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## Focus on Medical Humanism Provides Support and Care for the Caregivers

The rising tide of aging Americans requires an increased emphasis on research and support for the care of elderly patients with chronic diseases. To accommodate this need, NewYork-Presbyterian/Weill Cornell Medical Center is championing new models of care for these individuals, as well as ways to palliate both patients and the health care professionals who care for them. “Developing programs to better understand how we translate knowledge into care is an essential ingredient of why we exist,” said Ronald Adelman, MD, Co-chief, Division of Geriatrics and Palliative Medicine, NewYork-Presbyterian/Weill Cornell.

One such development is the Liz Claiborne Center for Humanism in Medicine (LCCHM), which was established in 2011 to provide clinicians and trainees with a program that provides balance and compassion in patient care. “Our mission is to enhance the knowledge, awareness, attitudes, and skills around the issues of palliative care and to raise the profile of medical humanism throughout our institution,” said Randi Diamond, MD, Director of the LCCHM, NewYork-Presbyterian/Weill Cornell.

“Medical humanism is about treating our patients as people, understanding the experiences of patients who are dealing with serious illnesses, and dealing with that experience outside of just their disease. The importance of humanism in our practice is for how we interact and communicate with our patients, and also for satisfaction for health care professionals,” said Dr. Diamond. “It’s one way of helping to address the potential stresses we face in dealing with patients with serious illnesses, the difficult personal and family issues that often accompany such illnesses, and our own reactions to becoming a part of their stories.”

Dr. Adelman, who also serves as Executive Director of the LCCHM, agrees with that sentiment and thinks the program provides clinicians with the support necessary to help prevent burn-out. “People get a chance to reflect on what’s important to them and in some ways self-palliate. It is important that we look to help health care professionals,” said Dr. Adelman. “We are trying to



The LCCHM celebrates the premiere issue of the *ASCENSUS WCMC Journal of Humanities*.

give them support and help them process the often intense lives they lead.”

“We have chosen to utilize the humanities as one way of helping medical professionals and trainees to understand the illness experience and to reflect on the work we do and the experiences we have in interacting with our patients,” said Dr. Diamond. The LCCHM addresses the needs of caregivers by holding a series of monthly educational meetings known as the “Liz Rounds.” The first of these sessions, an interdisciplinary narrative medicine group, offers a chance for health professionals to reflect on their experience through narrative medicine. According to Dr. Diamond, narrative medicine encourages physicians, nurses, social workers, and members of other disciplines to consider how patients’ stories affect them (and vice versa), and how to listen more closely to what their patients are telling them. During these sessions, medical professionals read literary pieces together, write in response to the readings, and then share these responses. They aim to reflect on how what they have learned might help them improve as medical professionals.

The second monthly meeting is an interdisciplinary palliative care case conference. Teams throughout the hospital are invited to present challenging patient cases and then open them up for

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## Genetics Research Across Medical Specialties Now Yielding Secrets and Improving the Practice of Medicine

*The decoding of the human genome and subsequent concerted efforts by physician-scientists to decipher the relationships between specific genes and the diseases they influence have already yielded tremendous advancements in medicine. This work is fostering important strides in understanding and caring for people with diseases affecting all health systems, and much of the laboratory and translational studies, as well as clinical research, are being done at Columbia University College of Physicians and Surgeons, Weill Cornell Medical College, and NewYork-Presbyterian Hospital.*

**R**esearch abounds in every field. The field of geriatrics, for instance, was intrigued by a study led by Columbia University researcher Lawrence S. Honig, MD, PhD, Professor of Clinical Neurology in the Taub Institute, an Alzheimer's disease research center funded by the National Institute on Aging.<sup>1</sup> Dr. Honig's research found that telomere length relates both to the likelihood of the patient developing dementia and his or her overall remaining life span. This research could lead to the use of telomere length as an accurate biomarker of aging in people, as well as an early warning sign for future dementia.

The researchers examined telomere lengths from DNA samples of white blood cells obtained from 1,983 individuals aged 66 to 101 years. These patients were followed for an average of 8 years. After adjusting for age and education, among other factors, researchers found that those individuals with shorter telomeres had higher rates of both dementia and mortality. The researchers must now examine whether shorter telomeres directly increase the risk for dementia and death, or if the telomeres are being influenced by some other factor that is both shortening telomere length while at the same time increasing dementia and mortality risk.

Within psychiatry, schizophrenia has long been known to be genetic in origin, but the networks of genes involved in this disability have not been well characterized. A recent paper published in *Nature Neuroscience* found a link between schizophrenia and autism.<sup>2</sup> Columbia researchers examined a collection of mutations associated with

schizophrenia and found occult interrelations among genes that had previously been thought to be unrelated. The researchers found that most of the mutated schizophrenia genes were related to 2 main gene networks, which together affect key processes, including axon guidance, synapse function, neuron mobility, and chromosomal modification.

### Dr. Lawrence S. Honig's research could lead to the use of telomere length as an accurate biomarker of aging in people, as well as an early warning sign for future dementia.

The research, which was led by Dennis Vitkup, PhD, Associate Professor in the Department of Biomedical Informatics at Columbia's Center for Computational Biology and Bioinformatics, also looked at genes mutated in patients with autism and found the similarities were surprisingly robust. Noting that the genetic networks for autism and schizophrenia are closely intertwined, the researchers postulated that many other psychiatric disorders also might share the same genetic networks and interrelated molecular processes.

Significant research on the genetics behind psychological illness is being undertaken at Weill Cornell Medical College. As just one example, Francis S.Y. Lee, MD, PhD, Professor and Vice Chair for Research in the Department of Psychiatry and Professor in the Department of Pharmacology, who is also an Attending Psychiatrist at the Hospital,

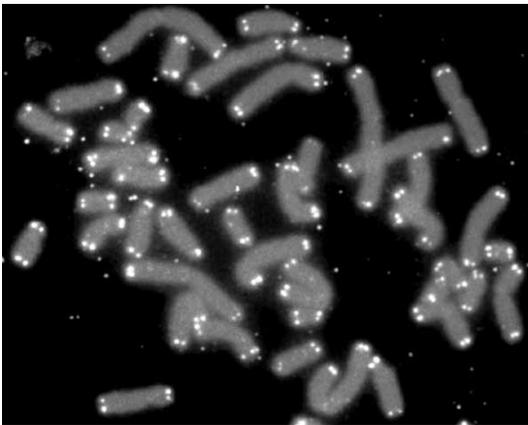
directs efforts focused on using genetic models to define the role of growth factors, such as brain-derived neurotrophic factor, and their affect on the pathophysiology and treatment of affective disorders.<sup>3</sup>

Pulmonology has begun to explore the use of gene-based vaccines targeted against pulmonary infectious organisms. At Weill Cornell Medical College, a team led by Stefan Worgall, MD, PhD, Division Chief of the Pediatrics Pulmonology, Allergy and Immunology Division, has developed capsid-modified adenovirus vectors<sup>4,5</sup> to heighten immune responses from genetic vaccines against both *Pseudomonas aeruginosa* and respiratory syncytial virus.

In research on the pathogenesis of cystic fibrosis, Dr. Worgall is investigating the interaction of alveolar macrophages with *P. aeruginosa*.

Nephrologists and psychiatrists, meanwhile, were interested in the results of a large multinational study in which Columbia University played an important role.<sup>6</sup> The study, led by Ali Gharavi, MD, Associate Director of the Division of Nephrology at NewYork-Presbyterian/Columbia, is the first to link congenital kidney disease, which together with urinary tract defects accounts for about one-fourth of all birth defects in the United States, with neurodevelopmental disorders. The study found that 10% of children born with kidney defects have genomic alterations that have been linked with neurodevelopmental delay and mental illness. The finding is important because it paves the way for identifying subgroups

of patients with kidney defects whose treatment will be guided by specific genetic information. The finding also alerts physicians who care for children with congenital kidney disorders that there may be a genetic basis for a neurodevelopmental delay or a mental illness that will occur later in life.



Telomere length relates to likelihood of developing dementia and overall life span.

A co-author of this study was Wendy Chung, MD, PhD, Director of Clinical Genetics at NewYork-Presbyterian Morgan Stanley Children's Hospital. Her research interests span multiple areas, including the molecular genetics of obesity and diabetes; congenital heart disease; the genetic foundations of cardiomyopathies, arrhythmias, long QT syndrome, and pulmonary hypertension; congenital diaphragmatic hernias; mental retardation; inherited metabolic conditions; and susceptibility to breast and pancreatic cancers. She is Director of the Pediatric Heart Network Genetic Core, the Pediatric Neuromuscular Network Molecular Core, the New York Obesity Center Molecular Genetics Core, and the Diabetes and Endocrine Research Center Molecular Genetics Core. She also serves as Director of the Clinical Cancer Genetics Program and the Fellowship Program in Cytogenetics and Molecular Genetics.

Perhaps no area of medicine has been as affected by research into the genetic foundations of disease as much as oncology. Examples of genetic discoveries

in oncology are plentiful. An important recent discovery is the revelation that certain cases of glioblastoma are caused by the fusion of 2 genes.<sup>7</sup> Researchers, led by Antonio Iavarone, MD, Professor of Pathology and Neurology at Columbia's Institute for Cancer Genetics at the Herbert Irving

Comprehensive Cancer Center at NewYork-Presbyterian/Columbia, conducted genetic analyses of patients with glioblastomas, searching for evidence of gene fusions. They found them, with the most common being fusions involving the fibroblast growth factor receptor (*FGFR1* or *FGFR3*) and transforming acidic coiled-coil (*TACC1* or *TACC3*) genes. The protein produced by the fusion of *FGFR-TACC* disrupts the mitotic spindle, causing aneuploidy, and from there tumorigenesis. The finding is important because it provides researchers with a protein target for pharmaceutical research for a cancer that is especially difficult to treat.

Gastroenterologists have been interested in recent work performed by Manish Shah, MD, Director of Gastrointestinal Oncology at Weill Cornell Medical College, who with his colleagues elucidated the heterogeneity of gastric cancer, dividing it into 3 types.<sup>8</sup> The first type, noncardia gastric cancer, is linked to environmental factors such as high dietary salt, tobacco use, and increasing age; clinical factors such as *Helicobacter pylori* infection and use of nonsteroidal anti-inflammatory drugs; and genetic factors including immune regulatory single-nucleotide polymorphisms. A second type, diffuse gastric cancer, is associated with *CDH1* mutation and family history and has no known environmental or clinical factors. The third type, proximal gastric cancer, is caused by tobacco and alcohol use; has no known genetic link; and is associated with obesity, high body mass index, and gastroesophageal reflux disease.

Dr. Shah's work has alerted those performing drug clinical trials that testing should be based on these subtypes and not on gastric cancer as a whole. Because of the genetic differences in subtypes, the effects of drug therapy may vary significantly between groups.

The field of clinical genetics is rapidly changing and improving the practice of medicine. As the field of genetics continues to grow so too the physician-scientists at Columbia University College of Physicians and Surgeons, Weill Cornell Medical College, and NewYork-Presbyterian Hospital will continue to be at the forefront of integrating genetics into all specialties.

## References

1. Honig LS, Kang MS, Schupf N, et al. Association of shorter leukocyte telomere repeat length with dementia and mortality. *Arch Neurol.* 2012;69(10):1332-1339.
2. Gilman SR, Chang J, Xu B, et al. Diverse types of genetic variation converge on functional gene networks involved in schizophrenia. *Nat Neurosci.* 2012;15(12):1723-1728.
3. Soliman F, Glatt CE, Bath KG, et al. A genetic variant BDNF polymorphism alters extinction learning in both mouse and human. *Science.* 2010;327(5967):863-866.
4. Halbreiner M, Pagovich O, Finnin E, et al. Disrupted adenovirus-based vaccines against small addictive molecules circumvent anti-adenovirus immunity. *Human Gene Ther.* 2012 Nov 9. [Epub ahead of print]
5. Krause A, Worgall S. Delivery of antigens by viral vectors for vaccination. *Ther Deliv.* 2011;2(1):51-70.
6. Sanna-Cherchi S, Kiryluk K, Burgess KE, et al. Copy-number disorders are a common cause of congenital kidney malformations. *Am J Hum Genetics.* 2012;91(6):987-997.
7. Singh D, Chan JM, Zoppoli P, et al. Transforming fusions of FGFR and TACC genes in human glioblastoma. *Science.* 2012;337(6099):1231-1235.
8. Shah MA, Kelsen DP. Gastric cancer: a primer on the epidemiology and biology of the disease and an overview of the medical management of advanced disease. *J Natl Compr Canc Netw.* 2010;8(4):437-447.



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# ADVANCES IN GERIATRICS

## Important news from NewYork-Presbyterian Geriatrics.

Current research projects, clinical trials, and advances in the diagnosis and treatment of geriatric patients

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discussion. Participants develop constructive ways to solve any issues that arose to help advance health care practice methodology. The goal of these conferences is to build a supportive network of professionals among diverse disciplines, with a focus on developing new solutions to enhance communication between the health professional and the patient.

“This is a well-attended conference that focuses on giving everyone present a voice in discussing issues that may be helpful for that particular patient or useful in caring for future patients,” said Dr. Diamond.

The third format of the Liz Rounds is a series of medical humanities lectures and workshops. These sessions are intended to build interpersonal and communication skills, foster ethical and humanistic patient care, and provide a different lens through which to view patients. Speakers often use literature, visual art, film, history, music, and other disciplines to help address issues related to patient care.

The LCCHM aims to create and improve clinical educational activities. For example, the Center has introduced the idea and practice of reflection into the Palliative Care Educational Unit for interns. It will be sponsoring an upcoming faculty development workshop on

teaching reflective practice. Additionally, the LCCHM is currently developing educational videos to assist in training practicing physicians, medical residents, medical students, and trainees from other health disciplines. Each video captures actual health professional–patient encounters in palliative care. Dr. Adelman said that this is a critical aspect of training for younger health care professionals. “Seeing these films can be extraordinarily helpful by directly observing communication strategies that work—or may not work—and providing a powerful way to advance communication skills among trainees,” said Dr. Adelman.

The LCCHM also collaborates with the Music and Medicine Initiative at NewYork-Presbyterian/Weill Cornell. The program, comprised of medical students looking to continue their passion for music, brings live concerts to inpatient units to help palliate patients and their families.

During a focus group at LCCHM, medical students discussed their desire to create and publish a medical humanities journal. The result was the *ASCENSUS WCMC Journal of Humanities*, which provides medical trainees with a forum to highlight their personal reflections on patient care through written and artistic projects.

According to Dr. Diamond, these entries speak to the artistry and humanism in the hospital community. The plan is for *ASCENSUS* to become a forum for a wider group of contributors within the medical center community.

Dr. Diamond has been delighted and amazed by the success of the LCCHM. As the Center continues to hold and promote events each month, they have seen an increased interest in the integration of palliative care and reflection into other areas that are required during medical training.

“By educating our present and future health care professionals, not only are we helping to extend the principles of palliative care into patient care—which involves a focus on symptom relief in the face of serious illness, improved communication, the importance of exploring each patient’s goals for care, and individualizing each patient’s illness and healing experience—but we also are encouraging the use of self-reflection as a means of professional development,” Dr. Diamond said.

This reciprocal paradigm of caring for patients and the caregivers themselves is the Center’s primary mission. “It is really about training people of all disciplines to reflect on the work we do and to diligently process the work of caring,” said Dr. Adelman.