



SOMnews



Point of Pride

The Baltimore Division of the Veterans Affairs Maryland Health Care System, located on the University of Maryland, Baltimore campus, houses one of only eight VA Mental Illness Research Education and Clinical Centers in the nation. The goal of these centers is to **improve the care of veterans with schizophrenia** and other serious mental illnesses and involves substantial integration with the scientific expertise on serious mental illness and mental health services at the University of Maryland School of Medicine.

What's New...

SOMnews has now expanded to eight pages, with more information and special sections on Research & Discovery, Clinical Care, Academic Innovations and Community Impact.

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DEAN'S MESSAGE

This month, the *SOMnews* is highlighting the incredible accomplishments of the UMSOM Maryland Psychiatric Research Center (MPRC), as it celebrates its 40th anniversary.

The MPRC would not be the leading basic, translational and clinical research and practice center that it is today had it not been for the visionary leadership of **William Carpenter, Jr., MD**, Professor in the Department of Psychiatry and Director of the MPRC from 1977-2013. Although a version of the MPRC existed before Dr. Carpenter's arrival in the late 1970s, it was severely struggling. Dr. Carpenter's reputation in the field of schizophrenia research, most notably his contributions to an NIH-sponsored international schizophrenia study, made him an excellent choice to head up the once-foundering Center.

Dr. Carpenter quickly established a culture within the MPRC where basic scientists and clinicians worked closely and collaboratively — exactly the type of interdisciplinary partnership the School of Medicine's strategic **Vision 2020** and **ACCEL-Med (Accelerating Innovation and Discovery in Medicine) Initiative** aim to achieve. The MPRC took on responsibility for patient care, building clinical programs that provided treatment rooted in rigorous biomedical research. For example, he recruited investigators like **James Gold, PhD**, Professor in the Department of Psychiatry, who established a **Cognitive Affective Neuroscience Schizophrenia (CANS) laboratory**, which uses a combination of methods to unravel the nature of brain abnormalities in people with schizophrenia.

Importantly, and perhaps quite fortuitously, Dr. Carpenter's work to create a strong research-based psychiatric center attracted the attention of a young physician, **Robert Buchanan, MD**. Dr. Buchanan began as research fellow at the MPRC in 1985 and quickly established himself as a leader in the field of schizophrenia research, investigating pharmacological interventions to alleviate the symptoms and cognitive impairment associated with the disease.

When Dr. Carpenter decided to step down as MPRC Director in 2013, and a national search ensued to identify his successor, we ultimately realized that the best possible director for the MPRC was Dr. Buchanan. We could not have made a better decision. Dr. Buchanan continues to lead the MPRC to outstanding success, overseeing a portfolio of nearly \$12 million in research funding; a faculty, staff, student and trainee roster of 80 highly dedicated individuals; and three exceptional patient care programs.

Today, the MPRC and the Department of Psychiatry are components of the **Brain Science Research Consortium Unit (BSRCU)**, one of the **major pillars of Vision 2020** and **ACCEL-Med**, as it brings together basic, translational and clinical researchers to answer the "Big Science" questions about the brain and how it functions in health and disease. Led by **Bankole Johnson, DSc, MD, MB,ChB, MPhil**, The Dr. Irving J. Taylor Professor and Chair in the Department of Psychiatry, the BSRCU has made great strides in working to unravel the complexities of the human brain, thereby bringing us that much closer to finding better treatments and cures for diseases such as schizophrenia.

What's on My Mind...



...is our School's steadfast dedication to understanding and treating mental illness, one of the greatest public health burdens our society faces today.



As members of the West Baltimore community, we see the devastating effects of mental illness every day. These diseases play a key role in so many of the major problems the region faces, such as drug addiction, violence, homelessness, poverty and unemployment. However, the MPRC has made significant advances in unraveling the basis for these disorders and developing novel therapeutic approaches to help restore health to those who are suffering. It is an honor to work with such exceptional colleagues every day.

In the relentless pursuit of excellence, I am
Sincerely yours,

E. Albert Reece, MD, PhD, MBA
Vice President for Medical Affairs, University of Maryland
John Z. and Akiko K. Bowers Distinguished Professor and
Dean, University of Maryland School of Medicine

The Best Medicine Close to Home

Specialty Practice Location
 Maryland Proton Treatment Center
 850 W. Baltimore Street
 Baltimore, Maryland 21201
 410-369-5200
 mdproton.com



“We have always have prioritized patient-centered service as an essential ingredient of high-quality care.”

— William F. Regine, MD, FACR, FACRO
 Professor and Chairman of Radiation Oncology
 Isadore Fannie Schneider Foxman Chair,
 Department of Radiation Oncology
 Executive Director, Maryland Proton Treatment Center

Full-Service Community Programs

BALTIMORE CITY:

University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center
 22 S. Greene Street
 Baltimore, Maryland 21201
 410-328-6080
 www.umm.edu

HOWARD COUNTY:

Central Maryland Radiation Oncology Medical Pavilion at Howard County
 10710 Charter Drive, Suite G030
 Columbia, Maryland
 443-546-1300
 cmradonc.org

ANNE ARUNDEL COUNTY:

Tate Center at Baltimore Washington Medical Center
 301 Hospital Drive
 Glen Burnie, Maryland
 410-553-8100
 www.mybwmc.org

HARFORD COUNTY:

Patricia D. and M. Scot Kaufman Cancer Center at Upper Chesapeake Health
 500 Upper Chesapeake Drive
 Bel Air, Maryland 21014
 443-643-1199
 umuch.org

CECIL COUNTY:

University of Maryland Radiation Oncology at Union Hospital
 152 Railroad Avenue
 Elkton, Maryland 21921
 443-907-1650
 www.uhcc.com

RADIATION ONCOLOGY CONNECTS HIGH-TECH, WORLD-CLASS CARE WITH LOCAL COMMUNITIES

William F. Regine, MD, FACR, FACRO remembers that when he was younger, his mother had no choice but to travel some distance from their New York home on Staten Island to downtown Manhattan in order to see a physician. At the time, he wondered why she couldn't receive the same care locally. Today, as the Isadore and Fannie Schneider Foxman Chair of UM SOM's Department of Radiation Oncology, Dr. Regine affirms that his observation regarding his mother is still top of mind.


"My basic philosophy is this," he says. "While I'm proud that our department has achieved a level of excellence in its state-of-the-art technology, clinical expertise, and clinical trials portfolio, what I want to do is to bring that excellence and care directly to the communities where our patients live. I always have prioritized patient-centered service as an essential ingredient of high-quality care."

Since he was named the department's chair in 2002, Dr. Regine and his staff have gone the distance to make this vision of community-based care a reality. When he arrived, the Department of Radiation Oncology, which was founded in the early 1960s, had just one "state-of-the-art" clinical patient site at the University of Maryland Medical Center in downtown Baltimore, treating roughly 700 patients a year. Fast-forward to 2017, and the department has grown to provide world-class care to 2,200 patients annually through a regional network of six high-tech treatment centers, including the new Maryland Proton Treatment Center, one of just 25 proton treatment centers in the US, and the only one in the Baltimore-Washington region. As a cornerstone of the NCI-designated University of Maryland Marlene and Stewart Greenebaum Comprehensive Cancer Center (UMGCCC), the department offers the most advanced radiation therapies available for all types and stages of cancer. As importantly, the department's NIH funding has been ranked in the Top 5 by the Association of American Medical Colleges (AAMC), rising from 41st in 2002.

The Radiation Oncology clinical network employs a hub-and-spoke model, but with several distinctive differences that benefit the patient experience. Thanks to the RadOnc telemedicine program, patients receiving cancer treatment at any of the five community-based centers can receive immediate access to feedback from the department's top clinicians, with tumor specific expertise, without having to travel to Baltimore City.

By the same token, each center has a research associate/nurse on staff to help patients participate in clinical trials and novel treatments while remaining in their communities. "The great benefit for patients is that they can get access to downtown's cutting-edge care in their own backyards," says Dr. Regine.

Should a patient need to travel to receive radiation treatment at the Maryland Proton Treatment Center or elsewhere at the UM Medical Center, the department offers a complimentary **Concierge Program** that oversees every aspect of the patient's visit. A dedicated concierge team member is on hand to help patients and their families with pre-coordination of all appointments, free valet and garage parking, a personal escort to patient appointments, lodging recommendations, and much more. For young patients undergoing radiation therapy, the department's **Magic Castle Program** serves to ease their fears and encourage them through the treatment process. At the start of treatment, each child is asked to place three wishes inside of the Magic Castle, one of which is located in the lobby of the Proton Center, while the other is located in the UMMC RadOnc lobby. On the final day of their treatment, as they celebrate with family and staff members, the child receives one of their wishes, be it a video gaming system, big-screen TV, or in the case of one wish, a fence to keep the deer out of the family garden.

Given its innovative emphasis on a positive patient experience and community-based service, the Department of Radiation Oncology continues to receive high marks from patients on the quality of their care, including a 95 percent "very good" or "excellent" rating from all patients utilizing their clinical network. At the same time, with the growth of the department's reputation and technology capabilities, inquiries from other regional medical centers, such as the Children's National Medical Center in Washington, DC, are arriving with greater frequency. For Dr. Regine, this recognition of his department's efforts is both affirming and a call to further action. "This feedback is unbelievable, but all the more reason to pursue our vision of excellence in research, education, clinical care, and patient-centered service," he notes. ***"You can feel that passion and energy present throughout our network."*** 



Cutting Edge Technologies for Cancer Care

The Department of Radiation Oncology provides a broad array of specialized, state-of-the-art treatments and therapies, including:

- AlignRT provides enhanced 3D imaging of the body's surface to ensure exact placement of the patient for each treatment visit while reducing exposure to unnecessary radiation.
- The Calypso 4D Localization System precisely sets up prostate radiation therapy and then monitors the prostate's position during treatment.
- Stereotactic Body Radiation Therapy (SBRT) is a technique designed to deliver targeted radiation therapy to tumors anywhere in the body.
- External/Internal Thermal Therapy (Hyperthermia) delivers heat to cancerous tumors to enhance treatment effectiveness.
- Intensity Modulated Radiation Therapy (IMRT) uses varying beam intensities to send radiation to the tumor site from the most favorable paths. Our radiation oncology experts pioneered development of IMRT.
- RapidArc delivers high-dose radiation to tumors two to eight times faster than conventional means to treat certain cancers with image-guided, intensity-modulated radiation therapy (IG-IMRT).
- The Trilogy System linear accelerator is the latest technology available in radiation treatment for cancer.
- Tumor Treating Fields (TTF) is a treatment for patients with recurrent glioblastoma, a deadly type of brain tumor resistant to chemotherapy and radiation.
- TrueBeam is a new image-guided, all-digital radiotherapy system that can deliver radiation treatments to cancer patients with sub-millimeter accuracy.
- Proton Therapy employs an intense beam of high-energy protons to destroy cancer cells. Unlike photons (x-rays) used in traditional radiation therapy, a proton beam will stop once it reaches a targeted tumor, preventing healthy tissues nearby from receiving radiation.
- With the Edge System's (radio surgery) power and speed, clinicians accurately deliver non-invasive treatments for malignant and benign brain tumors in a shorter amount of time than traditional treatments.
- Gammapod is the world's first and only system designed to treat early breast cancer with stereotactic precision through high-dose radiation therapy, otherwise known as stereotactic body radiotherapy, or SBRT. Invented at the University of Maryland, it will be available to patients in 2017.
- SIR-Spheres delivers radiation directly to the site of liver tumors. This unique, targeted therapy spares healthy tissue while delivering up to 40 times more radiation to liver tumors than would be possible using conventional radiotherapy.



40 YEARS of Success



UMSOM's **M**aryland **P**sychiatric **R**esearch **C**enter Strives to Understand the Causes of Schizophrenia and Develop Innovative Treatments



Since its incorporation into the University of Maryland School of Medicine in 1977, the Maryland Psychiatric Research Center (MPRC) has focused on understanding the causes of schizophrenia and other serious mental health disorders, with the ultimate goal of developing novel new treatments for these disorders. The MPRC is a University of Maryland School of Medicine (UMSOM) Organized Research Center within the Department of Psychiatry. The MPRC is located on the campus of Spring Grove Hospital Center in Catonsville and operates as a collaborative program between UMSOM and the State of Maryland Behavioral Health Administration, Department of Health and Mental Hygiene (DHMH).

MPRC faculty include both basic scientists and clinical researchers; their close physical proximity encourages cross-pollination among scientists with complementary areas of expertise. In addition to multiple individual R01 grants, MPRC faculty members have been awarded many important program, project and center grants. In FY 2016, the MPRC had nearly \$12 million in total grants and contracts, including nearly \$9 million in NIH funding. MPRC faculty are internationally recognized for their leadership in schizophrenia research. MPRC faculty have won many research prizes over the years, and the Center publishes *Schizophrenia Bulletin*, a top journal in the field, with Oxford University Press.

The MPRC is currently directed by **Robert W. Buchanan, MD**, who is a Professor in the Department of Psychiatry. Under his leadership, the Center has focused on several areas of research: the neurobiology of schizophrenia and related disorders through the use of advanced neuroimaging techniques, genetics, innovative animal models, and cognitive neuroscience, and the development of new pharmacological approaches for the treatment of people with schizophrenia, with a strong focus on cognitive impairments and negative symptoms, which represent major unmet therapeutic needs in schizophrenia.

Dr. Buchanan, who has been at the center for more than 30 years, has a great deal of experience conducting research on schizophrenia. Over the past two decades, he has consistently been among the top one percent of cited authors in his field. He is currently conducting research into new therapies for the treatment of the cognitive and social symptoms of the disease, including the use of oxytocin, as well as anti-inflammatory and anti-viral medications.

In the beginning of his long tenure at the MPRC, **Robert Schwarcz, PhD**, the Director of the MPRC Neuroscience Program and a Professor in the Department of Psychiatry, demonstrated that antagonists of excitatory amino acid "glutamate" receptors prevent or arrest neurodegeneration in experimental animals. His groundbreaking concept initiated the pursuit of "neuroprotective" strategies, and the development of new classes of therapeutic agents, for the treatment of major brain diseases including epilepsy and Alzheimer's disease.

More recently, Dr. Schwarcz' work has focused on the neurobiology of the essential amino acid tryptophan, which is degraded to several neuroactive metabolites. He found that one of them, kynurenic acid (KYNA), is increased in the brain of persons with schizophrenia and may be causally related to the cognitive deficits seen in these people. This discovery, which has been confirmed in studies worldwide, led to the novel idea that down-regulation of KYNA levels in the brain may normalize the functional impairments. Supported by a \$10.7





million Silvio O. Conte Center grant from the National Institute of Mental Health, several MPRC scientists and their collaborators are currently involved in exciting basic and clinical studies to test this hypothesis.

The center is also focusing on mental disorders beside schizophrenia. **Greg Elmer, PhD**, a Professor in the Department of Psychiatry, is examining the relationship between stress, trauma, posttraumatic stress disorder and substance abuse. He has found that early life stress leads to a higher risk of mental illness. In some cases it appears that this stress can contribute significantly to schizophrenia. **Paul Shepard, PhD**, a Professor in the Department of Psychiatry, has focused on a brain region known as the habenula. This area plays a major role in how humans process expectations around rewarding and aversive events. Dr. Shepard's research suggests that maladaptive changes in the circuit connecting the habenula with dopamine neurons may contribute to major depressive disorder in humans.

Ana Pocivavsek, PhD, an Assistant Professor in the Department of Psychiatry, is investigating the relationship between sleep and cognition. Cycles of poor sleep are associated with impairments in learning and memory and Dr. Pocivavsek is working to unravel the underlying mechanisms between sleep disturbances and neurocognitive impairments. Her research focuses on kynurenic acid as a key molecular link mediating the relationship between sleep and cognition and aims to identify new therapeutic approaches to alleviate these poor outcomes in patients with psychiatric disturbances.

Schizophrenia is generally seen as a psychotic disorder. But many people with the illness also suffer from learning and memory problems. Associate Professor **Laura M. Rowland, PhD**, is focusing on this aspect of the disease, and is currently involved in several studies using a range of neuroimaging technologies, including functional MRI and magnetic resonance spectroscopy (MRS), to examine how neuroplasticity associated with learning differs among people with schizophrenia. She also uses imaging techniques to track changes in brain chemistry, including glutamate and GABA, among those with schizophrenia as the disease progresses throughout the lifetime. In addition, she is focusing on another lesser-known aspect of the disease: the fact that patients often have sleep disturbances. She is examining the association between sleep quality and neuroimaging, cognitive, clinical, and peripheral measures in an effort to better understand how sleep impairments impact sleep affects those with the illness.

James Gold, PhD, a Professor in the Department of Psychiatry, and **James A. Waltz, PhD**, an Associate Professor in the Department of Psychiatry, have focused on another key symptom of schizophrenia — motivation. Even if their hallucinations and delusions are successfully treated with medication, many people with the illness appear to be unmotivated to pursue goals and interests including further education, work, and social activities. Over years of study, the researchers have found that those with the illness appear to have a cognitive problem where they have difficulty understanding the potential benefits that could come from their pursuit of goals. Indeed, patients often appear to learn more from negative feedback than they do from positive feedback. There is evidence motivational problems may result from dysfunction within various cortical networks, mostly involving the prefrontal cortex, rather than in the brain areas that are stimulated by rewards.

The research focus of **Britta Hahn, PhD**, an Associate Professor in the Department of Psychiatry, has been the use of nicotinic acetylcholine receptor agonists to improve cognitive performance in people with schizophrenia. Her work spans preclinical and human studies aimed at identifying brain mechanisms underlying these potentially therapeutic effects, some of which involve functional Magnetic Resonance Imaging. Furthermore, Dr. Hahn conducts studies on the interplay between cognitive and dependence-related effects of nicotine, as well as clinical trials in people with schizophrenia, most recently a study testing potential nicotinic enhancement of a cognitive training intervention. **Heidi J. Wehring, PharmD, BCPP**, an Assistant Professor in the Department of Psychiatry, is studying the aspect of co-occurring tobacco use in persons with schizophrenia. Her research currently revolves around the aspect of tobacco craving in this population.

The MPRC is part of the \$11 million National Institutes of Health ENIGMA brain study, developing new analytical tools to better understand mental disorders. The MPRC part of the project, co-led by **Peter Kochunov, PhD**, a Professor in the Department of Psychiatry, is on diffusion tensor imaging (DTI). Dr. Kochunov and his colleagues are developing innovative analytical tools to examine genetic associations with DTI white matter measures. The project brings together brain researchers across the world and represents the largest ongoing brain imaging- genetic research endeavor. The MPRC has also been awarded \$4.2 million by NIH to study the neural circuitry that underlies schizophrenia and other mental illnesses. The project is led by Dr. Kochunov and **L. Elliot Hong, MD**, Director of the MPRC Neuroimaging Research Program and a Professor in the Department of Psychiatry, in close collaboration with faculty from the Department of Medicine (**Alan Shuldiner, MD**, and **Braxton Mitchell, PhD**). They and their colleagues are studying the Old Order Amish community within Lancaster County, Pennsylvania. The project is designed to collect behavioral and genome sequence data in Old Order Amish participants, who are members of large multi-generational families that have a history of complex mental disorders. "This research will provide novel opportunities to identify genetic risk factors that predispose people to schizophrenia and other mental disorders," said Dr. Kochunov. "It's exciting, because we can really understand new aspects of these disorders."

The MPRC is also involved in extensive collaborations with investigators across the campus, including UMSOM Departments of Anatomy and Neurobiology, Pharmacology, Radiology, Medicine, Neurology, Ophthalmology, and the Institute for Genome Studies (IGS) and the Institute of Human Virology (IHV). For example, in a recent exciting new development, MPRC and IGS faculty are working on research into links between the gut microbiome and normal brain development and function, and how disruptions of the gut microbiome may contribute to various mental illnesses, including schizophrenia. In one study, Dr. Elmer exposes mice to a live predator (snake). The mouse is protected in a clear plastic tube, but still experiences mentally stressful effects that have long-term psychiatric consequences. Dr. Elmer and IGS colleagues are very interested in delineating how the stressor changes the mouse gut microbiome, and at the same time how the microbiome affects how we deal with stress. "This could be quite important," says Dr. Buchanan, in understanding gut microbiota factors, which may enhance vulnerability and resilience to stressors. In the future, such work could form the foundation for the use of prebiotics or probiotics to minimize the psychological consequences of exposure to traumatic events.

Other researchers are also looking at links between schizophrenia and diet. **Deanna L. Kelly, PharmD, BCPP**, Director of the MPRC Treatment Research Program (TRP), a 24-bed inpatient unit. The TRP is a joint program between the MPRC and Spring Grove Hospital Center, and represents a long-standing collaboration that allows for cutting edge research opportunities. Dr. Kelly has been studying the possibility that immune response to gliadin, a protein component of gluten found in wheat, barley and rye, may play a role for some people with schizophrenia. In collaboration with a team from Johns Hopkins, she has shown that about 30 percent of people with schizophrenia have antibodies to gliadin and that higher levels of peripheral and brain inflammation are seen in people with high antigliadin antibodies. Dr. Kelly, who is also a Professor in the Department of Psychiatry, has found improvement in negative symptoms with the removal of gluten from the diet, as seen her recently completed inpatient study, and has ongoing work, including a newly funded R01 confirmatory clinical trial.

Because schizophrenia and other mental disorders are such complex diseases, MPRC researchers have many avenues to pursue. "There are so many potential factors involved in these diseases," says Dr. Buchanan. ***"For that reason, it is an exciting time to be involved in this research."***



CLASS OF 2019



Student Clinician Ceremony

THE PINNING IN DAVIDGE



The annual Student Clinician Ceremony was held in Davidge Hall recently, to formally welcome the third-year medical students to their clinical rotations. As they were just about to start their third year the Class of 2019 gathered to hear inspirational messages from their mentors, pin professionalism pins on each other, and recite the Student Clinician Oath to symbolize their transition from classroom learning to patient care.

In their rotations, students begin seeing patients alongside doctors and residents as they gain experience in a variety of primary care and medical specialties. The Student Clinician's Ceremony aims to address some of the anxiety felt by students entering this transitional period by providing insight and discussing fears and expectations.



"Some of you already know the specialty you want, but please keep an open mind, because you never know, things might change. So have an open mind."

— David Gens, MD, FACS

During the ceremony, students were given professionalism pins to wear on their white coats as a constant reminder of their duty to their patients and their profession and a promise to follow the Charter on Professionalism. **David Gens, MD, FACS**, was chosen by the University of Maryland School of Medicine Gold Humanism Society to be this year's keynote speaker. "You're about to start this fantastic journey that is going to teach you what you're doing in the future," he said. "This is going to help you decide what you want to do. Some of you already know the specialty you want, but please keep an open mind, because you never know, things might change. So have an open mind."

Dr. Gens also offered advice on what to do about the nervousness that comes from taking care of patients for the first time. "Get over it!" he declared. "If you're nervous, patients will know you're nervous. They can read you. Be confident."

E. Albert Reece, MD, PhD, MBA, Vice President for Medical Affairs, University of Maryland, and the John Z. and Akiko K. Bowers Distinguished Professor and Dean, also addressed the students. "During your third year of medical school, there is an emphasis on humanism, as you learn to interact with patients. However, remember that you, too, may be patients someday, and it will be vital to you to keep in mind this perspective when you are counseling and, perhaps, comforting your patients," he told the students. "In order for you to be the very best doctor you can be, you need to see their perspective. That is why it is essential to develop your skills as a clinician until it becomes instinctive. Don't allow the technology that was designed to assist with the quality of patient care to undermine the sanctity of the physician/patient relationship."

The ceremony was followed by two days of clinical skills workshops and small group discussions about professionalism issues.



Camp Open Arms

THE MEANING OF SUMMER



For a child with a congenital or traumatic limb difference, the world can feel like a challenging place — especially in terms of “fitting in” with other children during play activities. Associate Professor of Orthopaedics **Josh Abzug, MD**, understands their feelings all too well. As Deputy Surgeon-in-Chief at the University of Maryland Children’s Hospital (UMCH), he interacts with such children and their parents on a daily basis through UMCH’s Pediatric Hand and Upper Extremity Program, the only dedicated pediatric upper extremity service in the region treating a wide array of birth disorders of the arms and hands. “For a child with a congenital difference of the hands or upper extremity, the ability to move freely and play just like their peers, especially in everyday activities such as sports, is daunting and, quite literally, sometimes out of reach,” he notes.

Dr. Abzug came to realize that the solution to their sense of isolation lay beyond a medical response. In 2015, with the support of UMCH and the University of Maryland School of Medicine, he founded Camp Open Arms, a two-day summer day camp experience, exemplified in spirit by its motto, “Strength, Courage and Determination.” While at the camp’s Northern Baltimore County location, campers aged 4 to 9 participated in a range of activities guided by volunteer counselors, including nature hikes, swimming, games, and creating crafts, all while being surrounded by other children with limb differences. Campers’ parents also were invited to engage in discussions with specialists on new advances in care for their children.

The rousing success of the first Camp Open Arms inspired Dr. Abzug to take the concept forward. In the winter of 2015, he staged a bowling reunion party for the previous summer’s campers and their families. During the following summer of 2016, the main camp schedule was extended to three days (Thursday-Saturday), accommodating twice as many campers as previously.

2017’s Camp Open Arms takes place August 16-19, thanks to generous donors like the Deputies of the Cecil County Sheriff’s Office, who raised \$15,000 for the camp during No-Shave November 2016. The theme this year is Honoring Our First Responders. There will be daily presentations on the various jobs available in the Fire Department, Police Department and Emergency Medical Services, as well as the equipment used by these public servants. There will also be a dedicated obstacle course for each, as well as the usual Camp Open Arms activities — art and music (African dance will be featured this year); hiking; and a new class in cooking. Family Day will take place at the Fire Museum of Maryland in Timonium and will include laser tag, bounce houses, and fire truck rides.

Individuals and organizations who are interested in supporting future sessions of Camp Open Arms should contact the University of Maryland School of Medicine Office of Development at 410-706-8503.



“Camp has become a true passion for those of us who have been a part of it. Seeing the kids interact, listening to them talk to each other and us has shown me without a doubt that medicine goes far beyond any technical skill I have as a surgeon.”

— Josh Abzug, MD



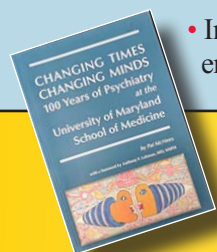
Key MPRC Achievements

Under Dr. Carpenter's directorship, the MPRC transformed into a major center for translational research on one of the most debilitating mental illnesses, schizophrenia:

- The MPRC's first NIH grant under Dr. Carpenter was a clinical study to determine if hemodialysis could cure schizophrenia. Although this approach had been approved for use in Virginia, the MPRC's results showed it did not, which influenced the Maryland legislature to hold off funding for dialysis centers.
- In 1986, the MPRC became one of only two National Institute of Mental Health (NIMH)-designated Clinical Research Centers in the country for the study of schizophrenia. Three years later, in 1989, the MPRC received NIMH funding to establish the Center for Neuroscience Research in Schizophrenia, and with it, the MPRC became the only organized research center in the United States to have both a basic and clinical center for schizophrenia research supported by the NIH.
- In 1987, the MPRC established the Maryland Brain Collection at the behest of Carol Tamminga, MD, a former MPRC faculty member and currently the Lou and Ellen McGinley Distinguished Chair and the McKenzie Chair in Psychiatry at UT Southwestern, and Robert Schwarcz, PhD, Professor in the School of Medicine's Department of Psychiatry and a current MPRC faculty member. The Collection is an invaluable resource for studying the biologic and genetic basis for mental illnesses, and is used by investigators around the world.
- That same year, the MPRC became the founding institution for the International Congress on Schizophrenia Research, a biennial meeting focused on advancing the science and understanding of schizophrenia.
- In 1999, Novartis awarded the MPRC a \$24 million grant to discover new treatments for schizophrenia — the largest grant in the history of the School of Medicine at that time.
- In 2004, the MPRC assumed editorial responsibility for the *Schizophrenia Bulletin* from the NIMH, and subsequently increased the journal's impact factor (from 2.871 in 2005 to 7.575 in 2016) and the journal's rank (from 13th to 8th among 142 psychiatry journals).
- In 2005, the MPRC forged a partnership with the National Institute on Drug Abuse (NIDA) to study substance use disorders that often coincide with mental health disorders.
- In 2010, the MPRC set up a dedicated, NIMH-funded brain research imaging center.
- In 2013, the MPRC received a \$1.2 million grant from the State of Maryland Department of Health and Mental Hygiene to establish the Maryland Early Intervention Program, intended to provide clinical services to people at risk for developing mental disorders or in the earliest stages of an illness, with a specialized program for at-risk youth.
- In 2014, under the direction of Dr. Schwarcz, the MPRC established the Silvio O. Conte Center, a \$10.7 million enterprise dedicated to uncovering the molecular basis of schizophrenia.

MPRC FACULTY
 Buchanan, Robert, MD
Professor/Director
 Carpenter, William, T., Jr. MD
Professor
 Chen, Shuo, PhD
Associate Professor
 Chiappelli, Josh, MD
Assistant Professor
 Du, Xiaoming, PhD
Assistant Professor
 Elmer, Gregory, PhD
Professor
 Gold, James, PhD
Professor
 Hahn, Britta, PhD
Associate Professor
 Hong, Elliott, MD
Professor, Chief
 Kelly, Deanna, PharmD
Professor, Chief
 Kochunov, Peter, PhD
Professor
 Korrapati, Sathyasaikumar, PhD
Research Associate
 Notarangelo, Francesca, PhD
Instructor
 Pocivavsek, Ana, PhD
Assistant Professor
 Rowland, Laura, PhD
Associate Professor
 Schoonover, Frances, MD
Assistant Professor/PT
 Schwarcz, Robert, PhD
Professor, Chief
 Shepard, Paul, PhD
Professor
 Waltz, James, PhD
Associate Professor
 Wehring, Heidi, PharmD
Assistant Professor
 Weiner, Elaine, MD
Assistant Professor
 Wijtenburg, Andrea, PhD
Assistant Professor
 Wu, Hui-Qiu, PhD
Assistant Professor

An excellent review of the history and contributions of the MPRC, as well as the entire Department of Psychiatry, to the School of Medicine's legacy can be found in Pat McNees's book, *Changing Times Changing Minds: 100 Years of Psychiatry at the University of Maryland School of Medicine*.



SOMspirit



A NEW LINE IS BORN



Coming Soon!

Soon the UMSOM will have a full line of apparel for the whole family.

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