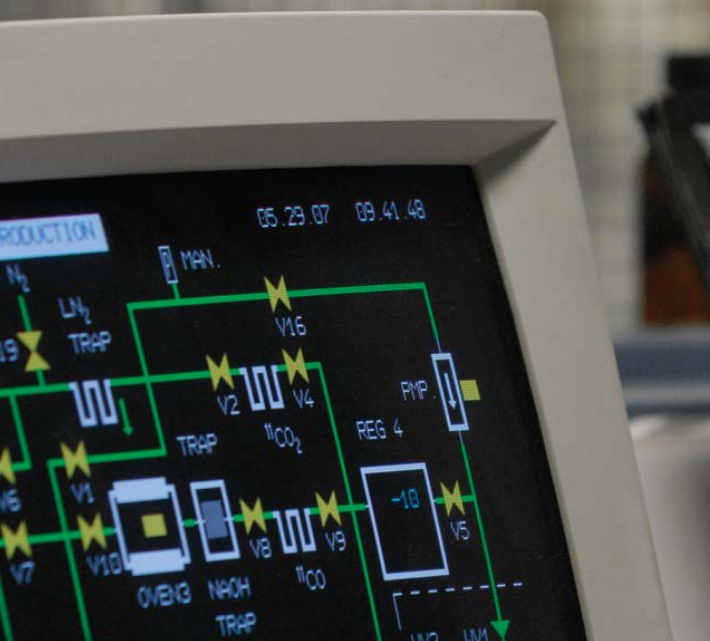


Centre for Addiction and Mental Health Research Report 2006–2007

*discovering
sharing
applying
new knowledge*



CAMH Mission

Improving the lives of those affected by addiction and mental health problems, and promoting the health of people in Ontario and beyond.

CAMH Vision

Strong and healthy communities, in which people with addiction and mental health problems can access appropriate and effective services and live as full participants.



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Message from the President and CEO, and the

Paul E. Garfinkel, MD, FRCPC

President and CEO



Shitij Kapur, MD, PhD, FRCPC

Chief of Research

Chief of Research

Science has stages. It begins with a question, moves through many hours or even years of work, and finally produces new knowledge—a discovery. But at CAMH, the stages of science don't stop there. We take our discoveries and share them with our colleagues and staff; with community groups, clients and families; and with the media. Our discoveries are also taken out of our laboratories and applied to client care, industry partnerships, prevention strategies and public policy reform.

In our research at CAMH, we are committed to discovering, sharing and applying new knowledge. Through these stages, we can maximize the reach and impact of CAMH science. This year's report focuses on the stages of our science in 2006–2007. From our record funding of \$39 million to inspiring stories of change and discovery, we present just a few examples of how research is helping to solve the complex puzzle of mental illness and addiction.

As we look toward the bold new vision of the redeveloped CAMH, the transformed face of addiction and mental health treatment will link our discoveries even more closely to real-world care. Our revolutionary integrated “urban village” will physically connect scientists not only to clients but also to other CAMH colleagues, creating more opportunities to work together on innovative projects that produce timely, relevant research.

None of this would be possible without the hard work of our scientists, research staff, students, postdoctoral fellows and volunteers. Thanks to them for their continued commitment. With their unwavering dedication and the support of our colleagues at CAMH, at the CAMH Foundation, in our community and around the world, we can persist in our pursuit of excellence as we move through the stages of science—and discover, share and apply new knowledge to change the face of mental illness and addiction.

Paul E. Garfinkel, MD, FRCPC
President and CEO

Shitij Kapur, MD, PhD, FRCPC
Chief of Research

Sources of Funding 2006–2007

American Foundation for Suicide Prevention
AstraZeneca Canada Inc.
Auto21 Networks of Centres of Excellence
Canadian Cancer Etiology Research Network
Canadian Council on Learning
Canadian Diabetes Association
Canadian Food Inspection Agency
Canadian Health Services Research Foundation
Canadian Institutes of Health Research
Canadian Lung Association
Canadian Mental Health Association
Canadian Psychiatric Research Foundation
Canadian Tobacco Control Research Initiative
Community-University Research Alliances
Douglas Hospital Research Centre
GlaxoSmithKline Research and Development Limited
Health Canada
Heart and Stroke Foundation of Canada
Institute of Environmental Science and Research
Indian Health Service
Joint Centre of Excellence for Research on Immigration and Settlement
Lesbian Health Fund
London Intercommunity Health Centre
Lundbeck Canada Inc.
Merck Frosst Canada Ltd.
National Alliance for Research on Schizophrenia and Depression
National Cancer Institute of Canada
National Center for Environmental Health and Centers for Disease Control and Prevention
National Institute of Mental Health
National Institute on Alcohol Abuse and Alcoholism
National Institutes of Health
Natural Sciences and Engineering Research Council of Canada
North Simcoe Muskoka Local Health Integration Network

Novartis Pharmaceuticals Canada Inc.
NPS Allelix Corporation
Obsessive Compulsive Foundation
Ontario Council of Graduate Studies
Ontario Genomics Institute
Ontario HIV Treatment Network
Ontario Mental Health Foundation
Ontario Ministry of Children and Youth Services
Ontario Ministry of Community and Social Services
Ontario Ministry of Health and Long-Term Care
Ontario Ministry of Health Promotion
Ontario Ministry of Research and Innovation
Ontario Problem Gambling Research Centre
Ontario Public Health Association
Ontario Tobacco Research Unit
Parkinson Society of Canada
Pfizer Canada Inc.
Public Health Agency of Canada
Sanofi-Synthelabo Canada Inc.
SickKids Foundation
Social Sciences and Humanities Research Council of Canada
Southeast Regional Health Authority
Stanley Medical Research Institute
The Provincial Centre of Excellence for Child and Youth Mental Health at CHEO
The Scottish Rite Charitable Foundation of Canada
Union of British Columbia Municipalities
University of Toronto

Special thanks to the CAMH Foundation donors for their ongoing support for research at CAMH. The mission of the CAMH Foundation is to raise funds to support the work of CAMH, which includes not only research, but also clinical care, education, health promotion and public policy.

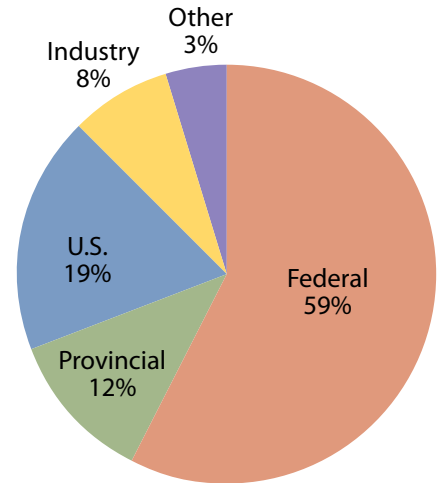
To make a donation, call 416 535-8501 ext. 4093, or donate online at www.supportcamh.net.

Breakdown of Funding by Source

2006–2007

\$

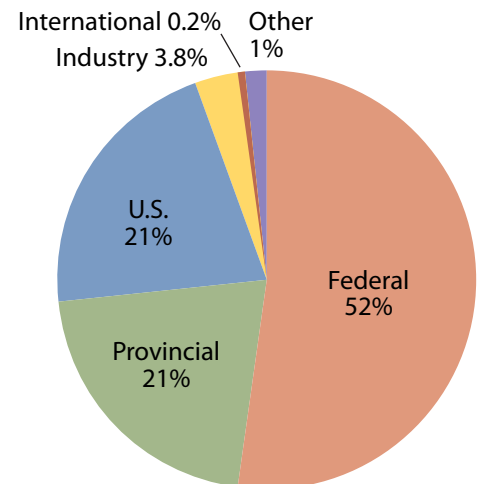
Federal	22,957,633
Provincial	4,647,147
U.S.	7,280,838
Industry	3,079,084
International	—
Other*	1,181,279
Total	39,146,000



2005–2006

\$

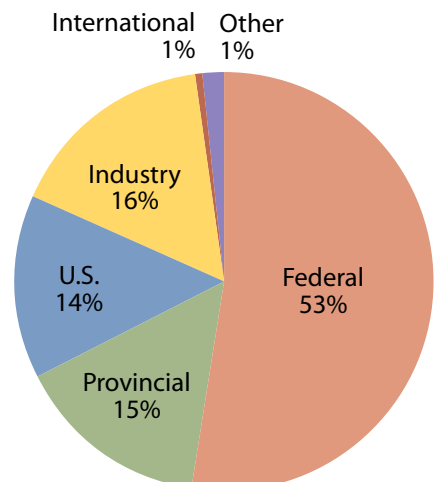
Federal	19,813,269
Provincial	8,043,810
U.S.	7,994,415
Industry	1,444,628
International	55,502
Other*	527,832
Total	37,879,456



2004–2005

\$

Federal	18,161,500
Provincial	5,218,126
U.S.	4,843,972
Industry	5,569,674
International	245,380
Other*	500,722
Total	34,539,374



* “Other” includes all grants from Canadian universities and private (non-profit) foundations.

About Research at CAMH

CAMH is the largest mental health and addiction research facility in Canada. We have nearly 100 full-time scientists and 300 staff working together to better understand addiction and mental illness. Our scientists are leaders in developing world-class research and translating these pioneering discoveries into improved diagnosis, prevention, intervention, treatment and public policy.

Our Research Program brings together:

- four areas of scientific focus: Clinical Research; Neuroscience Research; the PET Centre; and Social, Prevention and Health Policy Research
- internationally recognized scientists, including six Canada Research Chairs and nine endowed university chairs and professorships
- state-of-the-art resources, including sophisticated laboratory and animal facilities, and a positron emission tomography (PET) facility with two sophisticated scanners and a cyclotron (a type of particle accelerator)
- a comprehensive library with collections in mental health, gambling and substance use, including 40,000 monographs, 280 current print journals, 1,600 electronic journals and books, and 2,000 videos
- specialized research operations staff who manage day-to-day activities.

This year's report highlights some of our milestones for 2006–2007, as we continue on our path to discover, share and apply new knowledge about addiction and mental illness.



CAMH's research focuses on understanding mental illness and addiction, improving existing treatment and developing new treatment approaches, and providing guidance on prevention, intervention and public policy initiatives.

Our extensive resources are interlaced across four areas of scientific focus:

- Clinical Research
- Neuroscience Research
- PET Centre
- Social, Prevention and Health Policy Research.

In addition, staff in the Research Operations office and CAMH Library collaborate with scientific staff to make sure all research activities run smoothly.

Clinical Research

The Clinical Research Department is involved in research, treatment and education. The department contributes to these areas through scientific publications, presentations, and the sharing of knowledge with clinicians and the community at large. Clinical Research is divided into eight sections:

- Addictions
- Centralized Assessment, Triage and Support Program (CATS)
- Child, Youth and Family
- Dual Diagnosis
- Geriatric Mental Health
- Law and Mental Health
- Mood and Anxiety Disorders
- Schizophrenia.

Neuroscience Research

The Neuroscience Research Department focuses on the mechanisms in the brain that underlie addiction and mental illness, and the mechanisms that are involved in their respective treatments. The department studies all levels of the brain—from molecules to brain cells to the whole brain—in three areas of research: molecular medicine, psychiatric genetics, and clinical and behavioural neuroscience.

Neuroscience research is divided into the following sections:

- Biopsychology
- Clinical Neuroscience
- Human Neurochemical Pathology Laboratory
- Laboratory of Cellular and Molecular Pathophysiology
- Molecular Neuroscience
- Molecular Pharmacology
- Neurobiology of Alcohol
- Neuroimaging
- Pharmacogenetics
- Psychiatric Neurogenetics
- Translational Addiction Research Laboratory.

About Research at CAMH

The PET Centre

The PET Centre is dedicated to brain research using positron emission tomography (PET), a three-dimensional scan that maps how the mind works by measuring the functioning of areas of the brain. Its main focus is on studying chemical brain messengers, to better understand the neurochemical root of mental illness and addiction. The ultimate goal is to improve the lives of clients and their families by increasing the effectiveness of existing treatments and reducing the side-effects of medication. To achieve this goal, CAMH scientists use PET methods to find signs of disease, and encourage innovative approaches to drug development by using PET in the early stages of evaluating new drugs.





Social, Prevention and Health Policy Research

The Social, Prevention and Health Policy Research Department addresses health policy and social policy concerns related to addiction and mental health—not only in Ontario but also across Canada and globally. Research areas range from surveys of the general population and subpopulations to studies of specific communities, policy interventions and the delivery of health care services. The results of the various studies provide stakeholders such as researchers, policy-makers and program developers with the information they need to improve the lives of people facing addiction and mental health challenges.

This department is made up of four integrated sections:

- Health Systems Research and Consulting Unit
- Public Health and Regulatory Policy
- Social and Community Prevention Research
- Social, Equity and Health.

Each collaborates with the other sections, with many other CAMH programs and departments, and with numerous community and international partners. This department also houses the Ontario Tobacco Research Unit.

Research Operations

Research Operations guides the strategic and administrative direction of CAMH research. Operations and scientific staff collaborate to ensure that research activities run smoothly, enabling us to discover, share and apply new knowledge.

The Research Operations office offers specialized support in:

- Animal Facilities Management
- Clinical and Regulatory Affairs
- Communications
- Contracts and Licensing
- Grants and Awards
- Information Technology
- Intellectual Property Management
- Operations Management.

CAMH Library

The CAMH Library houses Canada's largest collection of mental health and addiction materials. These specialized background and reference materials support and enhance our multidisciplinary research. As an important contributor to CAMH's provincial role, the library also provides services to professional communities and the Ontario public for educational purposes and informed decision making in addiction- and mental health-related issues. The library is an active player in co-operative programs, and takes a leadership role in local, national and international resource- and information-sharing initiatives.

Discovering, Sharing and Applying New Knowledge

All the parts of CAMH Research work together. Each plays a vital role in the stages of science, as we build an integrated culture of scientific collaboration. Here are just a few highlights of our work from 2006–2007.



discovering

New dopamine brain target may offer hope for schizophrenia treatment

Drs. Susan George and Brian O'Dowd led a team of researchers to a discovery that could improve the understanding and treatment of schizophrenia.

*Dr. Brian O'Dowd
and Dr. Susan George*



The team discovered a Gq/11-coupled signalling unit that triggers a rise in calcium in the brain when the two dopamine receptors it contains (called D1 and D2) are stimulated at the same time. This newly discovered target for the brain chemical dopamine is unusual in that it will create brain signals only when both D1 and D2 receptors are stimulated simultaneously—either with dopamine or with certain drugs.

Calcium release has a major effect on many important brain functions, so this rise in calcium causes a cascade of events in the brain. This is the first time that a direct connection between dopamine and calcium signals has been reported.

This discovery has significant implications for schizophrenia. Research tells us that people with schizophrenia may have disordered calcium signals, and the major treatments for the disease target the dopamine system. This new data links these two pieces of evidence, creating better understanding of schizophrenia and opening the door for a new generation of highly specific medications that may help alleviate its devastating symptoms. In addition, the research team is working to explain how this signalling unit may help us understand how the brain perceives the rewarding effects of drugs.

MAO-A model offers a road map for depression

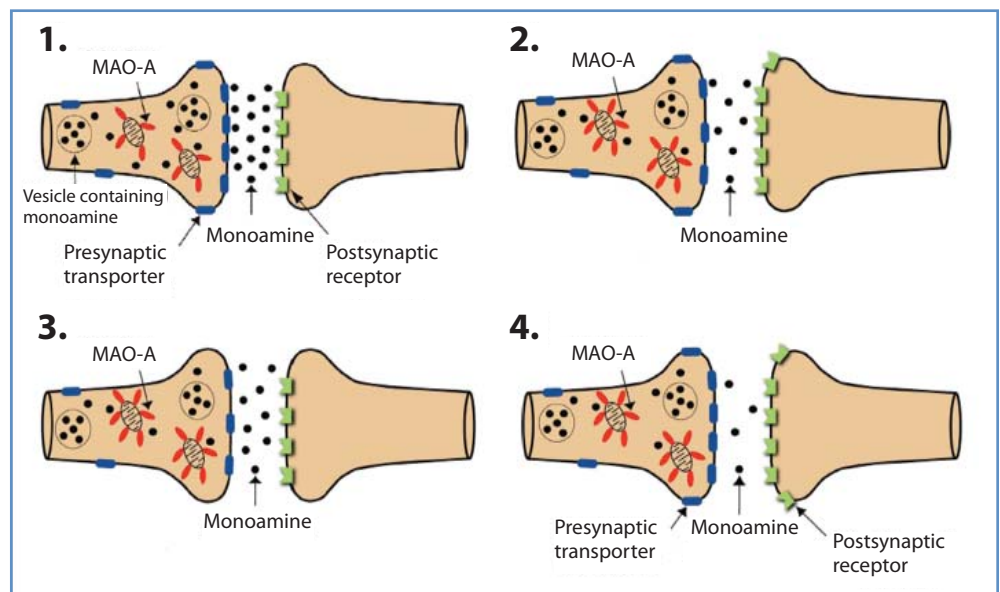
For more than 30 years, many scientists have believed that during depression, levels of monoamines—mood-related brain chemicals such as serotonin—are low. This is commonly referred to as a “chemical imbalance.” This year, CAMH provided the first thorough explanation of how this imbalance occurs.

A team led by **Dr. Jeffrey Meyer** showed that MAO-A—an enzyme that breaks down neurochemicals like serotonin, norepinephrine and dopamine—was significantly higher in people with untreated depression. This was true for every brain region that the scientists investigated. In depression, a higher level of MAO-A is the main process through which monoamines such as serotonin break down.

The study includes a detailed new monoamine model of depression, based upon this work and four previous publications. This model of depression serves as a map of how the illness works and will help in the development of more targeted and effective treatment. It helps explain why different people with depression lose chemicals such as serotonin and dopamine at different rates, and why one person’s symptoms may vary from another person’s.

The next step for researchers is to investigate why MAO-A levels are raised in depression, and to consider prevention strategies.

MAO-A levels are higher during a depressive episode (2.) versus health (1.), which leads to lower levels of key brain chemicals like serotonin. During a depressive episode, people also lose chemicals at different rates based on transporter density (3. moderate density and monoamine loss; 4. high density and monoamine loss). The combination of elevated MAO-A and transporter density leads to the chemical (monoamine) imbalance in depression.



Prescription drug misuse identified as a significant public health problem



Drs. Benedikt Fischer and Jürgen Rehm, and a team of CAMH scientists, produced the first large-scale documentation of prescription opioid usage patterns among people who use illegal drugs. They discovered that heroin use has decreased in most of the Canadian cities they examined. Instead, the use of prescription drugs such as Dilaudid, Tylenol 3 and 4, OxyContin and morphine has become the most common form of illegal opioid use.

The team analysed 2005 data for the illegal drug markets in seven Canadian cities: Edmonton, Fredericton, Montreal, Quebec City, St. John, Toronto and Vancouver. They discovered that in five of the cities, prescription opioid use had largely replaced heroin use. Only Montreal and Vancouver had major heroin use—and even in those cities, it had fallen significantly since 2001.

However, current drug control policy and treatment programs still focus primarily on heroin dependence. These findings provide the evidence needed to improve policy and treatment by more effectively targeting illegal use of prescription opioids—without compromising their legal use (for example, for pain management in terminal illness).

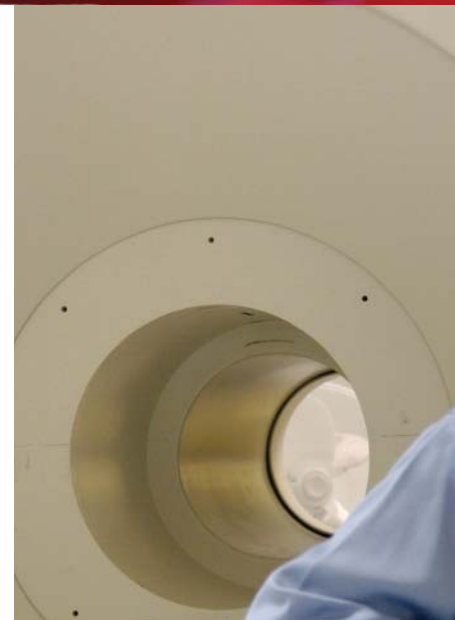
Light therapy holds promise for treating symptoms of adult ADHD

Many adults with attention-deficit/hyperactivity disorder (ADHD) experience disabling fatigue and poor concentration because of delayed sleep/activity rhythm. Some are also prone to symptoms of seasonal affective disorder (SAD), a type of depression occurring in the fall and winter. Thanks to work by **Drs. Robert Levitan** and **James Kennedy**, we also know that there is a genetic relationship between ADHD, SAD and weight gain.

Based on these earlier genetic findings and clinical observations, Dr. Levitan, Dr. Yuri Rybak, University of Western Ontario, and colleagues studied the use of light therapy as a supplementary treatment for adults with ADHD. The team's data showed that light therapy holds promise for reducing depression in these people, raising their energy levels and improving their functioning. It also showed that more than half of the people studied experienced fewer symptoms of depression after 30 minutes of light therapy, and more than a quarter had a full or partial improvement in attention deficit symptoms.

ADHD symptoms were most likely to improve when study participants experienced a change in circadian rhythms (the body's daily rhythms of sleep and activity). Many adults with ADHD have a delay in their circadian rhythms that causes them to go to sleep late and have difficulty getting going in the morning. This puts them out of sync with conventional schedules and makes it hard for them to hold a job and socialize. Dr. Levitan and his team suggest that light therapy may correct a core deficit in the basic arousal mechanism in adults with ADHD, as well as changing their circadian rhythms. This enables them to begin to return to more conventional schedules and improve their quality of life.

Dr. Robert Levitan



sharing

\$2.2 million grant will enhance PET Centre

The Canada Foundation for Innovation (CFI) competition was fierce: 487 proposals from 87 institutions, requesting a total of \$1.4 billion in funding. Only 86 projects from 35 institutions across the country were successful—and we were one of them.

Dr. Sylvain Houle is the Co-principal Investigator for a joint project with the University Health Network, funded by a \$2.2-million CFI grant. The grant will allow us to expand and improve the University of Toronto Functional Imaging Research Network (FIRN)—a body of state-of-the-art imaging equipment located across the network's various member institutions. CAMH's PET Centre is the core facility for research carried out by FIRN scientists.

With this grant, we will purchase a new cyclotron (a particle accelerator that produces the radioactively tagged material used in PET imaging). This is a key piece of PET research equipment. Our current cyclotron is aging, and is no longer able to meet the increasing technical demands of researchers. The new cyclotron will enable us to continue to expand our knowledge of various diseases and to produce significant research and health benefits.

CAMH's researchers have used PET technology for 14 years with tremendous results, including improving our understanding of the role of the brain chemicals dopamine and serotonin in psychiatric and substance use disorders. PET has allowed us to develop new therapies as well as improve existing treatments. The new technology will support our PET research teams in the Mood and Anxiety and Schizophrenia sections, and support growth in geriatric PET research. It will also enable us to keep attracting new scientists, to secure funding and to continue to build partnerships with other research institutions.

Dr. Sylvain Houle



Evaluating a national substance abuse program in Chile

Chile now has a national youth substance abuse program—and CAMH's **Dr. Brian Rush** and Deputy Clinical Director **Gloria Chaim** were key players in making this happen.

In 2001, 35 Chilean communities were chosen to pilot a national substance abuse program. Developed by CONACE—Chile's national drug council—and the Chilean health ministry, the program was designed to modernize the national drug strategy by increasing access to, and funding for, substance use treatment for children and adolescents.

Dr. Rush and Ms. Chaim, in collaboration with CAMH's Office of International Health, supported a team of Chilean senior administrators, planners,

researchers, psychiatrists and program managers in evaluating the pilot program. Dr. Rush, an expert in understanding and evaluating health systems, worked in close partnership with the Chilean team to develop a comprehensive evaluation plan. It identified the extent to which the program's goals were realized, and determined what changes were needed before introducing the program across the country. The CAMH team also shared its knowledge, experiences and expertise to increase the Chilean team's program evaluation skills.

The evaluation showed that the program's treatment model was consistent with international best practices for youth substance use treatment, and the model was approved for national implementation.

*Akwatu Khenti,
Director of CAMH's
Office of International
Health (seated) with
Dr. Brian Rush and
Gloria Chaim*



Building capacity in Nigeria

Nigeria is a country of contrasts. It is the most populous country in Africa and some Nigerians have great wealth—yet health, health care and general living conditions are poor. Enugu State, for example, has wide-ranging unmet mental health and addiction needs, but people's focus is on accessing basic life needs and primary health care.

To address these needs, Enugu State University of Science and Technology (ESUT) approached CAMH's Office of International Health about a partnership to teach a mental illness and addiction curriculum to ESUT medical students and residents. As a health care provider, ESUT was interested in learning from CAMH's commitment to building capacity in countries with few addiction and mental health resources. And CAMH welcomed the opportunity to help ESUT staff and students improve care by sharing knowledge and resources, and to learn more about working in another country.

In January 2007, **Dr. Bruna Brands** and **Debbie Thompson**, Manager of Research Operations, visited Enugu. They conducted a needs assessment with ESUT staff and administrators, gave an information session on alcohol and other drugs, and discussed funding opportunities with representatives of the Canadian International Development Agency.

The CAMH team gathered invaluable information on the gaps in mental illness and addiction knowledge and competency, providing a base of information for a potential partnership. The ESUT team found the experience valuable, and appreciated the expertise and materials CAMH shared. Participants commented that they would use the information for many purposes, including increasing awareness among youth. Overall, 80 per cent of participants said they gained knowledge that was useful and relevant to their work. Despite the challenges the team identified, both CAMH and ESUT are interested in exploring available resources to develop a sustainable capacity-building partnership.



Dr. Bruna Brands (left centre) and Debbie Thompson (right centre) with members of the ESUT team in Nigeria, including Dr. O. Ejim and Professor I.J. Chidobem

applying

New technology helps identify disease origins

The business of technology transfer enables discoveries to move from laboratories into real-world applications that benefit the public. CAMH's intellectual property office accelerates this impact of scientists' inventions through commercialization, as well as helping them protect their intellectual property through patents.

As just one example, CAMH signed an exclusive licence agreement for a large-scale epigenetic profiling system with Epigenomics AG. This technology, developed by CAMH scientists under the direction of **Dr. Arturas Petronis**, can help identify what causes complex diseases, and may lead to new diagnostic and therapeutic approaches.

Epigenetics is an emerging field that looks at methods of biological inheritance that do not relate directly to the inheritance of collections

of genes. Until recently, experimental epigenetic approaches were limited, which held back testing of the epigenetic theory of complex disease. This new profiling technology is a tool that will advance this field of research by allowing scientists to scan millions of nucleotides (the building blocks of DNA) for DNA methylation (the addition of groups of atoms to nucleotides), and make thousands of comparisons to identify defects in epigenetic regulation.

Epigenomics AG, headquartered in Berlin, Germany, will use this technology primarily in cancer diagnosis. But other applications are possible, such as identifying molecular changes in schizophrenia and other complex diseases. CAMH scientists are already using the profiling system to research epigenetic indicators in individuals with psychiatric disorders.

This conceptual diagram illustrates how scientists can use profiling technologies to determine properties of DNA. The illustration shows human chromosomes composed of microarray data spots, as large-scale microarray analysis can reveal gene expression patterns, methylation status and other DNA interactions.

Dr. Arturas Petronis



Schumacher et. al. (2006). Microarray-based DNA methylation profiling: technology and applications. *Nucleic Acids Research*, 34 (528–542). By permission of Oxford University Press.

Harm reduction guidelines promise social action and policy change

What:

- is used by numerous Ontario harm reduction programs to defend and expand their efforts
- is the evidence base for a \$1-million investment in harm reduction supplies in Ontario
- is used by other provinces to support their programs, and is being revised for use in California
- won its authors the Kaiser Foundation's National Award for Excellence in Leadership?

Answer:

CAMH's Best Practices for Needle Exchange Programs in Ontario.

Dr. Carol Strike, Research Co-ordinator **Susan Anstice** and a team of researchers and needle exchange managers produced this groundbreaking document, which holds the promise of social action and policy change on harm reduction. They analyzed more than 700 scientific documents, online guides and materials, and contributions from service providers, to develop a set of concise practice recommendations.

Often the work of needle exchange programs is reduced to the distribution and disposal of needles, but they have the potential to provide a more comprehensive service. The CAMH team's best practice recommendations can be used not only to develop and evaluate programs, but also to advocate for comprehensive service funding for people who use injection drugs.



*Susan Anstice (left)
and Dr. Carol Strike*

Recognition *It's our people who allow us to reach our goals*



2006 CORE Awards a Success

CAMH science is not only about laboratories, genes, population samples and clinical trials; it's also about people. Behind the microscope are dedicated research support staff and students who are integral contributors to the excellence of our research program.

To recognize these contributions, we launched the CORE (CAMH Outstanding Research Employee) Awards in 2005. The awards honour research excellence in five areas:

- research practices and conduct
- continual learning
- innovation and solutions
- teamwork and collaborative efforts
- quality assurance and accountability.

In just two years, the CORE Awards have become a signature event that is setting the standard for recognition in the Research Program.

As well as highlighting exceptional contributions to CAMH research, the CORE Awards also help us achieve CAMH's goal of being the best place to work and learn. Recognizing staff makes people more connected to their workplace, more motivated to do a good job and more interested in embracing CAMH's mission, vision and values. All of this fosters a healthy workplace and creates a positive environment for staff and clients.

In 2006, the CORE Awards Committee was delighted to receive 32 CORE nominations for research employees and students. The newly established student award recognized a graduate student who made an outstanding contribution within his or her research study area. Across all research departments, the staff and student nominations were filled with overwhelming praise and countless examples of the talents, innovation and integrity of the nominees.

Congratulations to the 2006 recipients:

Clinical Research Staff

Dielle Miranda Melanie Ollenberg

Neuroscience Research Staff

Theresa Fan Ewa Hoffmann

PET Centre Staff

Terry Bell Mike Clark

Social, Prevention and Health Policy Research Staff

Angela Boak Kimberly Lewis-Ng

Student

Zach Kaminsky

Congratulations also to all this year's nominees:

Staff

Sharon Bernards	Alain MacDonald
Renee Desmond	Heidi Marcon
Rosa Dragonetti	Liesel-Anne Meusel
Nas Farzan	Rebecca Pedersen
Sonja Johnston	Svetlana Popova
Shauna Kushner	Anna Sarnocinska-
Anca Ialomiteanu	Hart
Kathryn Knight	Ashlie Soko
Sheila LaCroix	Irina Vitcu
Gloria Leo	Rosely Flam Zalcman

Students

Alexander Elkader
Jelena King
Martin Sellbom
Lisa Vettese

Highlighting Excellence

CAMH's researchers are continually recognized for their contributions to mental health and addiction research. From formal awards to speaking engagements, award nominations to committee participation, they are acknowledged for the specialized expertise they bring to CAMH and the community. Here are just a few examples of our accolades from the past year.

John Cairney was nominated for Canada's Top 40 under 40 award, a national program that celebrates today's and tomorrow's leaders in all fields.

John Cunningham was an invited presenter at the 13th Annual World Conference on Tobacco OR Health, in Washington, D.C., which featured the latest research on tobacco and its effects. Dr. Cunningham presented his research into the potential benefits of integrating online services for smoking cessation and problem drinking.

Dr. Cunningham was also awarded a grant from the CIHR Institute of Neuroscience, Mental Health and Addiction, and the Academy of Finland. He will work with partners in Finland and Russia to study beliefs about addiction held by members of the general public and by health professionals.

Carolyn Dewa received a Research Mentor Award from the International Center for Mental Health Policy and Economics and the World Psychiatric Association. In addition, Dr. Dewa gave her presentation "Disability, Depression, Drugs and Dilbert: How Do They Work?" to a number of audiences. This talk looked at the rationale for examining mental illness in the working population.

David DeWit is Co-principal Investigator on a study that received funding of \$1.7 million from the Canadian Institutes for Health Research (CIHR). His work is the first in-depth study of the possible health and behavioural benefits for Canadian children who are involved in match relationships organized by Big Brothers Big Sisters. The multi-year longitudinal investigation will involve 950 families (parents and children) and the children's adult mentors from 15 Big Brothers Big Sisters agencies across Canada.

Pat Erickson and **Peter Selby** provided affidavits and testified for Legal Aid Ontario in a provincial case regarding the Ontario Disability Support Program. Their work supported the lawyers' arguments that denying disability benefits related to substance dependence increases stigma, imposes hardships on an already vulnerable population, and contravenes fundamental human rights.

Dr. Erickson's affidavit served as the basis for a peer-reviewed article in the *Canadian Journal of Community Mental Health* that reviewed the evidence about the harmful impact of the removal of addiction disability provisions in the U.S.A., and was supplemented by findings from recent treatment studies reviewed by her colleague **Russell Callaghan**.

Norman Giesbrecht presented on drinking trends, high-risk drinking and changes in public opinion on alcohol policy, at the 62nd Alcohol Problems Research Symposium in the United Kingdom; and on reducing alcohol-related risks and harm through community-based prevention and policies, at the 2006 Australasian Professional Society on Alcohol and Other Drugs Conference.

Highlighting Excellence

Louis Gliksman participated in the Health Canada Steering Committee for Avoidable Cost of Alcohol. Dr. Gliksman was also part of the planning committee for the National Alcohol Strategy.

Shitij Kapur was named a Distinguished Fellow of the American Psychiatric Association in recognition of his significant contributions to psychiatry.

Paul Kurdyak received a CIHR Fellowship Award to support completion of his PhD thesis work examining the impact of depression on the outcomes of patients with cardiovascular disease.

Fang Lui received a 2006 Independent Investigator award from the National Alliance for Research on Schizophrenia and Depression (NARSAD). This award provides support during the critical period between the initiation of research and the receipt of sustained funding.

Yona Lunskey received funding from the CIHR to lead a project investigating the management of psychiatric crisis in people with intellectual disabilities.

Robert Mann was a project leader for AUTO21, a national research initiative supported by the Government of Canada through the Networks of Centres of Excellence Directorate and more than 110 industry, government and institutional partners. Dr. Mann was also co-ordinator for AUTO21's Societal Issues and the Automobile research theme, which focused on the automobile's effects on modern society.

Carles Muntaner was appointed Co-chair of the Employment Conditions Network of the World Health Organization (WHO) Commission on Social Determinants of Health. This network will help to develop models and measures to clarify how workers' health is affected by different types of jobs, conditions of underemployment and the threat of becoming unemployed.

Arturas Petronis received a Senior Research Fellowship from the Ontario Mental Health Foundation. This award enables Dr. Petronis to continue his epigenetic studies of major psychiatric disease.

Jürgen Rehm was appointed to the WHO Expert Advisory Panel on Drug Dependence and Alcohol Problems.

Laura Simich was an invited participant in the Ontario Health Quality Council's research consultation on ethnocultural barriers to accessing health care.

Also, Dr. Simich authored a knowledge translation case study that discusses her research into and support for Toronto's Tamil community after the tsunami of 2004. This case study was part of CIHR's two knowledge translation casebooks, designed to help researchers, policy-makers and community members learn from the experiences of others.

Gwenn Smith was invited to the 2006 Annual Meeting of the American Association of Geriatric Psychiatry in Puerto Rico, where she gave a presentation entitled "Integrating Clinical, Neuroimaging and Post-Mortem Approaches in Late Life Depression."

Nigel Turner was a member of the Responsible Gambling Council of Ontario's expert panel on slot machine technology.

Rachel Tyndale was awarded a grant from the CIHR Institute of Neuroscience, Mental Health and Addiction, and the Academy of Finland. Working with Finland's University of Kuopio and the University of Toronto, Dr. Tyndale's project aims to develop new drugs for use in treating nicotine dependence.

Karen Urbanoski received the Best Student Poster Award from the Canadian Academy of Psychiatric Epidemiology, for her work on the perceived unmet need for care among Canadians with concurrent disorders. Previous analysis found that fully half of Canadians with concurrent disorders reported an unmet need for care, compared to 20 per cent of those with either a mental health or a substance use disorder alone. Ms Urbanoski's poster examined these associations in more detail, including the reasons people gave for not obtaining care.

Neil Vasdev received a three-year grant from the Natural Sciences and Engineering Research Council and the CIHR, as part of their joint 2006 Collaborative Health Research Programs initiative. Dr. Vasdev's project was one of only 18 funded projects, chosen from more than 230 letters of intent and 54 invited applications.

Also, Dr. Vasdev received the Radiant Program Young Investigator Award from the Canadian Society of Nuclear Medicine and GE Healthcare.

Jessica Warner was listed in *Canadian Who's Who 2006*, the most comprehensive biographical source on leading and influential Canadians.

Samantha Wells was invited to present on gender and age differences in victimization experiences and the role of alcohol, at the 32nd Annual Alcohol Epidemiology Symposium of the Kettil Bruun Society (KBS), in the Netherlands. The KBS is an international organization of scientists engaged in research on the social aspects of alcohol use and alcohol problems.

Postdoctoral Fellowship Awards

A cornerstone of CAMH research is our commitment to research training. Many scientists dedicate hundreds of hours to educating and mentoring tomorrow's researchers.

CAMH's Postdoctoral Fellowship Awards are one way CAMH provides postdoctoral fellows with funding and comprehensive training in addiction and/or mental health, and in research techniques. The 2006–2007 award recipients were:

Christian Windpassinger

Supervisor: John Vincent

Research Project Title: Molecular and Cellular Studies of the New MECP2 Isoform MECP2E1

Svetlana Popova

Supervisor: Jürgen Rehm

Research Project Title: Feasibility of Quantifying Avoidable Harm and Costs Attributable to Illegal Drugs

Isabelle Boileau

Supervisor: Stephen Kish

Research Project Title: Pharmacological and Positron Emission Tomography Studies of Levodopa as a Possible Treatment for Methamphetamine Addiction.

Highlighting Excellence

Community Research Capacity Enhancement Program

The second annual Community Research Capacity Enhancement Program funded projects dedicated to issues that build relationships and capacity in diversity. Congratulations to:

Lori Ross and the Sherbourne Health Centre for their project “Understanding the Context of Bisexual Mental Health.” This work will fill an important knowledge gap by providing more information on the bisexual population, and will increase understanding of the specific context and experiences of bisexual mental health.

Wayne Skinner, Russell Callaghan and the Fred Victor Centre for their project “Downtown Services Partnership for Marginalized Populations.” Working with 14 agencies, this project aims to develop and evaluate a more formalized, integrated and collaborative approach to providing time-limited crisis and transitional support. This model will be applied to diverse groups made up of marginalized populations with concurrent disorders.



Measuring Our Success



In the Media

Between April 2006 and March 2007, CAMH Research received more than 500 media hits. This represents almost 50 per cent of the total media coverage CAMH received.

2006–2007 Highlights

- Ed Adlaf: 2005 OSDUS mental health and well-being report
- Susan George and Brian O'Dowd: Discovery of a distinct dopamine signalling complex in the brain
- William Gnam: *The Economic Costs of Mental Disorders, Alcohol, Tobacco, and Illicit Drug Abuse in Ontario, 2000*
- Jeffrey Meyer: Research outlining a new monoamine model of depression
- Nigel Turner: Problem gambling research
- Jürgen Rehm: *The Costs of Substance Abuse in Canada 2002*
- Peter Selby: STOP (Smoking Treatment for Ontario Patients) Study

In Publications

One way to understand our scientific strengths is to look at Essential Science Indicators (ESI), an online resource that enables us to conduct ongoing, quantitative analyses of research performance and trends.

Twenty-two CAMH researchers are ESI's most highly cited scientists. This means that they are in the top one per cent in their field of research.

Dr. Peter Selby answers questions during the STOP Study press conference in January 2007.

In Industry

CAMH's intellectual property office is committed to translating scientific discoveries into practical applications. This year CAMH inventions allowed us to:

- file patent applications for 11 technologies (five for new technologies developed at CAMH)
- execute two licence agreements
- identify a commercialization strategic partner for pharmacogenomics, a priority area for CAMH research.

Also, we signed two option agreements with Clinical Data Inc., a U.S.-based biotechnology company. These agreements are for biomarkers that identify people who are likely to respond to antipsychotic drugs, those who are likely not to respond, and those who are likely to experience serious side-effects from this medication.

Research Organizational Chart

Shitij Kapur,

Library Services
Sydney Jones, *Director*

Research Training
Leslie Atkinson, *Director*

Intellectual Property
Klara Vichnevetski, *IP Manager*

Neuroscience Research
James Kennedy, *Director*

Neurobiology of Alcohol
Anh Dzung Lê, *Head*

Biopsychology
Paul Fletcher, *Head*

Clinical Neuroscience
Usanda Busto, *Head*

Human Neurochemical Pathology Laboratory
Stephen Kish, *Head*

Laboratory of Cellular and Molecular Pathophysiology
Jerry Warsh, *Head*

Molecular Neuroscience
Fang Liu, *Head*

Molecular Pharmacology
Susan George and Brian O'Dowd, *Heads*

Neuroimaging
José Nobrega, *Head*

Pharmacogenetics
Rachel Tyndale, *Head*

Psychiatric Neurogenetics
James Kennedy, *Head*

Translational Addiction Research Laboratory
Bernard Le Foll, *Lab Head*

Clinical Research
Michael Bagby, *Director*

Addictions Program
Tony George, *Head*

Centralized Assessment, Triage and Support (CATS) Program
Paul Kurdyak, *Head*

Child, Youth and Family Program
Ken Zucker, *Head*

Dual Diagnosis Program
Yona Lunksy, *Head*

Geriatric Mental Health Program
Benoit Mulsant, *Head*

Law and Mental Health Program
Ray Blanchard, *Head*

Mood and Anxiety Program
Robert Levitan, *Head*

Schizophrenia Program
Bruce Christensen, *Head*

Chief of Research



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For information on addiction and
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Ontario toll-free: 1 800 463-6273
Toronto: 416 595-6111

Website: www.camh.net



Centre for Addiction and Mental Health
Centre de toxicomanie et de santé mentale

A Pan American Health Organization /
World Health Organization
Collaborating Centre

Affiliated with the University of Toronto