways to acquire the knowledge and skills needed to be successful in school and in the workplace.

“We carefully designed each project so that students need to synthesize cross-curricular skills to solve science-based questions,” Talsma said. “And the best part is everything students are learning is connected to a real-life problem that has meaning and importance for them.”

New tools prepare students for a new century
Project-based learning also prepares students for life as 21st century professionals who will need to navigate a work environment that is technologically advanced and ever-changing.

“Many of the jobs that will exist when our students get into the workforce haven't been invented yet,” MacPherson said. “Project-based learning helps students become adaptable employees with strong soft-skills like collaboration, creativity, communication and persistence.”

As the world of education continues to evolve to meet emerging needs, VAI's Blue Apple is a bold step in the right direction — giving students and teachers the opportunity to make the world a better place, one discovery at a time.

For more information on how you can purchase VAI's Blue Apple projects for your classroom, visit blueappleteacher.org.



DAWN MCCOTTER, JAMIE MACPHERSON & BEN TALSMAN

“Project-based learning helps students become adaptable employees with strong soft-skills like collaboration, creativity, communication and persistence.”
— JAMIE MACPHERSON

WINTERFEST CELEBRATION

On a February night, hundreds of Van Andel Institute donors, researchers and supporters attended the 14th annual *Winterfest Celebration*, our signature event that directly benefits Parkinson's disease research. Held at Cascade Hills Country Club, guests enjoyed cocktails, a strolling dinner and had the opportunity to hear from the Institute's scientists and learn about advancements in Parkinson's research.



(STARTING AT THE TOP, LEFT TO RIGHT) GEORGE SHARPE JR., WINTERFEST COMMITTEE CO-CHAIR, SPEAKS TO EVENT GUESTS; AB GETTING THE PARTY STARTED; CAROL VAN ANDEL, TONY GATES & DAVID VAN ANDEL; DELICIOUSLY COLORFUL WINTERFEST DESSERTS; VAI SCIENTISTS DR. LENA BRUNDIN & DR. VIVIANE LABRIE

VAI Public Lecture Series:
A Focus on Pancreatic Cancer

Van Andel Institute Public Lecture Series: A Focus on Pancreatic Cancer took place in March 2019. Free and open to the public, this informative event featured presentations by Institute scientists that highlighted how basic and translational research are bringing forth more effective methods to detect and treat pancreatic cancer. Speakers at the event included Dr. Bart Williams, professor and director of the Institute's Center for Cancer and Cell Biology, and Dr. Brian Haab, a professor at VAI and assistant dean of VAI's Graduate School. Following the presentations, guests participated in a Q&A session with the scientists.

For information on future *VAI Public Lecture Series* events, visit vai.org.



(STARTING AT THE TOP, LEFT TO RIGHT) DR. BRIAN HAAB; DR. BART WILLIAMS; GUESTS IN VAI'S TOMATIS AUDITORIUM

CONNECTION BREAKFAST

Members of the Institute’s Board of Governors, JBoard and Purple Community Cabinet attended an informational breakfast focused on the Institute’s work in Parkinson’s, Alzheimer’s and Lewy body dementia. The event featured presentations and a Q&A session with VAI scientists, Dr. José Brás and Dr. Rita Guerreiro — experts in the field of neurodegenerative science who joined the Institute in 2018.



(STARTING AT THE TOP, LEFT TO RIGHT) DR. JOSÉ BRÁS; DR. RITA GUERREIRO; TERRA TARANGO; GUESTS ENJOYING BREAKFAST

CAROL VAN ANDEL
ANGEL OF EXCELLENCE AWARDS

The annual *Carol Van Andel Angel of Excellence Awards* celebrate the work of the Institute’s most dedicated supporters and highlights their extraordinary efforts in the service of the Institute’s mission. The 2019 award recipients were Jeff Battershall, Jerry and Karen DeBlaay, Kirk Gibson, the Bea Aldrink Idema Foundation and Sally Schaafsma.



(STARTING AT THE TOP, LEFT TO RIGHT) JEFF BATTERSHALL; KIRK GIBSON & CAROL VAN ANDEL; MEMBERS OF THE BEA ALDRINK IDEMA FOUNDATION; JERRY DEBLAAY, CAROL VAN ANDEL & KAREN DEBLAAY; SALLY SCHAAFSMA

EVENTS

VAI PUBLIC LECTURE SERIES: A FOCUS ON PARKINSON’S, ALZHEIMER’S AND LEWY BODY DEMENTIA

This *Van Andel Institute Public Lecture Series* took place in May and featured presentations by Institute scientists whose research focuses on Parkinson’s, Alzheimer’s and Lewy body dementia, as well as a Q&A session with audience members. Dr. José Brás and Dr. Rita Guerreiro discussed how these diseases are related and how research might one day bring about new and better diagnostics and treatments.

A video of the presentation is available on the Van Andel Institute YouTube page.



(STARTING AT THE TOP, LEFT TO RIGHT) DRs. JOSÉ BRÁS & RITA GUERREIRO; EVENT GUESTS DURING THE Q&A; EVENT GUESTS SIGNING IN AT REGISTRATION; DRs. JOSÉ BRÁS & RITA GUERREIRO DURING THE Q&A MODERATED BY BRETT HOLLEMAN, VAI’S CHIEF DEVELOPMENT OFFICER

BOARD OF GOVERNORS DINNER

Members of Van Andel Institute’s Board of Governors gathered together at Cascade Hills Country Club for an annual dinner that highlights recent Institute achievements and gives members the chance to hear directly from VAI’s leadership. The 2019 dinner featured a keynote presentation by Institute Chairman and CEO David Van Andel, as well as presentations by Chief Scientific Officer Dr. Peter A. Jones and Chief Education Officer Terra Tarango.



(STARTING AT THE TOP, LEFT TO RIGHT) CAROL VAN ANDEL; DAVID VAN ANDEL; DR. PETER A. JONES’ PRESENTATION; BETH VAN PORTFLIET & LYNETTE ELLIS; KAREN DEBLAAY & DR. PETER A. JONES

PURPLE COMMUNITY CELEBRATION

Purple Community, Van Andel Institute’s grassroots fundraising organization, brought together top fundraisers, event organizers and volunteers at the annual *Purple Community Celebration*. The event was emceed by Maranda, host of the popular West Michigan television program “Maranda Where You Live,” and featured a networking reception, dinner and award ceremony. Since its founding in 2009, Purple Community has built strong connections with a diverse, active network and helped to raise millions of dollars in support of research and education. This celebration placed a well-deserved spotlight on the people who give of themselves to benefit the health and well-being of their community and the Institute’s mission.



(STARTING AT THE TOP, LEFT TO RIGHT) TERRA TARANGO; DR. HUI SHEN; MARANDA, ASHLEY OWEN & MCKENZIE HOLLERN; MICHELLE LUNN GOLF COMMITTEE

AROUND THE WORLD

Members of the Van Andel Institute JBoard Ambassadors, Institute supporters, researchers, educators and new friends visited VAI for an evening of fine wine, globally influenced menu items and dancing — all to support the Institute’s education programs. During the event, Terra Tarango, Van Andel Institute’s chief education officer, unveiled exciting education initiatives, including Blue Apple, a new project-based education platform that was launched in 2019.



(STARTING AT THE TOP, LEFT TO RIGHT) EVENT GUESTS PERUSING THE SILENT AUCTION; CAROL VAN ANDEL, TERRA TARANGO & DAVID VAN ANDEL; A BARTENDER POURS A SELECTION FROM THE ARRAY OF ARTISAN WINES; CHRIS & ALYSSA NANCE; TAMARA BEEL

THANK YOU TO OUR GENEROUS EVENT SPONSORS

To learn more about sponsoring an event, contact Sarah Rollman at sarah.rollman@vai.org.

Winterfest

Aon
Atwater Brewery GR
B.D.'s BBQ
Barnes & Thornburg LLP
BDT & Company, LLC
Calamos Investments
Jerry & Suzanne Callahan
Carnelian Energy Capital
Cork Wine & Grille
Cumulus Media
Custer Inc.
Deloitte
Brian DeVries & Barbara Pugh
Divani
Emmanuel Hospice
FastSigns
Grand Rapids Christian Schools
Jana Hall
Harvey Automotive of Grand Rapids
iHeartMedia, Inc.
Macatawa Bank
McShane & Bowie, P.L.C.
Mercy Health
MGD Technologies, Inc.
Michael J. Murdock Oppenheimer & Co.
Michigan State University — College of Human Medicine
Nothing Bundt Cakes
Matt & Beth Osterhaven
Owen-Ames-Kimball Co.
Perper Design Associates, Inc.
Pioneer Construction
PL Capital, LLC
Reds at Thousand Oaks
Robert Barcelona - Merrill Lynch
Rockford Construction
San Chez Bistro
Dan Shapiro & Joe Mangini
Slows Bar BQ
Sobie Meats
Suburban Landscapes
Taconic Charitable Foundation
The Chop House
The Sharpe Collection
Townsquare Media
Trillium Investments
US Signal
Vintage Prime & Seafood
Warner Norcross + Judd LLP

West Michigan Woman
Geoff & LeeAnne Widlak
Women's LifeStyle

PC5K
ACH + Hospitality, Hyatt Place, AC Hotels
Marriott
Advanced Family Chiropractic Center
B-93
Classic Race Management
Consumers Credit Union
D&W Fresh Market, Family Fare & Forest Hills Foods
DJ Grant Miller
Eastern Floral
Gazelle Sports
Give 'Em A Break Safety
Groove City Events
Hulst Jepsen Physical Therapy
Life EMS
Mary Free Bed Rehabilitation Hospital
Mary Free Bed YMCA
Meijer
Mercy Health
Metro Health Sports Medicine
Michigan Paving & Materials Co.
Nothing Bundt Cakes
Priority Health
Ron's Beans
The Peter & Joan Secchia Family Foundation
Versiti

Around the World
Alliance Beverage
Chad Bassett
Belwith Products
Crowe LLP
Cumulus Media
Brian DeVries & Barbara Pugh
Divani
Edward Jones
Greenridge Realty, Inc.
Gun Lake Investments
iHeartMedia, Inc.
John Hancock Retirement Plan Services
Leigh's
Meijer Foundation
Mercy Health
Millennial Guru
Mike & Rachel Mraz

Lee & Alexandra Perez
Renew Family Dental
Reserve Wine & Food
ROAM
Rocket Science
RoMan Manufacturing Inc.
Thacker Sleight
Waddell & Reed
West Michigan Woman
YMCA of Greater Grand Rapids



PURPLE COMMUNITY 5K RACER BATTLES CANCER AND PARKINSON’S AND CROSSES THE FINISH LINE

It was a rainy cold morning, and as Michelle Mahoney neared the end of the first mile of the Consumers Credit Union Purple Community 5K, she took a moment to gather herself and say a few, meaningful words that gave her strength.

“When I finished that first mile I was like, ‘I don’t know if I can do this,’” Mahoney said. “I just kept saying to myself, ‘I can do all things through Christ who strengthens me.’”

Mahoney’s deep connection to her faith has helped her take on all of life’s challenges. In 2015 she was diagnosed with Parkinson’s disease, and in 2017, she was diagnosed with Stage 3 breast cancer. Grounded by a strong and supportive family, Mahoney now approaches life step-by-step, day-by-day and moment-by-moment.

“In Hebrews, it says there is a great cloud of witnesses cheering us on, and I believe we also have witnesses cheering for us here on Earth — and that’s our family and friends who are there for us in difficult times,” she said. “I just know that I have to keep going forward, and hopefully I will inspire other people in the process.”

Powerful steps make a difference

Mahoney had never participated in an organized race before she decided to sign up for the PC5K. She was inspired to participate in the event after meeting Dr. Patrik Brundin, the Institute’s associate director of research and director of the Center for Neurodegenerative Science.

“I became familiar with the Institute when Patrik came to speak to my Parkinson’s support group,” Mahoney said. “When I saw that the Institute was doing a 5K, I knew I wanted to support research that could make a difference in my life and the lives of other people who are fighting these diseases. What the Institute is doing matters to me in a very personal way.”

As Mahoney was about to finish the race, her left leg began to collapse from fatigue, and she noticed a woman riding alongside her on a bicycle who was cheering her on.

“The woman on the bike said that she was a breast cancer survivor and when I felt my leg give out she got off her bike and put her arm under my arm, and with my niece helping on the other side, we crossed the finish line together, and I just broke down in tears because I’d finished.”

A great cloud of witnesses

Throughout her fight, Mahoney is constantly moved by the emotional generosity and support from friends, family and from strangers she’s never met. These interactions have strengthened her resolve and motivated her to push through the most difficult days.

“When I was having chemotherapy, which was a very hard thing to go through, I would go to the grocery store and people would come up behind me and ask ‘What’s your first name?’ and I would say ‘Michelle’ and they would say, ‘We’ll be praying for you,’” Mahoney said. “And that’s really what life is all about. We have people who come alongside us to help us finish our races, and it’s these experiences and connections that encourage us to keep going.”

If you’re interested in supporting Van Andel Institute and joining Purple Community members like Michelle Mahoney, visit purplecommunity.org and discover how you can make a difference and support the Institute’s cancer and neurodegenerative disease research.



(TOP TO BOTTOM) MICHELLE MAHONEY EMBRACES A FELLOW PC5K PARTICIPANT; MICHELLE MAHONEY FINISHES THE RACE WITH A NEW FRIEND & HER NIECE

MIDDLE SCHOOL KIDS HIT THE CATWALK AND RAISE THOUSANDS

A PASSION FOR FANCY DRESSES LEADS TO IMPRESSIVE FUNDRAISING FOR CANCER RESEARCH

It was a bad injury. Holly Barker, a dedicated middle school dancer, tore a muscle while practicing at a trampoline park. While recovering, unable to dance or move without crutches, Barker had the novel idea of connecting her passion for fashion to her school's annual *Cancer Walk*. She discussed the idea with her mom and a few friends and started planning the school's first fashion show fundraiser.

"I have always loved dressing up, and when I was a younger kid I would only wear dresses to school," Barker said. "I just love fashion and I wanted to do something that was unique and different during our school's *Cancer Walk*."

Supportive school and community ... and a ton of cool kids

Barker's school, Duncan Lake Middle School in Caledonia, Michigan, is a powerhouse of philanthropic generosity. The school was inducted into the Institute's Leadership Society for raising more than \$100,000 in support of cancer research. Like the *Cancer Walk*, her fashion show, *Runway for Ribbons*, rallied the school together around Barker's idea of a schoolwide fashion event. The concept was planned in a matter of months, but Barker was able to secure sponsorship and donations from big-name companies like American Eagle, Macy's, Men's Warehouse, Meijer and several West Michigan boutiques.

"I just walked around and knocked on doors to get the donations we needed," Barker said. "We are really lucky to have such a supportive school and community here in West Michigan. And in our school, we got lucky. There are a ton of cool kids."

When she met with a potential sponsor, Barker was prepared and handed each of them a custom business card with her name and contact information emblazoned on one side. Her hard work paid off, and the fashion show featured a variety of designs for kids, young adults and even a few items that were modeled by Caledonia School District principals.



HOLLY BARKER (RIGHT) & HER MOTHER, AUDREY, STRIKE A POSE AT RUNWAY FOR RIBBONS

When kids think big, great things happen

McKenzie Hollern, Purple Community event coordinator, helped Barker work through some of the event's details and is impressed by the students' ability to think big, take initiative and raise \$2,000.

"This event was amazing because it was totally organized and created by the kids," Hollern said. "I don't think kids get enough opportunity to do big events like this, and it was amazing to see Holly's organization and ability to pull off such a well-done fashion show. That's the beauty of Purple Community — if you're a kid with a great idea we're here to help, and we can make it happen."

Barker will begin high school in 2019 and hopes to continue planning events and fundraising for the Institute.

"I really like making a difference and I hope to organize a gala to benefit the Institute in the future," she said. Noticing a theme, Barker stated with a laugh, "I don't know ... maybe I just want another opportunity to make everyone get dressed up and have another chance to wear a fancy dress."

If you would like more information on how you can join Holly Barker and other Purple Community event planners by channeling your interests into support for the Institute's cancer and neurodegenerative disease research, visit purplecommunity.org to get started!

MINI OWNERS ZIP ACROSS THE MACKINAC BRIDGE

TO SUPPORT PARKINSON'S RESEARCH

WEST MICHIGAN LUXURY AUTO DEALERSHIP BRINGS TOGETHER 1,300 DRIVERS FOR AN INCREDIBLE RIDE

Every other year, hundreds of MINI Cooper owners rally together for *MINI on the Mack* — an event that attempted the world record for the longest parade of MINIs and raised more than \$30k in two years for Parkinson's research and adults with disabilities. It's an unusual concept, but according to George Sharpe Jr., partner in Sharpe, a Grand Rapids-based luxury car dealership, MINI owners see the car as "fun to drive and an extension of their personality," and enjoy this opportunity to give back to others. Sharpe helps organize the event that occurs once every two years and benefits Van Andel Institute's Parkinson's research as well as myTEAM TRIUMPH — an organization that assists adults with developmental disabilities.

Sharpe's father, George Sharpe Sr., was diagnosed with Parkinson's in 2009. For more than seven years, members of the Sharpe family have been passionate supporters of the Institute's Parkinson's research.

"My philosophy as a business owner has always been to support organizations that are helping people in our community," Sharpe said. "I have a personal connection to the Institute, and I really want to help spread the Institute's message of hope to as many people as I can."

More than 1,300 MINI owners participated in the event in 2019, and Sharpe continues to be impressed by the popularity of the event that takes participants across the Mackinac Bridge.

"This event connects people from across the country who come from different backgrounds, but are united by a common purpose," Sharpe said. "It's a great way for us to do our part and support these two organizations we care deeply about."

For information on supporting or registering for *MINI on the Mack*, visit their Facebook page @MINIONTHEMACK or visit purplecommunity.org.



GEORGE SHARPE SR.; GEORGE SHARPE JR.; MINI COOPERS DRIVING ACROSS THE MACKINAC BRIDGE; MINI COOPERS & THEIR DRIVERS RALLY DURING THE EVENT

REFUSING TO LET CANCER WIN, ERIN DEAN INSPIRES THOUSANDS

MOTHER OF THREE DROPS PUCK, SHARES STORY AT GRAND RAPIDS GRIFFINS' PURPLE COMMUNITY GAME

Erin Dean didn't have time for cancer. Not with a loving husband and three young kids active in a variety of sports. There were practices to attend and games to see.

In October 2017, when the results of her mammogram were back and a Stage 3 breast cancer diagnosis was delivered, Dean summoned every ounce of her courage and resolved that whatever came next, she would fight to make life as normal as possible for her family. She never anticipated that her courage would give her a platform to inspire thousands.

But that's exactly what happened on a March evening in 2019, when Dean dropped the puck at the Grand Rapids Griffins' annual Van Andel Institute Purple Community game. Some 10,000 spectators watched as Dean made her way onto the ice to briefly share her story before setting the game in motion.

"The puck drop was so fun and surreal," said Dean, who was gifted with three signed hockey sticks — including one from former Detroit Red Wings defenseman Chris Chelios — by the Griffins' equipment manager prior to stepping into the rink. "It was quite the experience to be in front of 10,000 people. When I walked onto the ice, it was like 'Oh my gosh!'"

A mother's resolve and a community's support
That momentous evening was the culmination of months of treatment that included 16 rounds of chemotherapy, a double mastectomy and 30 rounds of radiation. It was aggressive treatment, but even on the hardest days, Dean resolved to beat cancer and carry on with life as best as she could. She had an extensive network of supporters to help.

Her husband, Ryan, was her "rock," and countless friends and family stepped up to help with Dean's household chores — mowing the lawn, cooking meals and the like. Dean found strength in Purple Community, where she was able to connect with other people who had been diagnosed with cancer and work with volunteers to organize fundraising efforts.

"Purple Community had a lot of resources to get me plugged into a group of like-minded people who were pushing for research, pushing through survival," Dean said.

It also helped that all three of her children — Emily, Tyler and Gavin — were active in sports during her treatment. Dean refused to miss practices or games, even if that meant watching from the car when the side effects of treatment limited her mobility. Dean's resolve —

she would call it "stubbornness" — helped keep life going for her family.

"It's just the hand I was dealt, and I have to move forward with this as best I can and keep things as normal as I can for my kids," she said.

A platform to spread hope
Dropping the puck at the Purple Community game was far from the only time Dean shared her inspirational message of hope. She was a featured speaker for the Duncan Lake Middle School *Cancer Walk* and was the "Featured Fighter" for Purple Community's annual *Bee Brave 5K*. Funds raised by both events directly support research at the Institute.

The Dean family has long been financial supporters of VAI and Purple Community, even before Erin's diagnosis. They participated in cancer walks in their community, and Erin and her mother-in-law have attended VAI's *Couture for a Cure* benefit for nearly a decade. The 2019 *Couture for a Cure* event, set for Oct. 10, will happen right around the two-year anniversary of Erin's cancer diagnosis. By then, she will have completed the reconstruction surgery that began over the summer, when she was declared cancer-free.

"I'm really grateful for the opportunities that Van Andel Institute has given me," Dean said. "It's been a tremendous honor to have such a powerful platform to spread a message of hope." ♡



ERIN DEAN

"Purple Community had a lot of resources to get me plugged into a group of like-minded people who were pushing for research, pushing through survival."

— ERIN DEAN



ERIN DEAN & FAMILY



KENT INTERMEDIATE SCHOOL DISTRICT COMMUNITY TRANSITION CAMPUS CREATES A UNIQUE PARTNERSHIP WITH PURPLE COMMUNITY

Jenna Darcy spent hours on the phone talking with dozens of people, trying as hard as she could to register her class in a 5K race. A teacher in the Kent Intermediate School District Community Transition Campus, Darcy works with adults with special needs, providing them with opportunities to volunteer, work and participate in activities in and around West Michigan.

"I called so many organizations in Grand Rapids trying to get our young adults enrolled in a 5K, but I didn't get a great response when I said we might need help with fees and other accommodations," Darcy said. "But when I called Van Andel Institute and talked to Ashley Owen [Purple Community's senior event coordinator] about the Consumers Credit Union Purple Community 5K, I was told that our participants were more than welcome and that she'd waive the fee completely."

Embraced and accepted from the get-go
Darcy's program participants happily took Owen up on her generous offer and have participated in every PC5K since 2016 — raising more than \$2,000 to benefit the Institute.

"Everyone was embraced and accepted right from the get-go, and to be honest, that doesn't always happen," Darcy said. "Everyone at the Institute was so welcoming and wonderful — it was really fantastic, and we really had a riot at the event."

In addition to finding engaging community-based activities for Community Transition Campus participants, Darcy is also responsible for developing vocational training opportunities for members of her class. In 2018, Darcy connected with Purple Community to see if it was possible to establish a volunteer work site at the Institute and develop a partnership between the two organizations.

"Community connections are a huge deal for us, because we are trying to give people



(LEFT TO RIGHT) COMMUNITY TRANSITION CAMPUS YOUNG ADULT PARTICIPANT & JENNA DARCY; CTC YOUNG ADULTS PARTICIPATING IN THE PC5K

"The more we are involved in helping each other, the better chance we have to create a more inclusive community for everyone..."
— JENNA DARCY

a full life and reach their highest level of independence," Darcy said. "That work can't all be done in the classroom — that's why most of our learning happens out in the community at work sites and through volunteer opportunities."

Enriching experience for everyone
Sally Schaafsma, Purple Community's volunteer coordinator, works with the CTC participants when they visit the Institute every Wednesday afternoon. For Schaafsma, the partnership is a way for Purple Community to support a program that does immense good in West Michigan and receive much-needed volunteer help for the fundraising events she helps organize.

"I think it's important that as a community we engage with people with developmental disabilities and let them know that they have skills to contribute and can do purposeful work," she said. "Honestly, without their help our work would be a

lot harder and their contribution is really appreciated by everyone."

With Schaafsma as their guide, CTC members help with clerical work, data entry, prepping materials and equipment and volunteering at Purple Community events. According to Darcy, the volunteers have continued to work with Purple Community during their free time as well, and the partnership continues to be an enriching experience for everyone involved.

"The more we are involved in helping each other, the better chance we have to create a more inclusive community for everyone," Darcy said. "When we do that, we become stronger as a community, and that's something I never take for granted."

For information on Purple Community and volunteering, or how to participate in or create an event, visit purplecommunity.org.

LONGTIME VAN ANDEL INSTITUTE MASTER ELECTRICIAN AND HIS WIFE HIT \$10,000 MARK IN GIVING
JASON AND CINDY DAWES HAVE A FAMILY HISTORY OF CANCER. THEY WANTED TO HELP FIGHT.

Jason Dawes is one of Van Andel Institute's most dedicated longtime donors. He's also one of the people who, every weekday (and sometimes on weekends), makes sure the building stays up and running.

Dawes, a master electrician in VAI's Facilities Department, recently celebrated his 19th anniversary of working at the Institute. But that wasn't the only milestone Dawes could be proud of — he and his wife Cindy eclipsed the \$10,000 mark in donations they've made for two decades under VAI's employee giving program.

"With a whole lot of blessings from above, we're both very proud to hit that mark. I figured someday we'd get there," said Jason Dawes with a smile. "It's just a little bit every year."

The Daweses decided to begin giving to the Institute shortly after Jason started work in the spring of 2000. VAI employees help fund critical research at the Institute

CINDY & JASON DAWES



through payroll deductions or other means under initiatives like the Employee Impact Campaign.

For both Jason and Cindy, funding the fight against disease is deeply personal. Their parents all were diagnosed with at least one form of cancer in their lifetimes, and three died due to complications of different cancers. Jason's mother is a breast cancer survivor who also underwent treatment for bladder cancer. Other family members have faced cancer diagnoses as well.

But it wasn't just personal experiences with family members who had cancer that fueled Jason and Cindy's generous giving. Jason's job at VAI gave him a firsthand look at the work being done to develop new treatment and prevention strategies.

"These diseases are a bigger problem than a lot of people might think," Dawes said. "The amount of people getting cancer is stunning and we're more aware of it

because of me working here."

It wasn't always easy parting with that little bit from Jason's paycheck. Jason and Cindy were raising two daughters, paying a mortgage, helping with college, giving to their church and donating to other charitable causes, all while supporting the Institute. But for the Daweses, it's important to be charitable, and they want to spread that message to others.

"People are surviving these diseases now that never used to, and donating to the research that is helping find new treatments is an opportunity for the community to be part of bettering outcomes for patients," Dawes said. "Every single dollar counts."

MEMORIALS

We appreciate your trust in us to fight disease in memory or in honor of your family and friends — with hope for a healthier tomorrow. To make a gift in memory or honor of a loved one, please call 616.234.5552.

Gus Afendoulis Robert Varty	Robert Bremer Matthew & Rachael Bremer	Mary Kate “Katie” Dutcher Gregory & Amy Cammell Thomas & Linda Conzelmann
Dominic "Nick" Amante Charlene Amante Gina Amante David Bouma & Stephen Girod James & Martha Bultman Ted & Ann De Leeuw Floyd & Sherryl Fleetham Gen Wealth Partners, Inc. David & Jean Gitchell Susan Goodwin Tina Helms Smith Sandra Hopwood Richard Horvitz Alvin & Barbara Masselink Robert R. McKeon Design Mike Schippers Thomas Smith Daryl & Glenda Vetter	Rolland E. Brueck Matthew & Victoria Boland Patricia Clementz B. Hopkins David & Carrie Miracle Robert & Sue Stevenson	Charles Emmerich Gale & Anne Stephens
Allen Andrulis Loren & Pamela Andrulis	Robert Buikema Jane Ganzevoort	Dawn Evink Joyce Buis
Allan Arnoys Robert Arnoys	Roger Buikema David & Nancy Bos Puneet Chowhardy Nancy Clark Dianna Foster John & Sharon Heyboer Barbara Hoezee John Lonergan	James Fitzgibbon Ron Young & Heather Frazee
Ben Baird Bob & Carol Lautenbach	Barry Joseph DeKold Sr. James Tobias & Frances Bailey Nicholas & Judith Herrick Daniel & Ann Jarchow Jay Spencer	Linda Fotieo Kelly Foy
James Barcelona Blake & Mary Krueger	Rosemarie Haviland Daniel & Denise Fedko	Marybeth Fowler Thomas & Colleen Merkins
Nicole Beuschel Sue Baar	James Hass Richard Hillman & Barbara Burby-Hillman	Fredrick Gleason Sandra Gleason
Celia Bickel Beals David & B. Bickel	Delia Hill Bill & Wendy Shuster	James Kuczynski Mitch & Jessica Baldwin
Dale Bordewyk Joan Van Dyke	Rick Hungerford Sr. Thomas & Laura Madison	Benjamin E. Lewitt III William Harper & Patricia Stinton-Harper Jerry & Mary Marshall McShane & Bowie, PLC Grace Stinton
James Breay Jean Breay Rodney & Mimi Martin McShane & Bowie, PLC Michigan Bankers Association Warner Norcross + Judd LLP Bruce & Susan Young	Gordon Drummond Jean Swaney	Stella Lewitt Len & Shana Kica Grace Stinton
	Marie Iagnocco Dawn Ryder	Allan C. Lowe Jr. Allan & Barbara Lowe
	Tana J. Kaiser James & Ruth Awe Richard & Bonnie Boughton Dean & Lynn Fiegel Ladies of the Lakes Red Hat Society Richard & Janet Michaels Jack & Lynn Zeiler	Robert McDowell Richard Hillman & Barbara Burby-Hillman
	Nathan Kelch Rachel Adams	Hilda M. Meyer Joseph & Margaret Biersack
	Dolores Kohut Jeanene Hebert Todd & Valarie Hecksel	Linda Monroe Nicole Yonkers
		Karen Newell William Stewart

John & Bonnie Holm	Teresa Nielsen Patricia Winterburn	Christian & Melanie Patterson Brenda Steiner Nicholas & Shannon Steiner Bill & Donna Wesenick
Barbara Kramer C. DeClarke Kramer	Rita O'Brien Jean Swaney	Mary Swain Jean Swaney
Dawn Krauss Catherine Adsitt J. Kevin Bassett Monte & Phyllis Davis Lawrence & Ruth Dinkel Kenneth Evans Gregory Brothers Farms, LLC Frank & Patricia Gregory Andrew Horton Dorothy Kable Barton LaBelle Richard & Jodie Palmer Karen Rummel Julie Schroeder Shirley Seeley Anne Stein Michael & Alisa Wolner	Claire Ozinga Thomas Ozinga	Robert Turner Kurt Burmeister & Amy Bannink-Burmeister Marty & Jill Hopkins
	David Pendleton Aflac Total System Services, Inc.	Donald Van Artsen George & Betty Keen Gordon Van Otteren
	Thomas Peterson Greg Carlson	Chris Van Haren Brad & Paula Sova
	Peter Ramsey John Meulenberg & Stephanie McNamara Meulenberg	Sara Van Hekken James Van Hekken
	Stephen Savageau Susan Savageau	Tom VandenBerg Janelle Holland
	Dwight Sawyer Jacquelyn Sawyer	Bill Van Regenmorter Jay & Beverly Pruim William & Rosemary Stevenson
	Peter & Jennie Scalabrino Frances Scalabrino	Rebecca Vogelsang Stephen & Jennifer Czech
	Donald Schaefer Maribeth's	Claudia Azkoul Walters George & Christine Abdoo Alan & Debbie Abraham Gerald & Julie Abraham Attallah & Marie Amash Anonymous Peter & Carol Assaly Kevin & Amy Barrons David & Barbara Bipes Ron & Cheryl Blouw Marcia Boot Florence Bouwman Craig & Susan Bruggink Robert & Jane Bruggink Tim & Sarah Bulthuis Lilita Bush Patricia Carrothers Gregory & Shari Chase Doug & Judie Childress Daniel & Susan Chittenden Pat & Diane Coleman Patricia Conde
	James Schmalz Leslie Schmalz	
	Jeffrey Schneider Elaine Amman Lisa Casassa Elizabeth Heroux Randall & Mary Jo Nietling Elmer & Joan Schneider	
	Marie Smith R. Scott & Karin Smith	
	John Spain Clifton Franklund	
	Scott Steiner Timothy & Sharon Anderson Jim & Becki Meek	

Crane Design Gregory & Holly Daggett Michael & Pamela Dahlberg Bruce & Ann Debes Dennis DeVries James & Judith DeVries Lori Dykhouse Michael & Lynette Ellis Laurel Flowers Robert & Christine Frans Elizabeth Gibson John & Barbara Gumpfer Luanne Haaga Mary Lou Helderop Patricia Hemmerle J. Paul & Melissa Janes Donald & Sheri Johnson Gary Jonna Mamie Kalliel Donald & Jennifer Kallil Tricia Karnes Marlene Landstra William & Karen Lott Carole Macrae Susan Mccarthy William & Pamela Mitchell Sue Mogle Stanley & Georgiann Monhollen Marcus & Suhair Muallem Robert & Judy Munch Bruce & Susan Neckers Richard & Patricia Neuman Dave & Linda Newton Gregory & Marian O'Niel John & Judy O'Rourke Nancy Petrick Joyce Petter Kaye Powell Richard & Mary L. Gray Foundation Elaine Rosing Ruth Ruffer Nancy Sacks Jane Schnoor Charlotte Shaheen Doug & Kristin Siegel James & Ruth Sikkema Roger Siouffey Mark & Laura Stetzel Whitney Swartz Linda Taffs Peg Theobald Thomas & Sarah Tollefson Jim & Leslie Tonnies Jeanne Underwood Anthony & Margaret Ventura	Charles Vonk Michael & Bonnie Walters Daniel & Brenda Watkins James & Janet Watkins Gilbert & Ilene Weil Mansour & Lorraine Zain	Lloyd B. Webb Yvonne Webb
	Margery A. Wesler Phillip & Paula Baker Marc & Rhonda Barton Dan & Lori Butkovich Phyllis Hicks Tony & Priscilla Lobretto	
	Eric Westra Janelle Holland	
	Randy Winchester Chuck & Lois Winchester	
	Nona Wirt Anonymous	
	Debra Wittenbach Jeffrey Beswick Shane & Ann Hansen Brian & Gina Kastner Susan McKearney Bruce & Catherine Parkes William & Marcia Poikey Stephen Wittenbach	
	Daryl Woodwyck Joseph Popiel	
	Nicole Wyble Lynette Copping Lynn Lemm Craig Van Dyke	
	Dexter R. Yager David & Carol Van Andel Family Foundation	
	Dan Young Joseph & Kelley Young	

TRIBUTES

William & Barbara Bradley James & Sheral Bradley	Zofia Rek Chicotel, LLC Charitable Fund
Rita Broekema Janelle Holland	Sandy Schumaker Sharon Naughton
Lee W. Formwalt Sanders Foundation	George A. Sharpe Kim Seymour
Jose Infante Trisha VanBuren	Regina Spiesberger David & Jane Munn
Galen Knutson Dan & Carol Butler	Carol Van Andel Neiman Marcus Charitable Fund
Robert Lanphear Janelle Holland	Kim Vlietstra Janelle Holland

These lists represent gifts made between January 1, 2019, and June 1, 2019. The accuracy of these lists is very important to us. Please contact 616.234.5552 if an error has been made.



LEAVE A LEGACY OF SUPPORT FOR CANCER AND PARKINSON'S RESEARCH

Remembering Van Andel Institute VAI with a gift in your will or trust can support research that will help people battling diseases like cancer and Parkinson's. You can also make VAI a beneficiary of retirement plans, financial accounts and life insurance policies.

At VAI, we bring together the world's leading researchers, physicians, patient advocates, pharmaceutical companies and philanthropists to fight cancer and Parkinson's and learn why and where they originate. And we're working fast. Because the quicker we can fully understand the origins of this disease, the better we can stop, treat or even ideally prevent it.

Here are a couple options you might consider:

Cancer Innovation Fund

Cancer is the second leading cause of death in the United States. Van Andel Institute is urgently working to change that, and we have ideas that could help us beat cancer.

But no matter how groundbreaking an idea is, it still has to be tested in a lab, and that process requires resources and funding.

Parkinson's Innovation Fund

More than 10 million people worldwide have Parkinson's disease. That's more than the entire population of Michigan. No treatment has been able to slow or stop the disease. Yet.

Your Support

When you support VAI's Cancer or Parkinson's Innovation funds, your gift, no matter the size, has the potential to take an idea from the mind of a scientist to a treatment that makes a lasting and profound impact on human health. Please join us in our mission to improve the lives of people battling these diseases!

For more information about including VAI in your estate plan, please contact:

Kate Frillmann, Development Director
616.234.5515
kate.frillmann@vai.org

Steve Ozinga, Development Director
616.234.5040
steve.ozinga@vai.org



Will you consider a gift to help us continue our fight against cancer and other diseases that affect more of our loved ones every day?

Donate today at vai.org/give.

Name _____

Organization _____

Street _____

City _____ State _____ Zip _____

Phone _____

Email _____

Enclosed is my contribution of:

☐ \$250 ☐ \$100 ☐ \$50 ☐ Other \$ _____

☐ Check* ☐ Visa ☐ MasterCard ☐ AmEx ☐ Discover

Credit Card Number _____

Expires _____ V-code _____

Signature _____

☐ I would like to speak with someone who can provide additional information about planned giving opportunities.

☐ I would like to receive a FREE Estate Planning Guide.

*Please make checks payable to Van Andel Institute.



333 BOSTWICK AVE. NE
GRAND RAPIDS, MI 49503
VAI.ORG