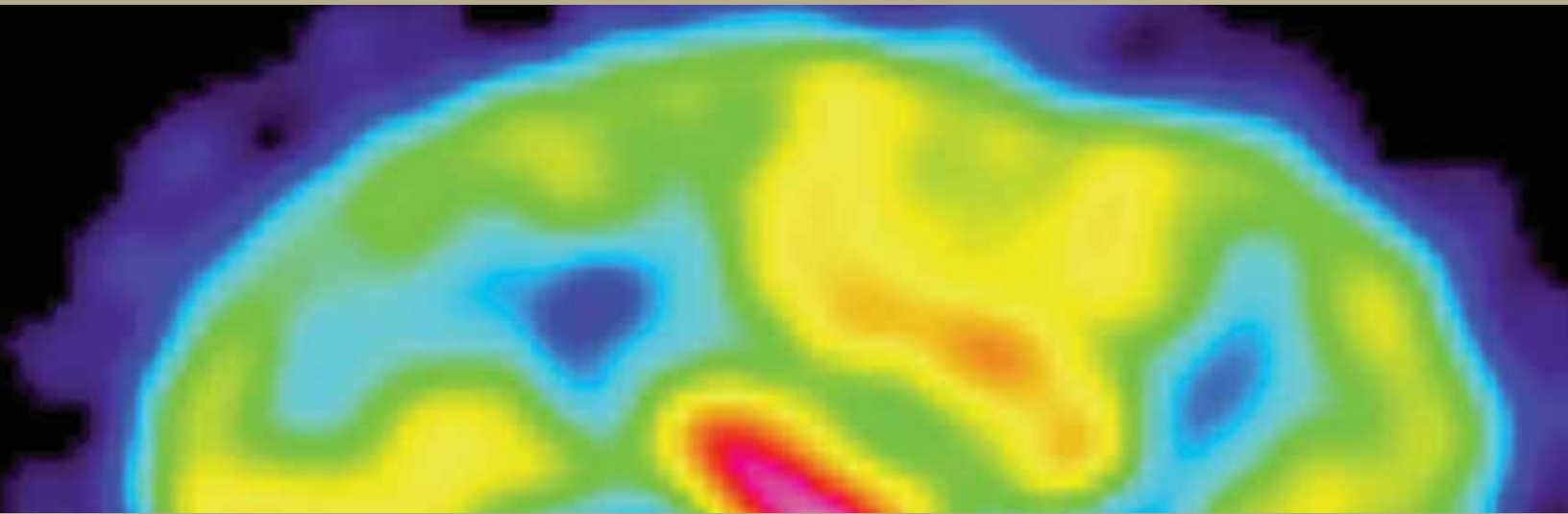


Centre for Addiction and Mental Health  
Research Report 2004–2005



## Sources of funding: 2004–2005

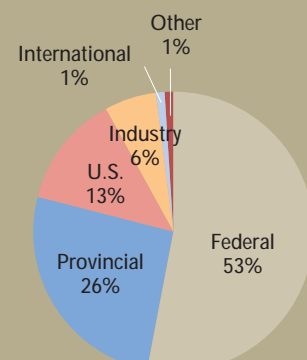
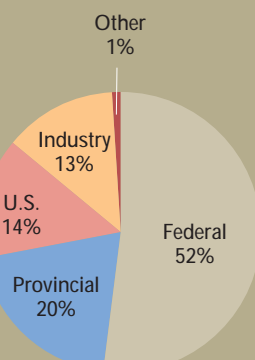
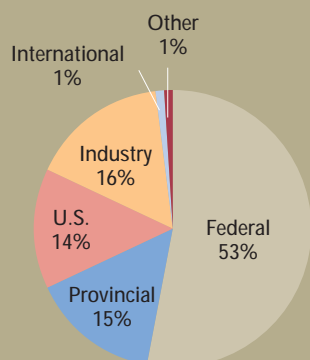
Abbott GmbH & Co.  
 Alberta Heritage Foundation for Medical Research  
 Alcoholic Beverage Medical Research Foundation  
 Alzheimer's Association  
 American Foundation for Suicide Prevention  
 Associated Medical Services Inc.  
 AstraZeneca Canada Inc.  
 Aventis Pharmaceuticals Inc.  
 The Bank of Sweden Tercentenary Foundation  
 Bill Jeffries Schizophrenia Endowment Fund  
 Boehringer Ingelheim GmbH Co.  
 Borderline Personality Disorder Research Foundation  
 Bristol-Myers Squibb Co.  
 Canada Foundation for Innovation  
 Canadian Centre on Substance Abuse  
 Canadian Collaborative Mental Health Initiative  
 Canadian Heritage and Multiculturalism  
 Canadian Institutes of Health Research  
 Canadian Mental Health Association  
 Canadian Population Health Initiative  
 Canadian Psychiatric Research Foundation  
 Canadian Tobacco Control Research Initiative  
 Change Foundation  
 Citizenship and Immigration Canada  
 Clera Inc.  
 Crohn's and Colitis Foundation of Canada  
 Cure Autism Now Foundation

Cyberonics Inc.  
 EJLB Foundation  
 Eli Lilly Canada Inc.  
 Friedrich's Ataxia Research Alliance  
 GlaxoSmithKline Inc.  
 Grey Bruce Huron Perth District Health Council  
 Hannah Institute for the History of Medicine  
 Health Canada  
 Heart and Stroke Foundation of Ontario  
 Hospital for Sick Children Foundation  
 The International Development Research Centre  
 Janssen-Ortho Inc.  
 McNeil Consumer Healthcare  
 Merck Frosst Canada Inc.  
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 Michael J. Fox Foundation  
 National Alliance for Research on Schizophrenia and Depression  
 National Cancer Institute of Canada  
 National Crime Prevention Centre  
 National Drug Council of the Cayman Islands  
 National Health Research and Development Fund Program  
 National Institute for Mental Health  
 National Institute on Alcohol Abuse and Alcoholism  
 National Institute on Drug Abuse  
 Networks of Centres of Excellence

Novartis Pharmaceuticals Canada Inc.  
 Obsessive Compulsive Foundation  
 Ontario HIV Treatment Network  
 Ontario Innovation Trust  
 Ontario Mental Health Foundation  
 Ontario Ministry of Community and Social Services  
 Ontario Ministry of Correctional Services  
 Ontario Ministry of Health and Long-Term Care  
 Ontario Neurotrauma Foundation  
 Ontario Problem Gambling Research Centre  
 Ontario Research and Development Challenge Fund  
 Open Society Institute  
 Ontario Trillium Foundation  
 Parkinson Society Canada  
 Peterborough Youth Services  
 Pfizer Canada Inc.  
 Purdue Pharma  
 Region of Peel Public Health Department  
 Scottish Rite Foundation  
 Stanley Medical Research Institute  
 University of Toronto  
 Wake Forest University  
 Worker's Compensation Board of British Columbia  
 World Health Organization

## Breakdown of funding by source

	2004–2005 \$		2003–2004 \$		2002–2003 \$
Federal	18,161,500	Federal	17,345,195	Federal	15,211,032
Provincial	5,218,126	Provincial	6,563,472	Provincial	7,415,844
U.S.	4,843,972	U.S.	4,742,631	U.S.	3,794,889
Industry	5,569,674	Industry	4,388,871	Industry	1,818,892
International	245,380	International	-	International	248,586
Other*	500,722	Other*	503,142	Other*	312,071
<b>TOTAL</b>	<b>34,539,374</b>	<b>TOTAL</b>	<b>33,543,311</b>	<b>TOTAL</b>	<b>28,801,314</b>



\* "Other" includes all grants from Canadian universities and private (non-profit) foundations

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

**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.



## Message from the Chief of Research

It is with pleasure that I pen this note to mark the end of yet another successful year of research at CAMH. Our scientists garnered over \$34 million in grants and contracts, an all-time record for CAMH. They shared their findings and expertise across all corners of the globe; they served as teachers and mentors for over 100 graduate students and post-doctoral fellows; and their work and its relevance to problems of public interest are the subjects of hundreds of media stories.

At CAMH, research is not just about “discovering”—it is also about sharing and

applying our discoveries. Toward that end, our basic neuroscience efforts at the Imaging Centre have led to the installation of two state-of-the-art, high-resolution positron emission tomography (PET) scanners, which are now being used to find diagnostic markers for disease and to optimize the use of medicines. Our clinician scientists have advanced the use of repetitive Transcranial Magnetic Stimulation (rTMS) into standardized clinical application, thus bringing what was once a research technology directly to our patients. By putting their strengths together, our



clinical and policy scientists have initiated a province-wide evaluation of treatments for nicotine dependence and the impact of such treatments on health in general. We have also initiated a small Community Research Capacity Enhancement Program to foster research partnerships with community agencies.

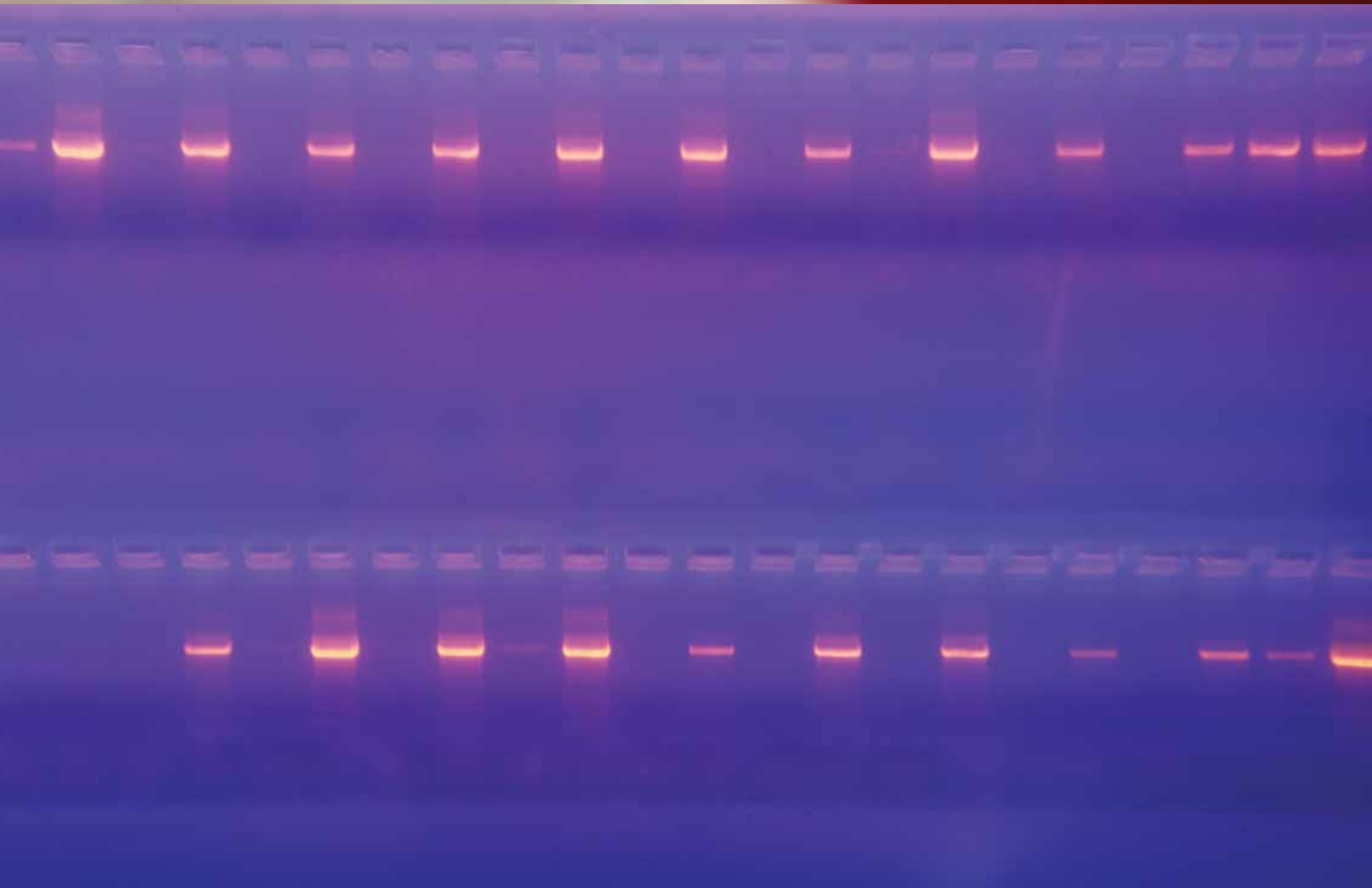
The list is long, so in this report we share with you a small sample of the many stories that exemplify the excellence, the relevance and the spirit of discovery, and the integration with care that infuses our work. People affected by mental illness and substance use problems

face many challenges—with research, we bring hope and inspiration for a better tomorrow.

I thank you for taking the time to read this. Please join me in thanking the scientists, research staff, students, post-doctoral fellows and volunteers who spend countless hours, at work and beyond, to make it all possible.

Best wishes for another successful year.

Shitij Kapur, MD, PhD, FRCPC  
*Chief of Research*



RACHEL TYNDALE:

## A new approach to help people quit smoking

Although we all know the dangers of tobacco smoking, our efforts to help people quit have been only partly successful.

Dr. Rachel Tyndale, Head of the Pharmacogenetics Research Section at CAMH, is tackling the serious public health issue of smoking by trying to better understand why some people smoke more than others, and why some find it easier to quit.

One answer may lie in our genes. We know that variations in genes can account for why some people respond to drugs differently than others. Understanding the role such variations play in why and how we become addicted to smoking can give us a new approach to individualized medicine. Dr. Tyndale's goal is to use genetic information to personalize treatment for people who want to quit smoking.

At CAMH, her work has already evolved from very basic studies in the test tube to clinical drug trials, based on her scientific findings, in people who are dependent on nicotine (the substance in tobacco responsible for dependence).

Dr. Tyndale's laboratory investigations initially focused on the genetic differences among people who smoke, in the enzyme that breaks down nicotine.

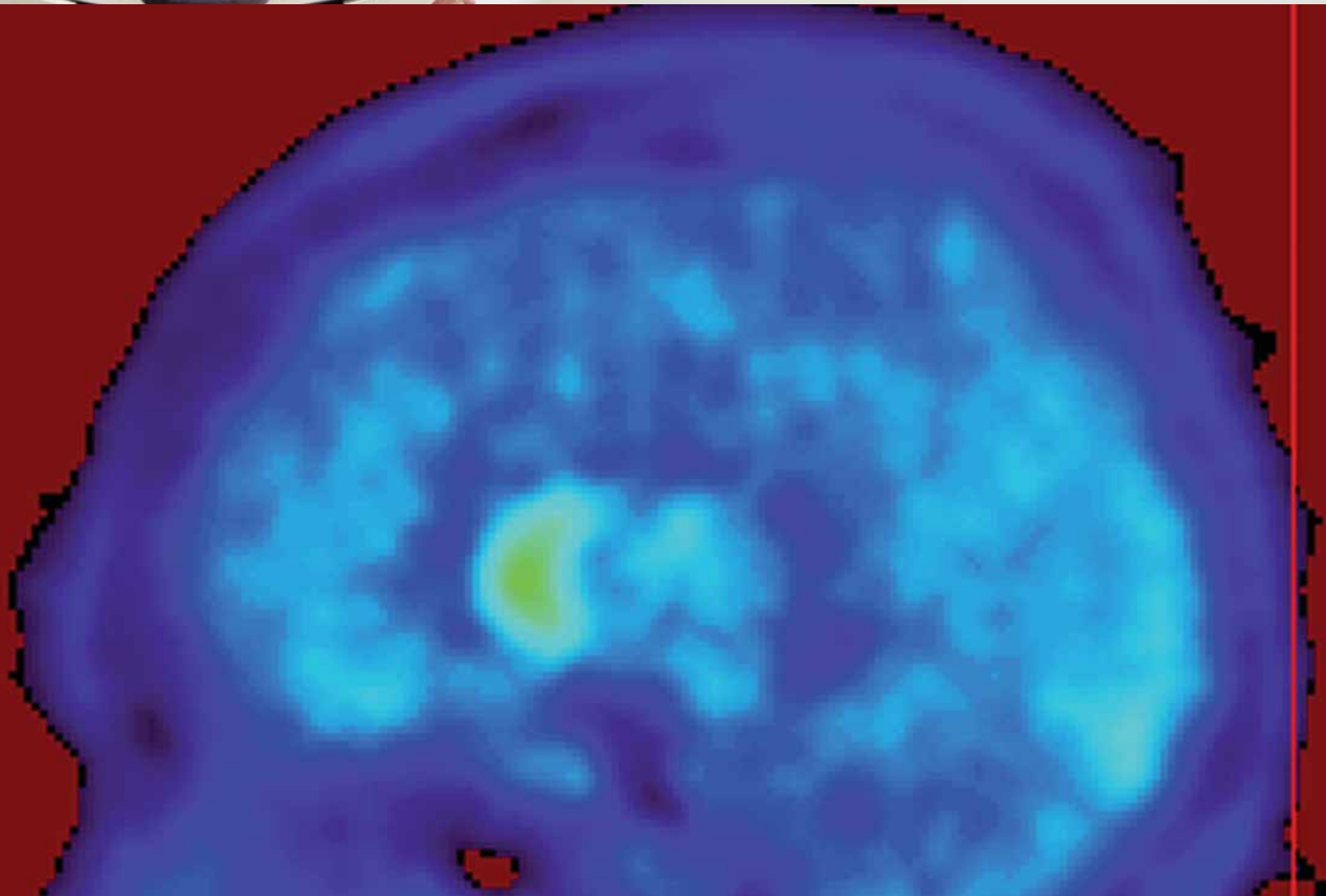
She discovered that some people have a genetic variation in this enzyme that causes them to break down, or metabolize, nicotine slowly. These people are less likely to smoke, smoke less each day if they do smoke and have greater success in quitting smoking. A different variant of the same gene has the opposite effect in other people: their bodies break down nicotine faster. These people are more likely to smoke heavily, have greater problems quitting and have more smoking-related health problems, such as lung cancer.

Dr. Tyndale's hope is that, in future, when people seek help for nicotine dependence, clinicians will be able to look first at the person's genetic makeup to see whether that person will metabolize nicotine quickly or slowly and then tailor treatment accordingly.

In clinical trials, Dr. Tyndale found that people who metabolize nicotine slowly are able to quit smoking more efficiently, and that their efforts to quit are enhanced by smoking cessation drugs.

Preliminary data from other clinical studies suggest that drugs that can block the metabolism of nicotine can reduce daily smoking. These studies show great promise, and her group is preparing for larger-scale clinical trials.

“The really exciting part of my research is the possibility of using genetic information, for the first time, to individualize treatment to help smokers quit this highly addictive drug.” —Dr. Rachel Tyndale.



JEFF MEYER:

## Brain imaging to help develop new antidepressant medications

To make progress in our understanding of depression and antidepressant treatment, we need to better understand the balance and functions of chemicals in the brain, such as serotonin, that play a role in mood disorders.

Dr. Jeff Meyer, Head of Neurochemical Imaging in Mood Disorders at the PET Centre, is working to understand depression using positron emission tomography (PET). PET is a “brain scan” procedure that allows us to measure proteins and chemicals in the brain. Dr. Meyer is using a new PET technique developed in Toronto to measure serotonin transporters.

Serotonin transporters, located on the ends of nerves, are sites that remove serotonin from active areas to inactive areas. In short, they control serotonin levels in active areas of the brain. Key questions about these sites needed to be answered: Are there more or fewer serotonin transporter sites during depression? How much do antidepressants affect these sites to change serotonin levels?

“In the past, most treatments for depression were found with a lot of luck,” says Dr. Meyer. “To advance in the future, we need to better understand the details of the illness and treatments.”

Two recent studies illustrate the way Dr. Meyer’s work will help generate future treatments and allow for more effective prescribing today.

The first question Dr. Meyer asked was whether the amount of serotonin transporter is changed in the brain of people who are depressed.

In the December 2004 issue of the *Archives of General Psychiatry*, Dr. Meyer and colleagues reported on his study of serotonin transporters in the brain of people living with

depression. In this study, they found that when serotonin transporters are elevated by about 25 per cent in people with depression, they develop symptoms of severe pessimism.

This project helps us better understand the complexity of how brain chemicals and the serotonin transporter are involved and altered in depression.

In the second study, Dr. Meyer used this PET approach to measure the percentage of brain serotonin transporter sites that are typically blocked by antidepressant medications. This measurement, it was hoped, would help us see how frequently prescribed medications affect the serotonin transporter.

In the May 2004 issue of the *American Journal of Psychiatry*, he reported that 80 per cent of serotonin transporter sites are blocked by the lowest therapeutic dose of the five most common antidepressants.

The long-term benefit will be to improve our understanding of how these antidepressants work. For example, one can see by these two studies that antidepressants that target the serotonin transporter do more than just balance serotonin—treatment lowers the measure by at least 80 per cent, and the measure is raised in depression at most by 25 per cent.

The short-term benefit of this information is that clinicians can better tailor the dose of antidepressant drugs to meet individual needs. Choosing the right dose for some could mean lessened side effects; for others, it could mean getting a better response. Another short-term benefit is that Dr. Meyer’s results are now the industry standard for developing new antidepressant treatments.

**Eighty per cent of serotonin transporter sites are blocked by the lowest therapeutic dose of the five most common antidepressants.**



MICHAEL BAGBY:  
Finding better ways to measure depression

Clinicians in every field use questionnaires and forms to assess what problems a client has and how to measure the severity of these problems.

Since it was published in 1960, the Hamilton Rating Scale for Depression (Ham-D) has been the “gold standard” for assessing depression severity. It is also used by psychiatrists and other mental health professionals to measure the effects of treatments for depression. Regulatory agencies in Canada, the United States and the European Union rely on the Ham-D to show that new antidepressant medications are effective before such medications are approved for public use.

This instrument is administered hundreds of thousands of times a year. Yet despite this wide-ranging use, many in the field have questioned the use of the Ham-D.

In the December 2004 issue of the *American Journal of Psychiatry*, Dr. R. Michael Bagby, a Senior Scientist and Psychologist in the Mood and Anxiety Program and the Director of the Clinical Research Department at CAMH, reported on a systematic review he conducted of 70 studies of the Ham-D in the past 25 years, and concluded that the test was “psychometrically and conceptually flawed.”

This article caused a great stir in the academic and regulatory community, as its findings have a direct impact on all aspects of

how the effectiveness of depression treatments will be assessed and evaluated in future: both in measuring how well antidepressant medications work in clinical care and in developing new drugs for depression.

Dr. Bagby’s article has been profiled in *Psychiatric News*, the official newspaper of American Psychiatric Association, and he has been recently interviewed about his study by the editors of *Scientific American*.

His article prompted response from the spokesperson of the Food and Drug Administration (which must approve all new medications in the United States) and the director of the American Psychiatric Association’s Office of Research, Dr. Darrel Regier. Dr. Regier said, in *Psychiatric News*, that “Dr. Bagby’s research has important implications for the future of DSM [the Diagnostic and Statistical Manual for Mental Disorders, used to diagnose depression] and how instruments like this should be considered.”

When asked about his plans for future research in this area, Dr. Bagby says, “the next step is to develop and validate an alternative instrument to replace the Ham-D. My colleagues and I at CAMH have, in fact, constructed such a scale; we are now seeking to evaluate its validity and reliability. Perhaps we might actually call this scale the ‘CAMH Depression Rating Scale!’”

“The next step is to develop and validate an alternative instrument to replace the Ham-D. My colleagues and I at CAMH have, in fact, constructed such a scale; we are now seeking to evaluate its validity and reliability. Perhaps we might actually call this scale the ‘CAMH Depression Rating Scale!’” —Dr. Michael Bagby.



KATE GRAHAM:  
Safer Bars program

The link between alcohol and violence has been recognized over time and across cultures. All too often, we hear about people being injured, killed or sexually assaulted in relation to licensed establishments.

Additionally, research has found that bars and clubs are high-risk locations for violence and aggression.

To address this problem, Dr. Kathryn Graham, Head of Social Factors and Prevention Initiatives, led a team to research and develop the Safer Bars program. The program was developed over five years, in consultation with police, lawyers, community health professionals, civic leaders and liquor licensing officials, as well as bar owners and staff from over 20 licensed premises in towns and cities across Ontario.

The Safer Bars program includes a three-hour training for bar staff and management, a booklet for bar owners and managers to address environmental risk factors for aggression and a pamphlet informing bar owners and staff of their legal responsibilities in preventing violence and injury. The training focuses on teamwork, communication and early intervention to prevent problems from escalating. The booklet is a practical guide emphasizing realistic solutions to reducing risks.

In 2000, Dr. Graham received a grant from the U.S. National Institutes of Health to conduct a large-scale, randomized-control evaluation of the Safer Bars program in Toronto. The results, published in 2004 as part of a special issue of *Drug and Alcohol Review* on preventing alcohol problems, showed that the program was effective in reducing physical violence in bars and clubs.

The evaluation also found that bar owners, managers and staff rated the program very highly. Their responses include the following:

“Safer Bars should be mandatory for all staff,” says one server. “It shows us not only to watch out for customers’ safety but also our own.”

“Safer Bars training course is an excellent way for people in the bar industry to find out how, where and why to apply it,” says one security member. “It is not all common knowledge.”

Dr. Graham suggests, “While the program cannot eliminate all violence in licensed premises, it does demonstrate that it is possible to reduce such violence and decrease risk of injury.”

The Safer Bars program has been used as the basis for similar programs in Norway and other countries, and several initiatives are currently underway to implement Safer Bars across Canada, in the United Kingdom and elsewhere.

“I think doing a course like this is great. It brings staff together to talk about different techniques, and it teaches us a lot about how to handle situations. There is really no course to take about how to work in a club. Most of us learn things through trial and error. By bringing us together and encouraging discussion to which research material is added, we bring all these years of experience into one room, and as a result we can all benefit.” —Bartender.

## New Psychiatric and Addiction Nursing Research Chair

Dr. Carles Muntaner is an international leader in showing how workplace organization and social class have profound effects on physical and mental health.

Recruiting the best people is an ongoing commitment of the Research Program, a commitment that allows us to improve the quality and extend the breadth of research at CAMH.

One of our recruitment highlights this year has been the appointment of Dr. Carles Muntaner as a senior scientist in the Culture, Community and Health Studies (CCHS) section of the Social, Prevention and Health Policy Research Department. In addition to this appointment, Dr. Muntaner is also the first recipient of the Psychiatric and Addiction Nursing Research Chair, a position co-sponsored by CAMH and the University of Toronto, where he is full professor at the Faculty of Nursing and in the Department of Psychiatry.

Dr. Muntaner brings to the CCHS section his outstanding scholarship in areas such as the social epidemiology of substance use and mental health, occupational health and international health. His

work is best known for its study of inequalities in health—explaining how health, illness, death and health care access are unevenly distributed across various social groups defined by, for example, social class, gender, race and ethnicity—and for showing how such inequalities are deeply rooted in social structures and economic systems. Dr. Muntaner is an international leader in showing how workplace organization and social class have profound effects on physical and mental health.

As we continue to develop the nursing research agenda for CAMH, Dr. Muntaner will also work closely with our advanced-practice nurses.

Dr. Muntaner has collaborated extensively with leading social epidemiologists and public health researchers from Spain, Sweden, Mali, Mexico, Chile and Venezuela. His outstanding achievements in conceptualizing and measuring social class and race, and assessing the effects of



work organization and neighbourhood contexts, earned him the opportunity to work with labour unions in the United States, Sweden and Spain. He is currently helping the Ministry of Public Health in Venezuela to develop public health policy.

Raised and educated in Spain, Dr. Muntaner studied medicine and completed his PhD in medical psychology at the University of Barcelona (MD). He then moved to the United States for post-doctoral fellowship programs at the National Institute on Drug Abuse, Johns Hopkins University (psychiatric epidemiology) and the National Institute of Mental Health. He served at the Institute of Occupational and Environmental Health at the West Virginia University School of Medicine (assistant professor) and the University of Maryland Schools of Nursing Medicine (full professor), and was cross-appointed with the Department of Mental Health, Johns Hopkins School of Public Health, until he and

his family moved to Toronto in 2004.

Dr. Muntaner has written more than 120 publications in professional journals and more than 35 book chapters, monographs and reports across various disciplines, from psychopharmacology to sociology. His latest book, *Political and Economic Determinants of Population Health and Well-Being: Controversies and Developments*, was published in 2004 and co-edited with Vicente Navarro. He has received many national and international awards: Behavioral Pharmacology and Toxicology award from the Association for Behavioral Analysis, Fleming Award from Oxford University, Fulbright/Ministry of Health and Consumer Affairs Fellowship and, in 2004, the prestigious Wade Hampton Frost Award from the Epidemiology Section of the American Public Health Association.

## Honours, appointments, recognition, endowments and new chair awards, 2004

Dr. Jean Addington organized and chaired the 4th International Conference for Early Psychosis in Vancouver.

Dr. Paul Arnold was awarded the Gregory M. Brown Graduate Scholarship. Dr. Arnold, a child psychiatrist, is a post-doctoral fellow at CAMH under the supervision of Drs. Peggy Richter and James Kennedy.

Dr. Anne Bassett was invited to join the 22q11 Deletion Foundation Medical Expert Panel, composed of distinguished international medical experts on 22q11.2 deletion syndrome.

Dr. Bassett, together with several other CAMH researchers, was identified as one of the top researchers in the City of Toronto's Discovery District.

Dr. Ray Blanchard became President of the International Academy of Sex Research, a closed organization that elects members on the basis of their publication histories. Dr. Blanchard presided over the annual meeting in Helsinki, Finland.

Dr. Bruna Brands was invited to be a member of the consensus panel at the Western Canadian Conference on Methamphetamine in Vancouver. The primary goal of the summit was to bring together people who work in health, law enforcement, policy, academia and social services, to develop a collaborative approach to the issue of methamphetamine use and production in Canada. Vancouver Coastal Health, with support from Health Canada and others, hosted the conference.

Dr. Eva Chow was selected to present her work on the psychosocial and occupational functioning in adults with 22q11 Deletion Syndrome as a platform presentation at the American Society of Human Genetics Annual Meeting.

The Culture, Community and Health Studies section, under the direction of Drs. Ted Lo and Samuel Noh, co-hosted the two-day conference on the Art and Science of Traditional Medicine at Ryerson University.

The Culture, Community and Health Studies section, under the direction of Dr. Noh, co-sponsored with the University of Manchester the first Conference of Cultural and International Mental Health Research.

Dr. Carolyn Dewa was asked to serve as the Research Manager of the Taskforce on the Implementation of the Canadian Institutes of Health Research (CIHR) Research Agenda on Workplace Mental Health.

Dr. Dewa, in collaboration with Drs. Alain Lesage, Jean-Yves Savoie, Remi Quirion and John Frank, co-edited a special issue of *Healthcare Papers* on mental health in the workplace.

Dr. Dewa co-ordinated a Canadian Institutes of Health Research Invited Workshop, entitled *Mental Health in the Workplace*, in Toronto. The 120 participants—who included researchers, policy makers, decision makers, stakeholders, workers, insurance companies, health care professionals and employer representatives—were asked to recommend a set of research priorities in six streams consistent with the CIHR's goals of fostering excellence in health research and promoting research that will have a positive impact on Canadians' health, economy and society.

Dr. David J. DeWit was appointed to Master's Membership in the Faculty of Graduate Studies for the Epidemiology and Biostatistics Graduate Program at the University of Western Ontario. The appointment allows for supervision of master's thesis students and co-supervision of doctoral thesis students.

Dr. DeWit was invited to speak at the first Annual Meeting of the Integrated Chronic Disease Prevention conference in Ottawa. He presented a paper examining the impact of the school environment on trajectories of growth in depression among youth.

Dr. Roberta Ferrence was appointed to a U.S. National Academies, Institute of Medicine Committee on Reducing Tobacco Use, which is preparing a major report to advise the nation on strategies, barriers and consequences relating to tobacco use.

Dr. Benedikt Fischer was one of 15 invited participants in the 2004 symposium *Leaders of Tomorrow* hosted by the Partnership Group from Science and Engineering, in collaboration with the major federal research granting councils (Natural Sciences and Engineering Research Council [NSERC], the Canadian Institutes of Health Research [CIHR] and the Social Sciences and Humanities Research Council [SSHRC]) in Ottawa. The symposium highlighted Dr. Fischer's multi-disciplinary work in the areas of addiction and public health.

Dr. Norman Giesbrecht was appointed to the Publications Board of the American Public Health Association (APHA) for a three-year term, 2004–2007. He also completed his term as immediate past chair and nominations chair for the APHA's Alcohol, Tobacco and Other Drugs Section.

Dr. Louis Gliksman was invited to serve on the Advisory Board for the national evaluation of Canada's Drug Abuse Resistance Education (DARE) project, sponsored by the Royal Canadian Mounted Police.

Dr. Gliksman was invited to participate in the National Alcohol Policy Framework discussions in Ottawa. These discussions will provide the basis for a comprehensive National Alcohol Policy strategy.

Dr. Paula Goering's CHSRF/CIHR Chair's Program in Health Services Research, "Generating and Disseminating Best Practices in Mental Health and Addiction," was renewed for six more years. This unique 10-year award focuses on training, knowledge exchange and linkage (in addition to research). With this award, the Health Systems Research and Consulting Unit is becoming a leader in knowledge exchange and in research dissemination.

Dr. Goering was invited by the Lieutenant-Governor of Ontario to speak on poverty, discrimination and mental health as part of his Shared Citizenship Public Lecture Series. This unique series of events brings some of Ontario's most innovative and important thinkers and practitioners together to discuss issues of contemporary public importance in an accessible, public forum.

Dr. Goering was honoured with the Canadian Mental Health Association Jubilee Public Service Award. This award was presented by the Lieutenant-Governor of Ontario to recognize outstanding volunteers in public service.

Dr. Kathryn Graham was an invited plenary speaker at the Third International Conference on Nightlife, Substance Use and Related Health Issues, Club Health 2004, in Melbourne, Australia. She presented the results of the Safer Bars outcome evaluation and made recommendations for making drinking establishments safer.

Dr. Graham was invited to present on barroom violence and strategies for preventing it at the National Drug Research Institute in Perth, Australia.

Dr. Sylvain Houle, Director of the PET (Positron Emission Tomography) Centre, was appointed to the National Research Council (NRC) Advisory Committee on TRIUMF, Canada's National Laboratory for Particle and Nuclear Physics.

Dr. Houle was invited to speak at the Annual Meeting of the Canadian Nuclear Medicine Society entitled "Illustrating the Potential: Pharmacokinetic Research."

Dr. Houle and colleagues were proud to announce the installation of the new Biograph 16 high-resolution whole-body PET/CT scanner acquired as part of the CAMH/GlaxoSmithKline collaboration.

Dr. Violet Kaspar was a member of a Peer Review Committee of the National Institute of Mental Health (NIMH), evaluating grant applications submitted to the NIMH Minority Research Infrastructure Support Program.

Dr. Elizabeth Lin was one of two principal investigators selected to lead the Ontario component of "Closing the Implementation Gap," a national project funded by Health Canada to develop quality measures for mental health care delivered in primary care.

Dr. Robert Mann was appointed to be the Theme Co-ordinator for the Societal Issues theme of the AUTO21 Network of Centres of Excellence (NCE). The NCE program is administered and funded by NSERC, CIHR and SSHRC, in partnership with Industry Canada.

Dr. Carles Muntaner received the Wade Hampton Frost Lectureship Award from the American Public Health Association.

Dr. Samuel Noh was invited as a consultant to the U.S. National Children's Study workshop, "Measuring Racial/Ethnic Disparities and Racism," launched by the NIH/NICHD (National Institute for Child and Human Development).

Dr. Arun Ravindran won the R.O. Jones Award for Best Research Paper from the Canadian Psychiatric Association.

Dr. Paula Ravitz received the Psychotherapy Award of Academic Excellence from the University of Toronto, Post-graduate Medicine, Department of Psychiatry. This annual award recognizes a person's outstanding contribution to the Psychotherapy Program in the Department of Psychiatry at the University of Toronto.

Dr. Jürgen Rehm, a Visiting Fellow of the Alcohol Advisory Council of New Zealand, participated in a study on "Burden of Death, Disease and Disability due to Alcohol in New Zealand."

Dr. Rehm, with colleagues Dr. Norman Giesbrecht and Dr. Kathryn Graham, won first prize in the public health category of the British Medical Association's book awards for 2004 for *Alcohol: No Ordinary Commodity*.

Dr. Lori Ross was made an Associate Member of the Institute of Medical Science at the University of Toronto.

Dr. Ross was appointed to Assistant Professor in McMaster University's Department of Psychiatry (part-time) and received the Career Scientist Award from the Ontario Ministry of Health and Long-Term Care's Ontario Women's Health Council.

Dr. Peter Selby's TUSP (Tobacco Use in Special Populations) Program collaborated with the Canadian Tobacco Control Research Initiative, Ontario Tobacco Research Unit and CIHR Strategic Training Program in Tobacco Research to organize the First Annual Invitational Meeting of Tobacco Control Investigators and Trainees—Building a Research Community. The two-day meeting gave researchers and students affiliated with the four organizations a forum to showcase current tobacco control research.

Dr. Selby's TUSP Program hosted a half-day professional development workshop, Writing Publishable Research Articles, for TUSP Fellows and other CAMH staff and students.

The workshop was facilitated by Sharon Nancekivell, Assistant Professor of Biomedical Communications in the Faculty of Medicine at the University of Toronto, and a freelance editor, writer and plain language consultant.

Dr. Selby led the Web-Assisted Tobacco Interventions (WATI) Workshop in Toronto. International experts in web-assisted tobacco interventions were brought together to discuss emerging issues in this field and begin to develop a better-practices model for WATIS.

Dr. Chekkara M. Shammi was nominated by the Professional Association of Interns and Residents of Ontario for an Excellence in Teaching Award from the University of Toronto.

Dr. Denise Tomkins was invited to be a member of FITRAP (Fitness-In-Treatment Research and Advisory Panel) at CAMH.

Dr. Rachel Tyndale was honoured with a Johns Hopkins Visiting Professorship at the Sidney Kimmel Comprehensive Cancer Center.

Dr. Tyndale's review article, "Genetics of Alcohol and Tobacco Use in Humans," was named among the "Top 5 Downloads" for *Annals of Medicine* for the previous year.

Dr. Hubert Van Tol became a member of the editorial board of the journal *Synapse*.

Dr. Sam Wells was an invited guest speaker at the international conference Binge Drinking: Problems and Responses, in Bristol, United Kingdom. Dr. Wells discussed the Safer Bars program that has been shown to be successful in reducing aggression in Canadian bars.

Dr. Trevor Young was honoured with The Douglas Utting Award, a Canadian award granted annually for a person's contribution to the study, understanding or treatment of depressive disorders.

## Research highlights

Drs. Anne Bassett, Eva Chow and colleagues, in collaboration with Dr. Linda Brzustowicz at Rutgers University, reported that the CAPON (carboxyl-terminal PDZ ligand of neuronal nitric oxide synthase) gene on chromosome 1 is linked to an inherited form of schizophrenia in Canadian families. CAPON is an appealing candidate for schizophrenia susceptibility because of its activities, which include formation of synapses in the developing brain and involvement in the glutamate neurotransmitter system, consistent with prevailing models of schizophrenia development.

Dr. Ray Blanchard published a meta-analysis of data from 10,143 male subjects, which confirmed that homosexuality in human males is predicted by higher numbers of older brothers, but not by higher numbers of older sisters, younger brothers or younger sisters.

In one of the first studies to characterize people dependent on prescription opioids in a methadone maintenance treatment program, Dr. Bruna Brands showed that those dependent only on prescription opioids were less likely to use illicit non-opioid drugs or to be associated with injection drug use; those who used prescription opioids only or initially were more likely to have ongoing pain problems and to be involved in psychiatric treatment.

Dr. John Cairney of the Health Systems Research and Consulting Unit and his research team released data showing that mental health care services in Ontario appear to adequately target the mental health needs of single mothers.

Dr. Tony Cohn and colleagues published a paper characterizing the coronary heart disease risk profile of people with chronic schizophrenia. Compared with a matched reference population, men and women with chronic schizophrenia showed double the rate of metabolic syndrome. This finding—consistent with increased coronary heart disease mortality reported in schizophrenia—has led this group to establish a protocol for monitoring metabolic and cardiac risk factors in people treated with clozapine.

An NIH-funded study, looking at the effectiveness of the Strengthening Families intervention for children of alcohol-abusing parents (co-led by Dr. David J. DeWit) identified punitive parenting as a mechanism to account for the relationship between parent psychopathology and child social skill deficits.

A study, led by Dr. Peter Farrow, to assess the use and effectiveness of web-based self-help cognitive-behavioural therapy for panic disorder and agoraphobia showed that such programs hold promise as effective, accessible treatment for anxiety.

Dr. Benedikt Fischer, with collaborator Dr. John Farley and colleagues, studied interferon-ribavirin combination treatment for hepatitis C virus (HCV). This study, which looked at people infected with HCV who were inmates of federal correctional institutions in British Columbia, showed that two-thirds of the sample achieved a “sustained virological response” and thus were considered cured. Given that the majority of HCV infections occur in marginalized populations, the key implication of this study is that state-of-the-art treatment is feasible in the high-risk correctional setting and produces outcomes comparable to patient samples in the general community.

The Ontario Tobacco Research Unit, under the direction of Dr. Roberta Ferrence, released a major report on monitoring the Ontario Tobacco

Strategy. The report includes extensive information, based on CAMH surveys as well as federal sources, on tobacco use and problems in Ontario and also includes recommendations for the Ministry of Health and Long-Term Care and the tobacco control community.

A project led by Dr. Susan George found that dopamine D1 and D2 receptor co-activation triggered a novel calcium signal in brain. This has significant implications for understanding schizophrenia and drug addiction and provides a new target for designing medications for these conditions.

Apelin peptide, a neurotransmitter, is the natural chemical that activates the apelin receptor; this receptor was first discovered in the Molecular Pharmacology laboratory, under the direction of Dr. George. The lab designed an analogue that can interfere with and block the actions of apelin, in order to decipher its role in the brain—this work may lead to a better understanding of higher brain functions, such as learning, mood regulation, stress responses and appetite.

A study to assess the influence of various factors in developing impaired driving policy in the United States and Canada, led by Dr. Norman Giesbrecht and Dr. Linda Degutis (Yale University), showed that research evidence, victims' stories, societal factors and advocacy groups such as MADD played a major role in preventing drinking and driving.

Dr. Louis Gliksman completed the first Canadian research on drug treatment courts. The results indicated success with specific types of clients, but that drug treatment court is not a panacea. The research included recommendations for client retention, treatment requirements, court processes, cost implications and client process for other drug treatment courts that are starting across Canada.

As cannabis has entered mainstream culture, Dr. Andy Hathaway has found that people's cannabis use practices appear to be evolving. Based on interviews with 104 people in Toronto who had used cannabis long-term, illicit drug experience was largely limited to cannabis, and the law was not a problem for most people who use the drug. Rather, their emphasis was on informal rules for managing risk and stigma within their social circles.

Dr. Lorne Korman led a randomized controlled study evaluating an emotion- and behaviourally based treatment for concurrent gambling, substance use and anger. Results showed that an integrated treatment was more effective at reducing gambling, substance use and anger problems, and at retaining clients in treatment, than a gambling-only treatment.

Dr. Peter Li reported that elevated levels of the signalling G protein,  $G\alpha_s$ , increases vulnerability of neuronal cells to cellular stressors. This finding extends his group's earlier observation implicating abnormalities of  $G\alpha_s$ -mediated signalling as another link in the molecular chain involved in bipolar disorder.

In response to an invitation by the Hospital Report Collaborative, a team led by Drs. Elizabeth Lin and Janet Durbin developed the first province-wide mental health Hospital Report Card. The report provided provincial and regional benchmarks for 24 performance indicators of inpatient mental health care. The team developed new data sources to provide critical province-wide information on patient satisfaction, information management practices and use of evidence-based practices.

Dr. Scott Macdonald and his colleagues found that convictions for driving while impaired by alcohol were significantly elevated among those assessed in treatment for cocaine-only problems but not among those who had problems with cannabis only. The results suggest that cross-dependence of alcohol and cocaine is common, and problematic drinking among people seeking help for cocaine dependence can go undetected when clients are being diagnosed for treatment.

A project led by Dr. Brian O'Dowd discovered that the apelin receptor, one of the G protein coupled receptors, goes to the nucleus of human brain cells. The lab then created a novel screening method—based on modifying other receptors of this type so that they, too, can go to the nucleus of brain cells—to discover compounds that target G protein coupled receptors. These receptors are very important therapeutically, as many drugs target them.

G protein coupled receptors occur as complexes, or oligomers, in the human brain; these complexes have novel properties in the brain. Dr. Brian O'Dowd observed these complexes in living cells and achieved their disruption for the first time. Receptor oligomers undergo a strict quality control check of their structure before being sent to the cell surface to ensure that they are in the correct conformation for activation; if abnormal receptors are made, they will be detected by the cell. Understanding these receptor complexes better has implications for discoveries about diseases and medications.

Analyses for the World Bank and WHO by Drs. Jürgen Rehm and Dan Chisholm showed that, for most parts of the world, taxation and other regulatory policies are the most effective and cost-effective ways to lessen the burden of alcohol-related disease, including alcohol dependence.

Dan Rootman, Dr. Robert Mann, Rania Shuggi and colleagues examined the proportion of clients who completed Back on Track (BOT), Ontario's Remedial Measures Program for those convicted of drinking and driving. Program completion rates are important indicators of program success. BOT's completion rate was found to be over 97 per cent, the highest rate reported in the literature.

The PREGNETS (Network for the Prevention of Gestational and Neonatal Exposure to Tobacco Smoke) project, led by Dr. Peter Selby, aimed to increase capacity among health care professionals who work with women who smoke during pregnancy and postpartum. The project also trained staff in two provincial resources, Smokers Helpline and Motherisk, and provided counselling to pregnant women who smoke. As a result, the website [www.pregnets.org](http://www.pregnets.org) was established.

The Neighbour at Work project, led by Drs. Martin Shain and Helen Suurvali, identified the "Neighbour at Work Effect," an outcome obtained when employees and their managers enter into a particular process to improve the quality of employment relationships. In the process, a survey allows an exchange of perspectives on conditions of work that enables the parties to see the others' points of view. Results show that the process leads to an overall greater perception of fairness in the immediate working environment. This perception, in turn, is known to be a positive influence on mental health, leading to reduced symptoms of anxiety and depression.

Dr. Beth Sproule and colleagues conducted a study to assess community pharmacists' attitudes and professional interactions toward people who use mental health medications; results showed that, despite generally positive attitudes, pharmacists felt uncomfortable discussing mental health symptoms and related medications with clients. Adequate training in mental health may be key in improving the professional interactions of community pharmacists with these clients.

An initial low-level response in ethanol sensitivity may help predict risk for developing alcohol abuse and dependence in humans, although this has not been consistently shown in clinical studies. Drs. Denise Tomkins and Anh Dzung Le, using rats selectively bred at CAMH for binge-like drinking, suggest that one possible factor for these inconsistencies is the preferred drinking profile; that is, binge drinking versus continuous alcohol consumption. High initial response to alcohol was a better predictor of a binge drinking profile. These results highlight the importance of considering genetic and behavioural factors when interpreting research findings.

A placebo-controlled study of the efficacy of naltrexone for concurrent problem gambling and alcohol dependence, led by Drs. Tony Toneatto, Bruna Brands and Peter Selby, found naltrexone and placebo to be equally effective in reducing gambling behaviour and alcohol consumption.

Dr. Tony Toneatto found that a one-session minimal intervention for problem gambling was as effective as more intensive treatments in reducing the frequency of gambling and the amount wagered.

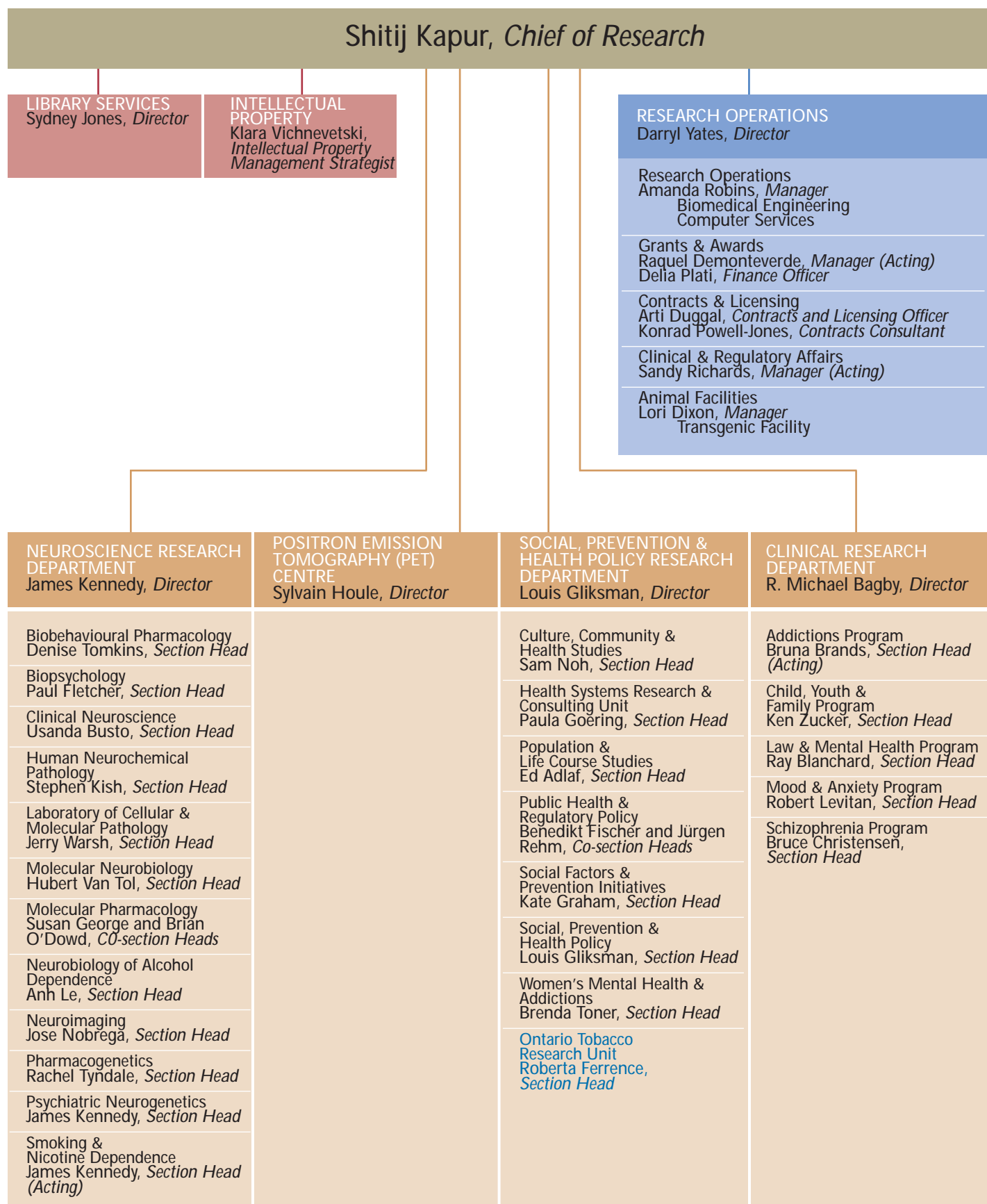
A study to assess the link between being an aggressive person and people's reactions to hostile, ambiguous and accidental provocations, led by Dr. Paul Tremblay, showed that the role of an aggressive disposition in a provoking situation depends on the intent of the instigator. This suggests that people who tend to be aggressive would benefit from intervention that addresses their perceptions of the other person's intent in provoking situations.

Drs. Nigel Turner and John Macdonald presented findings from an evaluation of a prevention-oriented high-school curriculum on problem gambling. Their results suggest that the curriculum significantly improved the students' understanding of random chance and coping skills.

Building on their recent discoveries into the role of altered intracellular calcium signalling dynamics as an important factor causing bipolar disorder, Dr. Jerry Warsh and his research team have now uncovered two calcium-permeable transient receptor potential channel proteins, TRPC3 and TRPM2, as a specific target of lithium and a genetic risk factor for bipolar disorder, respectively. Collectively, the findings create a compelling case that genetic and molecular disturbances in a network of interacting calcium channel systems are a cause of illness in a substantial subgroup of people with bipolar disorder. Equally important, they have identified key targets for developing new medications to treat bipolar disorders.

Dr. Albert Wong's project, "Immunological mechanisms affecting cortical neurodevelopment," complements ongoing work with several other animal models related to psychosis, in which the analysis of global brain mRNA transcription patterns may help to identify molecular pathways and genes involved in schizophrenia.

# Research Office structure



## Media relations

Between April 2004 and March 2005, CAMH received 1,157 media mentions and 1,116 incoming media calls. This is a six per cent increase in media mentions and an 18 per cent increase in incoming media calls over the last fiscal year.

### CAMH Strategic Directions

In accordance with our mandate to become a leader in the areas of research, public policy, diversity initiatives and overarching issues, during the 2004–2005 fiscal period, CAMH generated or received the following number of related news items in these areas:

	Fiscal 2004–2005	Fiscal 2003–2004	Fiscal 2002–2003
Research	521	321	365
Public policy	187	140	306
Ethnocultural	12	5	4
Determinants of health	40	3	39
Youth	357	286	N/A
Diversity	22	36	N/A
Concurrent disorders	125	7	N/A

### Media highlights from 2004–2005

Reginald Smart: road rage research

Ed Adlaf and Jürgen Rehm: Canadian Addiction Survey

Joe Beitchman and Ed Adlaf: Mental Health of Youth in Ontario/Ontario Student Drug Use Survey (OSDUS)

Norman Giesbrecht and Jürgen Rehm: alcohol research

Stephen Kish: Parkinson's disease and gambling

Robert Cooke: comments on deep brain stimulation for depression



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