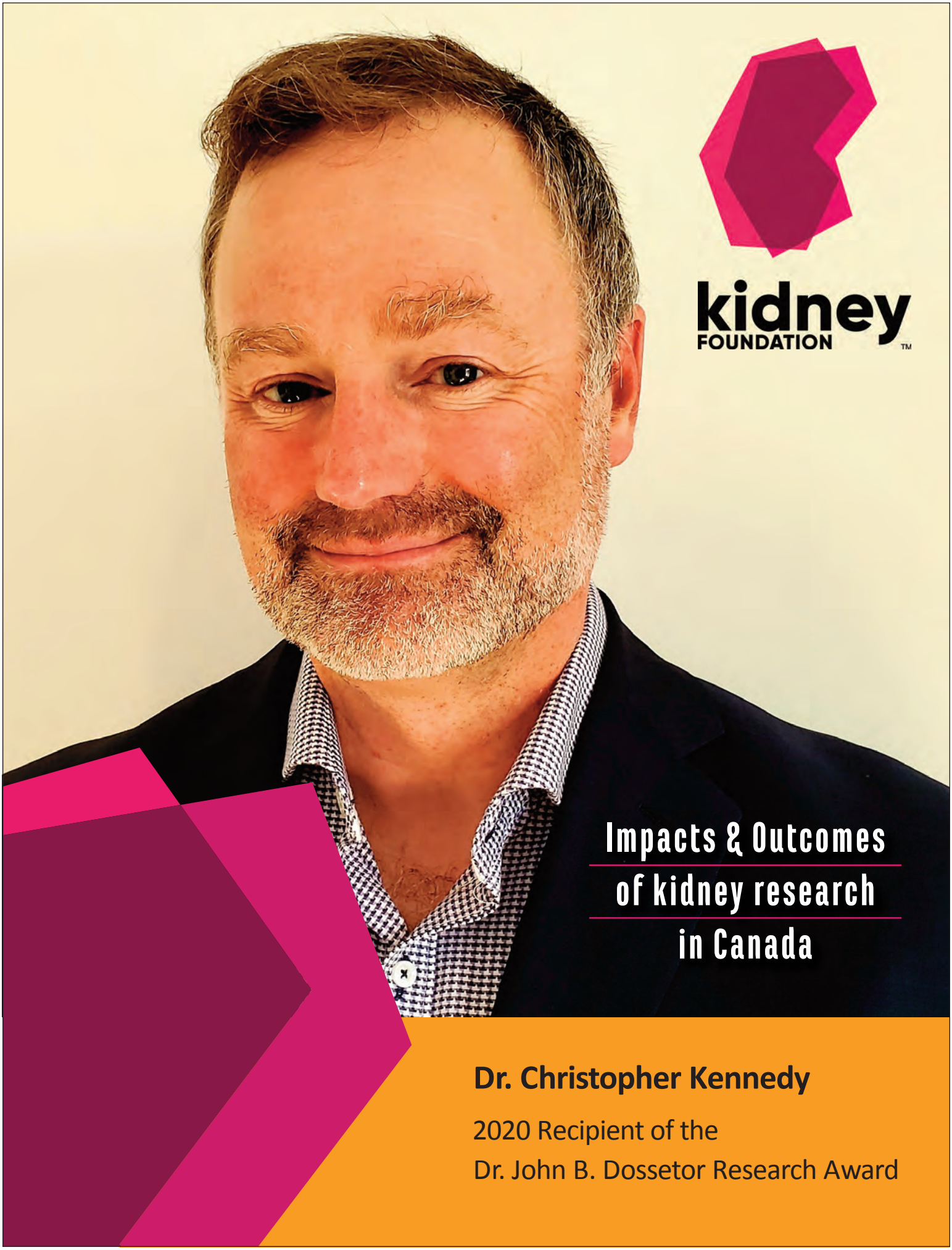

kidney FOUNDATION™

Impacts & Outcomes of kidney research in Canada

Dr. Christopher Kennedy

2020 Recipient of the
Dr. John B. Dossetor Research Award

COVID-19 AND ITS IMPACT ON RESEARCH

Like most everything else, COVID-19 had a significant impact on research and researchers in Canada. Labs were closed and many research competitions were paused or stopped. Health charities like The Kidney Foundation significantly support Canada's research ecosystem, contributing up to $155 million annually. These same charities have faced up to a 50% decrease in revenues due to the COVID-19 pandemic, resulting in a potential $103 million shortfall for research funding.

The Kidney Foundation and its research program were also impacted significantly by the pandemic. In consultation with our Research Council, we made the difficult decision to pause research grant payments for three months during the first wave of the pandemic to ensure business continuity and meet all our research commitments. We also delayed the start of payments for new grants by the same time period. We reduced the number of new grants awarded in competitions that hadn't yet been peer reviewed and negotiated postponement of some commitments with our research partners.

Through these efforts we managed to trim $1 million from our research budget without significantly reducing our support of the research community.

In addition, in response to the pandemic, we partnered with other health charities to advocate for emergency funding to support health research. Many in our research community responded very positively, adding their signatures to a letter sent to the federal government.

At The Kidney Foundation, our commitment to funding research to improve patient outcomes and find a cure is a founding principle and remains a top priority. Despite the challenges presented by a global pandemic, the Foundation remains firmly committed to fulfilling all research commitments and to maintaining the highest priority on research investment.

In addition to providing support to 103 research grants in 2020 and awarding $3.27 million to new research initiatives starting in 2020, we remain key partners in national research initiatives such as Can-SOLVE CKD and the Canadian Donation and Transplantation Research Program (CDTRP). We have also partnered with the Canadian Institutes of Health Research on a new initiative to provide $2 million to fund much-needed research into diabetic kidney disease.

In 2020, we launched our research strategy which focuses on investing in stakeholder-identified priorities, supporting innovative and transformational opportunities, and building the evidence base on impacts and outcomes of kidney health and disease research.

Moving into 2021 and beyond, The Kidney Foundation is committed to ensuring that our researchers can continue their vital work to improve the lives of people affected by kidney disease.

Elizabeth Myles,
National Executive Director

Leanne Stalker,
National Director of Research

RESEARCH INVESTMENTS **MADE IN 2020:**

$2,554,618*

** Includes funding of commitments made in prior years and other support investments*

DR. KENNEDY AT THE HELM OF NEW AND PROMISING RESEARCH

His recent study offers an important step forward in our understanding of diabetic kidney disease

Dr. Christopher Kennedy is a world leader in kidney research whose work is helping us better understand the causes of kidney damage. He is a Senior Scientist at the Ottawa Hospital Research Institute and a Professor in the Faculty of Medicine at the University of Ottawa. For the past 20 years, he has focused his attention on the complex workings of the kidney and the tiny glomeruli that play such a vital role in its function.

"The kidney is a fascinating organ because it is so complicated," Dr. Kennedy says. "I think that trying to understand the kidney is a real challenge. It has so many different cell types and so many functions and roles."

After finishing graduate studies at the University of Ottawa, Dr. Kennedy began his postdoctoral training at Vanderbilt University in Nashville. There, he focused on the role of prostaglandins in renal disease progression as a fellow of the National Kidney Foundation, in the Division of Nephrology. He recalls his time at Vanderbilt as "a real privilege". It was an opportunity to learn from some of the brightest minds in kidney research from around the world, and become immersed in nephrology culture.

Returning to Ottawa, Dr. Kennedy set up a research program which has earned international recognition for its ground-breaking work. Most recently, his team has examined the role of an enzyme that lab evidence has found damages kidney filters.

"The study focuses on an enzyme called Nox5," Dr. Kennedy explains. "It is part of a family of enzymes that take oxygen and convert it into what we call a reactive oxygen species. You need a certain amount of these enzymes in your body to ward off infection, but it is important to have the right balance."

When there are too many Nox5 enzymes circulating, the reactive oxygen they produce can damage healthy cells. His research team has found that Nox5 plays a critical role in contributing to diabetic kidney disease.

"Does introducing the Nox5 gene make kidney disease such as diabetic kidney disease worse in the mouse? The short answer is 'yes, it does.' Our study provides fairly good evidence that if you have too much of this enzyme, that is not a good thing."

Dr. Kennedy's team has also discovered which factors can activate and deactivate the Nox5 enzyme. The ultimate goal is to build on this evidence and to develop new treatments to prevent or slow down kidney disease in people with diabetes and high blood pressure. This research is especially relevant today, as an increasing number of Canadians are diagnosed with diabetes, the leading cause of kidney failure in Canada. Up to one half of people with diabetes will show signs of kidney disease in their lifetime.

Dr. Kennedy has received funding from the Canadian Institutes of Health Research, The Kidney Foundation of Canada and the Canada Foundation for Innovation. He also serves on a number of advisory boards and committees. In 2020, Dr. Kennedy was the recipient of the Dr. John B. Dosseter Research Award, for outstanding service to The Kidney Foundation's research program. He says The Kidney Foundation of Canada has provided vital funding to get his research projects off the ground.

"The Kidney Foundation of Canada has been instrumental in keeping smaller projects going, which then merge and eventually bloom into much larger projects. They have supported my research for over 20 years."

What he finds most fulfilling about his work are those 'wow' moments when new data comes in, that lead to a breakthrough. He acknowledges that doesn't happen too often in research, where you have a lot of misses and frustrations.

"I always tell my students, 90 per cent of the stuff you are going to do is not going to work. It is the 10 per cent that really keeps you coming back."

GENE THERAPY SHOWS PROMISE FOR TREATMENT OF FABRY DISEASE

Through a pilot study partially funded by The Kidney Foundation, five Fabry disease patients were treated at Alberta Health Services' Foothills Medical Centre in Calgary, Princess Margaret Cancer Centre, Toronto, and Nova Scotia Health's Queen Elizabeth II Health Sciences Centre in Halifax with gene therapy. The findings, published in the Nature Communications journal, are very encouraging.

Fabry disease is a rare genetic disorder in which a mutated gene leads to a loss or reduction of the body's production of a particular enzyme that breaks down a fatty material, the buildup of which leads to problems within the heart, kidneys, and other tissues.

Features of Fabry disease include fatigue, diarrhea, heart failure, strokes, kidney disease, skin rash, and nerve pain. Currently, the most common form of treatment is intravenous enzyme replacement therapy administered every two weeks. Alternatively, chaperone therapy, a molecular therapy taken orally helps to preserve the enzyme activity. This treatment is only effective for certain genetic mutations, so just 25% of Canadian Fabry patients are eligible. Both therapeutic options are costly and are required for the patient's lifetime.

Dr. Michael West, a nephrologist and Nova Scotia Health co-investigator of the gene therapy study in Halifax, explains that a therapeutic gap exists in the treatment of Fabry disease. Neither enzyme replacement therapy nor chaperone therapy is a cure; patients are still at risk of kidney failure, strokes, cardiomyopathy, and other complications, albeit to a lesser degree.

The principal investigator in this study, Dr. Jeffrey Medin, MACC Fund Professor at the Medical College of Wisconsin and Affiliate Scientist at University Health Network in Toronto, is one of the pioneers of gene therapy for the treatment of the disease. His early work with gene therapy for Fabry disease in animals dates back to the 1990s.

DR. MICHAEL WEST, NEPHROLOGIST AND NOVA SCOTIA HEALTH CO-INVESTIGATOR

Gene therapy uses a lentiviral vector to add DNA into cells. The lentivirus is first rendered inactive by removal of the viral DNA, then DNA that codes for the normal human enzyme is added. "The virus will quite efficiently 'infect' human cells, in other words, transmit the new DNA into the host cell DNA, which allows cells to make normal enzymes," explains Dr. West. Prior to the therapy, patients donated blood stem cells to which the Lentiviral vector was then added. They then received a single dose of chemotherapy, which is used routinely for stem cell transplants to make room in the bone marrow for the stem cells to engraft and produce daughter cells. The transfected cells were then infused into the patients through a peripheral IV which was performed on an outpatient basis. Regular blood work was done to monitor the patients following the procedure.

In this first-ever gene therapy trial for Fabry disease, the patients involved were followed from January 2017 to February 2020. Their follow-up will continue until February 2024.

"We were able to show that the amount of enzyme that the patient made started to go up by day 12," states Dr. West. "It continued to rise in all five patients and stayed that way so that they were all well above the baseline level that they had previously." Three of the five patients were able to stop their intravenous enzyme replacement therapy.

The primary goals of the study were to investigate the feasibility and safety of gene therapy treatment for Fabry disease. The study did not find any untoward safety events arising from the treatments. Furthermore, notes Dr. West, the treatment could prove to be less costly than those currently available.

"I wouldn't go so far as to say this is a cure for these patients," cautions Dr. West. "But it may turn out to be a better way to provide enzyme therapy 24/7 to these patients as opposed to just giving it once every two weeks."

"We are very pleased that this worked and we're very appreciative of funding from The Kidney Foundation," concludes Dr. West.

LEADING EFFORTS TO BETTER UNDERSTAND KIDNEY REJECTION AND FIBROSIS AFTER TRANSPLANT

For Dr. Ana Konvalinka, one of the most satisfying aspects of research is being part of a scientific team, working together to solve puzzles. In nephrology there are many unknowns to explore. Her lab in Toronto is guided by a central question: What can we do to heal kidneys so they will work better for longer?

"All of my research endeavors have been motivated by unmet clinical needs. There are enormous unmet clinical needs in nephrology," Dr. Konvalinka says. "Probably the biggest ones have to do with improved therapies to arrest the progression of kidney disease and prevent premature kidney graft loss."

Dr. Konvalinka is a nephrologist and clinician scientist at the University Health Network in Ontario. She is also an Assistant Professor at the University of Toronto. After completing her medical degree at the University of Ottawa in 2003, she studied internal medicine and nephrology in Toronto, and earned a PhD in basic science.

It was during her nephrology residency training that Dr. Konvalinka decided to pursue research in an effort to find new ways to fight kidney disease. She completed clinician-scientist training and began her career as a principal investigator in 2015. Her very first research grant was from The Kidney Foundation of Canada.

"The Kidney Foundation of Canada biomedical research grant was my first official grant, and it cemented my confidence and provided me with the necessary funds to keep going," she says, noting that she received a Kidney Foundation Biomedical Research Grant and KRESCENT new investigator grant the same year. The KRESCENT grant, she adds, was equally important for its training and opportunities for professional networking and collaboration.

Furthermore, through a special research project grant from the Foundation to study predictive biomarkers, her lab is working to examine potential markers of early kidney graft fibrosis in the transplanted organ. "For those two reasons, The Kidney Foundation of Canada has played an absolutely fundamental role in any success I may have in the future."

DR. ANA KONVALINKA

Dr. Konvalinka's main clinical and research interests are in antibody-mediated rejection, which is the leading cause of the premature loss of transplanted kidneys. Her lab is working to better understand the specific ways antibodies cause donor kidney rejection and injure tissue in the transplanted organ. They are looking to identify how these antibodies interact with immune cells in the blood and in the tissue. The goal is to design better and more personalized treatments for patients and have donor kidneys last longer in transplant recipients.

Currently, she notes, living donor kidneys in her transplant program stay functional for about 20 years on average while a kidney from a deceased donor usually lasts about 12-15 years.

"You can imagine that a young person who has to have renal replacement therapy will inevitably have multiple transplants in their lifetime," Dr. Konvalinka says. "The function of those transplants will ultimately be impaired because of mostly scarring and antibody-mediated rejection. We are looking at ways to have the kidneys last longer, so each patient could have one kidney transplant for life."

Medical research is often incremental, but Dr. Konvalinka's lab has made some exciting progress. Her research compared the kidneys of patients who had antibody-mediated rejection to patients with other forms of kidney injury. The result was a significant discovery. Dr. Konvalinka found there were some unexpected and very early changes in the tissue that surrounds and supports the cells in the kidney of those who developed antibody-mediated rejection.

"This is very important because you usually see these types of alterations very late in chronic disease when changes are irreversible," Dr. Konvalinka notes. "Nobody previously showed that these changes can actually begin to happen early and nobody really knows what causes them. So, we are beginning to study why they happen so early and how we can reverse them."

She hopes the discoveries they make in the lab will later translate into clinical studies and new treatments to slow down, or even reverse kidney damage. The ultimate goal is to improve patient outcomes, so people living with kidney disease can be offered a better quality of life in the years ahead.

ARTICLE BY HEIDI WESTFIELD

IDENTIFYING THE GENETIC CAUSES OF ATYPICAL POLYCYSTIC KIDNEY DISEASE

DR. YORK PEI

Polycystic kidney disease (PKD) is a genetic disorder that triggers multiple cysts to form in the kidneys. It is also one of the leading causes of advanced kidney failure.

Autosomal dominant polycystic kidney disease (ADPKD) is the most common inherited cause of PKD and is generally diagnosed by an ultrasound scan when a family history exists. However, up to 25% of patients with PKD do not have a positive family history of ADPKD, display abnormal kidney imaging patterns, or are tested negative for PKD1 and PKD2 mutations which account for most of the cases of ADPKD; these patients are said to have atypical PKD. Identifying the origin of atypical PKD in any given patient (i.e., isolating the specific gene mutations) can be expensive and time-consuming as it requires the screening of multiple genes beyond those involved in ADPKD.

Additionally, some people with atypical PKD may have a condition called "somatic mosaicism" whereby organs and tissues are comprised of both normal and mutated cells due to an impacted stem cell during embryo development.

Dr. York Pei and his team of investigators are using next generation sequencing (NGS) – a new technology that provides comprehensive mutation screening of multiple genes at a modest cost – to determine the genetic causes of a cohort of patients with atypical PKD. A promising tool that is revolutionizing novel disease gene discovery, NGS also delivers an in-depth analysis of DNA sequencing patterns that facilitates the detection of mosaic mutations. Dr. Pei is hopeful his research will accelerate the advancement of cost-effective molecular diagnostic training and ultimately lead to ground-breaking treatments for PKD.

WHAT THIS MEANS FOR PATIENTS:

Next generation sequencing will allow researchers to recognize specific gene defects in PKD biology and develop targeted therapies to prevent patients' progression to kidney failure.

IMPROVING KIDNEY CARE USING PATIENT-RELATED OUTCOMES

DR. KARA SCHICK-MAKAROFF

There is international interest on the use of patient-reported outcomes and experience measures (PROs) in kidney care. PROs are recognized as a means for patients to provide information about their quality of life (e.g., well-being, overall health, symptoms, functional status and other aspects of psychological, social, and spiritual quality of life) and experiences with care. Currently, there is a knowledge gap in our understanding of how PROs are optimally used in nephrology care. The purpose was to study the use of PROs for improving person-centred care at individual (e.g., patients, caregivers, providers) and combined (e.g., government, policy, system) levels of health care decision making. The study included pre-dialysis care, dialysis, pediatric kidney disease, and kidney transplantation. Dr. Schick-Makaroff looked at the literature using an approach called "realist synthesis." Her searches identified 19,961 texts; 84 theory and 34 research texts were used.

PROs are intended to be useful for providing person-centred kidney care through three types of use. The first type is use of individual-level PRO data for patient care. This first type had the largest amount of literature exploring the topic. Clinician use to support person-centred care, and patient use to support patient engagement, are meant to improve patient satisfaction, health and quality of life. Electronic collection may support efforts towards these goals. The second type is combined PRO data, which may be publicly reported, to inform decisions in patient care. And the third type is organizational use of combined PRO data, including publicly available PRO data to compare dialysis centres. Both the second and third types of PRO use include pressures that may trigger plans to improve the care provided to kidney patients. While the second and third types are important in many national kidney programs, they have minimal research support.

This work was presented at conferences and published in the journals *BMC Systematic Review and International Journal of Qualitative Methods*.

Dr. Schick-Makaroff and her team are working toward dissemination (in articles) and synthesizing findings into 2-3-minute whiteboard videos, one for patients and one for clinicians, which will be posted on www.healthyqol.com

WHAT THIS MEANS FOR PATIENTS:

The findings from this synthesis will provide a framework to guide both policy makers and health professionals on how to enhance person-centered care through successful use of PROs across individual and health system levels in nephrology.

USING STRENGTH-BASED APPROACHES TO IMPROVE KIDNEY HEALTH FOR CANADA'S INDIGENOUS POPULATIONS

DR. MARY SMITH

Indigenous people residing in Canada's northern communities often struggle with dialysis and awaiting transplants due to their remote location. Having to travel long distances to receive treatment is costly and creates long and exhausting days. While transplants are performed, the need for more is an ongoing challenge as well as sustaining dialysis and supports within the home or community.

Dr. Mary Smith and her team are working towards expanding kidney health for First Nations, Métis and Inuit populations across the country using holistic and strength-based approaches that encourage communities to come together to address culturally safe solutions directed at improving overall quality of life. Prior to COVID-19, an advisory committee comprised of Indigenous community members with kidney disease from Ontario's North Simcoe Muskoka area met regularly. Together, the committee and research team collaborated on initiatives aimed at promoting learning and recognition of the regional interplay between geography, history and culture in relation to contemporary experiences within health care and health care education.

Through sharing circles where traditions and culture as protocols are honoured, the committee identified strategies to not only foster kidney health and the prevention of kidney disease, but also increase kidney donation and transplantation, and promote accessible dialysis. An Elder resident participant was also appointed to further connections between Indigenous communities. Despite the transition to virtual meetings and teleconferencing during the pandemic, talks continued and novel ideas emerged, including the creation of an online support group.

By raising awareness of indigenous people's needs via a robust community-driven effort, Dr. Smith and her team believe that locally contextual focused solutions to kidney health-related issues can be achieved in tandem with the broader medical system, thereby contributing to enhanced care for these kidney patients and their families.

WHAT THIS MEANS FOR PATIENTS:

Active participation by Indigenous people in every phase of this project will not only help integrate the importance of their ways of being and knowing into research design, but also lead to better future representation of communities, while ultimately improving kidney health and facilitating access to life-saving treatments.

EXPLORING FRAILTY AMONG PATIENTS AWAITING A KIDNEY TRANSPLANT

DR. KARTHIK TENNANKORE

Every year, the number of people in need of a kidney transplant continues to grow due to a shortage of available organs. Currently, Canada has general guidelines regarding eligibility criteria for transplant waiting lists. While a detailed evaluation of an individual's health is part of protocol, researchers are exploring the effects of frailty – any difficulty in function, fitness and activity – on outcomes for kidney patients awaiting a transplant and post-transplant.

Using different tools to measure frailty among people living with kidney disease in centers across Nova Scotia, New Brunswick, Quebec, Ontario and Saskatchewan, Dr. Karthik Tennankore and his team of investigators are examining the influence of frailty on the health of patients waiting for a kidney transplant, as well as the risk of early kidney graft loss after transplant. Frailty is often associated with negative consequences following a kidney transplant, such as risk for a shortened lifespan. By providing transplant specialists with a more complete picture of a person's overall health that complements the tests already being used, Dr. Tennankore's research aims to reinforce objective decision-making about eligibility and better inform patients seeking to be put on a kidney transplant wait list. Additionally, it is an important measure before efforts can be made to mitigate frailty so that individuals will be healthier at the time of their surgery.

Through a greater understanding of frailty's impact, Dr. Tennankore is hopeful this study will be the first step towards a national, standardized evaluation of a patient's function, fitness and activity when being considered for a kidney transplant.

WHAT THIS MEANS FOR PATIENTS:

The identification of individuals at risk of health issues while awaiting a kidney will result in closer monitoring and timely interventions to improve their condition prior to transplant while optimizing outcomes post procedure.

2020 NEW FUNDED RESEARCHERS BY PROGRAM

KIDNEY HEALTH RESEARCH GRANTS

DR. MOHSEN AGHARAZII
Co-Applicant: Richard Larivière
Université Laval, QC
2020-2022: $120,000
Project Title: Accelerated CKD-related vascular calcification: side effects of diuretics drugs
Category: Hypertension

DR. DYLAN BURGER
Principal Applicant: Marcel Ruzicka
Co-Applicant: Brendan McCormick
Ottawa Hospital Research Institute, ON
2020-2022: $118,012
Project Title: Sex differences in platelet microparticles in chronic kidney disease patients on dialysis
Category: Dialysis

DR. XING-ZHEN CHEN
University of Alberta, AB
2020-2022: $120,000
Project Title: Discovering new therapeutic targets for polycystic kidney disease
Category: Kidney Biology

DR. EMMANUELLE CORDAT
University of Alberta, AB
2020-2022: $120,000
Project Title: Understanding the role of claudin-4 in calcium balance to find therapies for kidney stones
Category: Water/Salt and Calcium Handling by the Kidney

DR. ANDREY CYBULSKY
The Research Institute of the McGill University Health Centre, QC
2020-2022: $120,000
Project Title: Studying the dis-regulation of protein kinase SLK that leads to glomerulonephritis
Category: Glomerulonephritis

DR. MÉLANIE DIEUDÉ
Co-Applicant: Héloïse Cardinal
Université de Montreal, QC
2020-2022: $120,000
Project Title: Mechanisms of injury to renal microvessels triggered by anti-LG3 responses in the autoimmune disease lupus nephritis
Category: Predictive Biomarkers

DR. MEGHAN ELLIOTT
Co-Applicants: Braden Manns, Juli Finlay, Kara Schick-Makaroff, Maoliosa Donald, Maria Santana
University of Calgary, AB
2020-2022: $120,000
Project Title:
Promoting the patient voice: understanding the implementation of patient-reported outcome measures in hemodialysis care
Category: Dialysis

DR. MARIE-CHANTAL FORTIN
Co-Applicants: Christy Simpson, Istvan Mucsi, Jagbir Gill, Marie Achille, Shaifali Sandal
Centre Hospitalier de l'Université de Montréal, QC
2020-2022: $79,346
Project Title: Studying stakeholders' perspectives on ethical and logistical issues related to advanced and voucher donation in kidney transplantation in Canada
Category: Transplantation

DR. PAUL GOODYER
The Research Institute of the McGill University Health Centre, QC
2020-2022: $120,000
Project Title: New therapy for a rare form of hereditary kidney stone disease, cystinuria
Category: Genetics

DR. LAKSHMAN GUNARATNAM
Co-Applicant: Elena Tutunea-Fatan
University of Western Ontario, ON
2020-2022: $120,000
Project Title: Role of kidney injury molecule-1 in the acute kidney injury to chronic kidney disease transition
Category: Renal Failure

DR. PAUL ISENRING
Université Laval, QC
2020-2022: $120,000
Project Title: Understanding the mechanisms by which salt, acid base balance and blood pressure is regulated in the kidney
Category: Water/Salt and Calcium Handling by the Kidney

DR. JOAN KREPINSKY
McMaster University, ON
2020-2022: $120,000
Project Title: Role of Lasp1 in the pathogenesis of diabetic kidney disease
Category: Diabetes

DR. JAMES LAN
Co-Applicants: Amanda Jean Vinson, Frans Claas, Gonca Karahan, Howard Gebel, Jagbir Gill, John Gill, Kathryn Tinckam, Paul Keown, Raymond Ng, Robert Bray, Robert Liwski, Sebastian Heidt
University of British Columbia, BC
2020-2022: $119,560
Project Title: Improved laboratory tests for kidney recipients to optimize transplantation
Category: Transplantation

DR. FABRICE MAC-WAY
Co-Applicants: Darren Richard, Nicolas Bertrand
Université Laval, QC
2020-2022: $120,000
Project Title: Nanoparticles to understand and treat vascular calcification in chronic kidney disease
Category: Hypertension

DR. YORK PEI
Toronto General Hospital, ON
2020-2022: $120,000
Project Title: Improving diagnosis of atypical polycystic kidney disease by next generation sequencing
Category: Genetics

DR. JANUSZ RAK
Co-Applicants: Pouria Jandaghi, Yasser Riazalhosseini
The Research Institute of the McGill University Health Centre, QC
2020-2022: $120,000
Project Title: Investigating cancer cell metabolism and tumor microenvironment to discover new treatment options for kidney cancer
Category: Cancer

DR. YASSER RIAZALHOSSEINI
Co-Applicants: Janusz Rak, Kate Glennon, Simon Tanguay
McGill University, ON
2020-2022: $119,996
Project Title: Harnessing non-invasive liquid biopsy information for sex-appropriate management of renal cancer
Category: Cancer

DR. SAMUEL SILVER
Co-Applicants: Abhijat Kitchlu, Amber Molnar, Edward Clark, Oleksa Rewa, Ron Wald, William Beaubien-Souligny
Queen's University, ON
2020-2023: $178,279
Project Title: Promoting kidney recovery after acute kidney injury receiving dialysis
Category: Renal Failure

DR. MANISH SOOD
Co-Applicants: Daniel Schwartz, Doug Manuel, Emily Rhodes, Juan-Jesus Carrero-Roig, Keiichi Sumida, Marcello Tonelli, Min Jun, Navdeep Tangri
Ottawa Hospital Research Institute, ON
2020-2022: $111,967
Project Title: Development, validation and dissemination of a survey-based prediction equation targeting the general public: PREDICT-CKD Lifestyle
Category: Screening & prevention of renal disease

ALLIED HEALTH KIDNEY RESEARCH GRANT

DR. SAMANTHA ANTHONY
Co-Applicants: Istvan Mucsi, Kenneth Fung, Linda Wright, Paula Neves, Rulan Parekh, Susan Abbey
The Hospital for Sick Children, ON
2020-2022: $120,000
Project Title: Improving health equity: Access to living donor kidney transplantation
Category: Transplantation

ALLIED HEALTH KIDNEY DOCTORAL FELLOWSHIP

PENNY JARRIN
Supervisor: Christopher McIntyre
University of Western Ontario, ON
2020-2022: $58,000
Project Title: Improving hemodialysis tolerability through innovation
Category: Dialysis

ALLIED HEALTH KIDNEY SCHOLARSHIP

KELLY PICARD
Supervisor: Caroline Richard
University of Alberta, AB
2020: $5,000
Project Title: Nutrition in CKD patients
Category: Nutrition

CDTRP PARTNERSHIP INNOVATION GRANTS

DR. LAKSHMAN GUNARATNAM
University of Western Ontario, ON
2020-2022: $30,000
Project Title: New therapy to improve renal transplant outcomes
Category: Transplantation

DR. DARREN YUEN
St. Michael's Hospital, ON
2020-2022: $30,000
Project Title: Nanobubbles: a new way to non-invasively measure donor kidney ischemia-reperfusion injury
Category: Transplantation

RESEARCH BY THE NUMBERS

$3,273,000 IN RESEARCH GRANTS AWARDED IN 2020*
103 GRANTS FUNDED
414 RESEARCHERS SUPPORTED

IN 2020, THE KIDNEY FOUNDATION PROVIDED FUNDING TO:

62	BIOMEDICAL RESEARCH GRANTS	123	COLLABORATORS
26	KRESCENT AWARDS	24	SUPERVISORS
10	ALLIED HEALTH KIDNEY AWARDS	31	RESEARCH INSTITUTES
107	PRINCIPAL APPLICANTS	8	PROVINCES
160	CO-APPLICANTS	5	PARTNERSHIPS IN LARGE NETWORKS

RESEARCH THEMES FUNDED IN 2020:

- ACUTE KIDNEY INJURY
- CANCER
- CHRONIC KIDNEY DISEASE
- DIABETES
- DIALYSIS
- GENETICS
- GLOMERULONEPHRITIS
- HYPERTENSION
- KIDNEY BIOLOGY
- KIDNEY DEVELOPMENT
- NUTRITION
- ORGAN DONATION
- PREDICTIVE BIOMARKERS
- QUALITY OF LIFE
- RENAL FAILURE
- SCREENING & PREVENTION OF RENAL DISEASE
- TRANSPLANTATION
- UROLOGY
- WATER, SALT AND CALCIUM HANDLING BY THE KIDNEY

** Includes multi-year funding and projects funded via partnerships*

KRESCENT IS A NATURAL PARTNERSHIP OF THE KIDNEY FOUNDATION, THE CANADIAN SOCIETY OF NEPHROLOGY AND THE CANADIAN INSTITUTES OF HEALTH RESEARCH INSTITUTE OF NUTRITION, METABOLISM AND DIABETES.

KRESCENT POST-DOCTORAL FELLOWSHIPS

DR. MALLORY DOWNIE
Supervisors: Robert Kleta; Rulan Parekh
University College London, UK
2020-2022: $65,000
Project Title: Using genetics for precision medicine in nephrotic syndrome
Category: Genetics

DR. HARMANDEEP KAUR
Supervisor: Andrew Advani
St. Michael's Hospital, ON
2020-2023: $82,500
Project Title: Reshaping epigenetics to improve outcomes after acute kidney injury
Category: Acute kidney injury

DR. ENO HYSI
Supervisor: Darren Yuen
St. Michael's Hospital, ON
2020-2023: $27,500
Project Title: Quantification of pre-transplantation kidney scarring using photoacoustics
Category: Transplantation

DR. ANN YOUNG
Supervisor: Ron Wald
St. Michael's Hospital, ON
2020-2023: $10,000
Project Title: e-Visits for the management of chronic kidney disease
Category: Chronic kidney disease

KRESCENT NEW INVESTIGATOR AWARDS

DR. JUSTIN CHUN
University of Calgary, AB
2020-2023: $25,000
Project Title: Precision medicine in glomerular disease: role for lipid droplets
Category: Glomerulonephritis

DR. THOMAS KITZLER
McGill University, QC
2020-2023: $25,000
Project Title: A comprehensive approach to study genetic causes of chronic kidney disease
Category: Genetics