May 7th, 2007

This is an abbreviated version of Genomics and Health Weekly Update, published by the National Office of Public Health Genomics at CDC. View using the HTML option in Groupwise. The full the unabridged version, is available online at:

**Spotlight:**

National Stroke Month
Stroke is the third leading cause of death and a major cause of disability in the United States. Read more.

National Mental Health Month
Mental disorders are real, disabling health conditions that have an immense impact on individuals and families in the United States. Read more.

**Aging**

Genetics of Healthy Aging in Europe: The EU-Integrated Project GEHA (GEnetics of Healthy Aging)
Franceschi C, et al.
Ann N Y Acad Sci 2007 Apr;1100:21-45

**Cancer**

“Biomarker discovery bodes well for better cancer diagnostics”
(May 2) News-Medical.Net reports, “While new findings from Ohio State University scientists suggest a genetic marker that could help distinguish between chronic pancreatitis and pancreatic cancer and gauge who will do well with cancer treatment, a pharmacologist at the Kimmel Cancer Center at Jefferson in Philadelphia sees the discovery as much more.”

“Gene discovery may improve pancreatic cancer diagnosis, treatment”
(May 1) Health Scout reports, “Scientists say they can use small bits of genetic material called microRNA to spot key differences between chronic pancreatitis and pancreatic cancer, aiding in earlier diagnosis for the lethal malignancy.”

“Lung cancer risk cut by gene, experts claim”
(May 1) Sky News reports, “Scientists are a step closer to finding out why some people get cancer.”

“Genetic differences may explain why many Asian women who never smoked develop lung cancer”
(Apr 29) News-Medical.Net reports, “Analysis of three genetic mechanisms that cause
non-small cell lung cancer might explain why East Asians respond better than other ethnic groups to a certain type of chemotherapy, a team led by UT Southwestern Medical Center researchers has found.

“New hereditary breast cancer gene discovered” (Apr 29) Medical NewsToday reports, “A new hereditary breast cancer gene has been discovered by scientists at the Lundberg Laboratory for Cancer Research and the Plastic Surgery Clinic at the Sahlgrenska Academy in Sweden.”

An international initiative to identify genetic modifiers of cancer risk in BRCA1 and BRCA2 mutation carriers: the Consortium of Investigators of Modifiers of BRCA1 and BRCA2 (CIMBA)
Breast Cancer Res 2007 Apr;9(2):104

Hereditary factors in multiple primary malignancies associated with lung cancer
Haraguchi S, et al.

A risk model for prediction of lung cancer
Spitz MR, et al.
J Natl Cancer Inst 2007 May;99(9):715-26

Surveillance for familial breast cancer: Differences in outcome according to BRCA mutation status
Moller P, et al.
Int J Cancer 2007 Apr

Cardiovascular, Diabetes, Hypertension, Stroke, and Related Conditions

“More type 2 diabetes genes discovered” (Apr 27) Medical NewsToday reports, “Several teams of scientists this week report discovering more genes linked to Type 2 Diabetes and describe the achievement as bringing science closer to understanding the genetics of the origins and progress of this modern disease.”

“Researchers find clear genetic risk factors for type 2 diabetes” (Apr 29) News-Medical.Net reports, “Scientists from the Broad Institute of Harvard and MIT, Lund University and Novartis have announced the discovery of three unsuspected regions of human DNA that contain clear genetic risk factors for type 2 diabetes, and another that is associated with elevated blood triglycerides.”

Genetics of Ischaemic Stroke among Persons of Non-European Descent: A Meta-Analysis of Eight Genes Involving approximately 32,500 Individuals
Ariyaratnam R, et al.  

**Endocrine System**

**Chronic pancreatitis: challenges and advances in pathogenesis, genetics, diagnosis, and therapy**  
Witt H, et al.  
Gastroenterology 2007 Apr;132(4):1557-73

**Ethical, Legal, and Social Issues**

“Students consider impact of genetics”  
(Apr 30) Rocky Mount Telegram reports, “After weeks of studying the chemical aspects of DNA, Rocky Mount High School students, joined by researchers from the University of North Carolina-Chapel Hill, debated the legal, ethical and societal implications of the body's blueprint.”

**Racialized genetics and the study of complex diseases: the thrifty genotype revisited**  
Paradies YC, et al.  

**Israeli nurses and genetic information disclosure**  
Barnoy S & Tabak N  
Nurs Ethics 2007 May;14(3):280-94

**Privacy and equality in diagnostic genetic testing**  
Nyrhinen T, et al.  
Nurs Ethics 2007 May;14(3):295-308

**Genomic Tools**

“New technology detects functional genes”  
(May 1) The Post Chronicle reports, “The GeoChip created by U.S. scientists is described as a genomics-based tool that can detect functional genes and processes in a microbial community.”

“New understanding of how histone and DNA methylation communicate”  
(May 1) News-Medical.Net reports, “In the May 15th issue of G&D, Dr. Michael Carey (UCLA's Jonsson Comprehensive Cancer Center) and colleagues lend new insight into the mechanism of epigenetic silencing of euchromatic genes.”
Immune System (including Autoimmunity)

“Inflammatory system genes linked to cognitive decline after heart surgery” (May 2) Science Daily reports, “Variants of two genes involved in the inflammatory system appear to protect patients from suffering a decline in mental function following heart surgery.”

“Rheumatoid arthritis and the impact of genetic factors on mortality” (Apr 30) Science Daily reports, “A chronic autoimmune disease, rheumatoid arthritis (RA) is marked by inflammation that takes a progressive toll on not only the joints, but also various organs and the whole body.”

“Genes could boost arthritis patients' death risk” (Apr 27) Medline Plus reports, “Rheumatoid arthritis patients with certain genetic traits may be at increased risk of early death from heart disease or cancer, British researchers report.”

Is FCRL3 a New General Autoimmunity Gene?
Chistiakov DA & Chistiakov AP
Hum Immunol 2007 May;68(5):375-83

Estimating the odds ratios of Crohn disease for the main CARD15/NOD2 mutations using a conditional maximum likelihood method in pedigrees collected via affected family members
Pascoe L, et al.
Eur J Hum Genet 2007 Apr

Mental Health (including Addiction)

Effects of dopamine D2 receptor gene polymorphisms on smoking cessation: abstinence and withdrawal symptoms
Munafo MR & Johnstone EC
Pharmacogenomics 2007 May;8(5):513-7

Nervous System (including Movement Disorders)

“Alzheimer's, Parkinson's, type 2 diabetes similar at molecular level” (Apr 30) EurekAlert! reports, “Alzheimer's disease, Parkinson's disease, type 2 diabetes, the human version of mad cow disease, and other degenerative diseases are more closely related at the molecular level than scientists realized, a team reports this week in an advanced online publication of the journal Nature.”
Pharmacogenomics

“Scientists find new agent to fight genetic disorders -- Zorro-Locked Nucleic Acid” (Apr 30) EurekAlert! reports, “A study to appear in the June 2007 issue of The FASEB Journal describes a new agent, called "Zorro-LNA," which has the potential to stop genetic disorders in their tracks.”

“Commercialization of novel ud gene-repair technology” (Apr 29) News-Medical.Net reports, “OrphageniX Inc., a new biotechnology company founded by University of Delaware researchers, has been established in Wilmington to develop and commercialize UD-patented technologies for repairing genes that cause rare, hereditary diseases such as sickle cell anemia and spinal muscular atrophy.”

Genetics of inflammation in age-related atherosclerosis: its relevance to pharmacogenomics
Grimaldi MP, et al.
Ann N Y Acad Sci 2007 Apr;1100:123-31

Application of pharmacogenomic strategies to the study of drug-induced birth defects
Leeder JS & Mitchell AA

How can the emerging patient-centric health records lower costs in pharmacogenomics?
Shabo Shvo A
Pharmacogenomics 2007 May;8(5):507-11

Pharmacogenetics and stomach cancer: an update
Toffoli G & Cecchin E
Pharmacogenomics 2007 May;8(5):497-505

Identifying the genotype behind the phenotype: a role model found in VKORC1 and its association with warfarin dosing
Crawford DC, et al.
Pharmacogenomics 2007 May;8(5):487-96

What do dopamine transporter and catechol-o-methyltransferase tell us about attention deficit-hyperactivity disorder? Pharmacogenomic implications
Levy F
Prenatal and Perinatal Health

Genetics of congenital diaphragmatic hernia
Scott DA
Semin Pediatr Surg 2007 May;16(2):88-93

Toward understanding the genetic basis of neural tube defects
Kibar Z, et al.

Genes, maternal smoking, and the offspring brain and body during adolescence: Design of the Saguenay Youth Study
Pausova Z, et al.
Hum Brain Mapp 2007 Apr

Recent advances in newborn screening
Wilcken B
J Inherit Metab Dis 2007 Apr;30(2):129-33

Newborn screening for cystic fibrosis
Rock MJ

A Comparative Study of Five Technologically Diverse CFTR Testing Platforms
Johnson MA, et al.
J Mol Diagn 2007 Apr

Respiratory System

Cystic Fibrosis: A Review of Epidemiology and Pathobiology
Strausbaugh SD & Davis PB

Skeletal System

“Researchers discover first gene associated with idiopathic scoliosis”
(Apr 27) Medical NewsToday reports, “Researchers at Texas Scottish Rite Hospital for Children (TSRHC), one of the nation's leading pediatric centers for research and the treatment of orthopaedic conditions, have identified the first gene -- CHD7 -- associated with idiopathic scoliosis (I.S.), the most common spinal deformity in children.”

Let’s Go Surfing: The Minnesota Gene Pool Weblog