NCTR Participates in FDA’s 9th Annual Science Forum

FDA Science: Protecting the Public Health was the theme for the 2003 FDA Science Forum held April 24-25, 2003, in Washington D.C. The Science Forum is FDA’s key scientific meeting to communicate and promote emerging issues related to scientific development and associated regulatory concerns. It is designed to bring FDA scientists together with representatives from other components of DHHS, industry, academia, government agencies, consumer and patient advocacy groups, Congress, and international constituents. The eight presentations (listed below) by NCTR scientists reflect the cutting-edge research being conducted at the NCTR.

- Assessment of Neurotoxicity: Application of Neuroimaging Techniques
- Development of a Toxicoinformatics Integrated System at NCTR
- Effects of Exposure to Estrogens at Various Life Stages on Reproductive Endpoints and Cancer
- Evaluating Genotoxic Risk Using Tk Knockout Mouse Model
- Subpopulation Based Model for Cryptosporidium Outbreaks
- Unified Approach for Cancer and Non-cancer Risk Assessment
- Cancer Susceptibility, Early Detection
- Introduction to Bioinformatics

Employees Recognized for Excellence

Celebrating Excellence was the theme of NCTR’s FDA Honor Awards Ceremony held May 30, 2003, to honor 73 NCTR employees and two consultants. Pete Attwood, former NCTR Deputy Director for Management, spoke on “Continuing Excellence in the Midst of Uncertain Change.”

The Jefferson Laboratories Award Ceremony celebrated outstanding service by honoring approximately 160 NCTR and ARL (Arkansas Regional Laboratory) employees on June 13, 2003. The Directors, Dan Casciano Ph.D. (NCTR) and David Smith Ph.D. (ARL), presented 29 employees with the Career Service Recognition Award representing 560 years of government service.

NCTR and ARL Co-hosts Counter-Terrorism Workshop

On April 2-3, 2003, Arkansas Regional Laboratory (ARL) and NCTR co-hosted a workshop for state laboratory representatives from fifteen states interested in learning about FDA laboratory capabilities related to counter-terrorism activities. Topics discussed included the NCTR BioSafety Level 3 (BSL-3) laboratory upgrade, due to be completed in early 2004, that will provide a laboratory capable of high containment biological research on bioterror agents by NCTR and ARL scientists, and surge capacity within the state of Arkansas in case of a bioterrorist attack; and the scientific expertise, technology and instrumentation available within the Jefferson Laboratories to continue to develop rapid methods for identifying biological warfare agents.

The FDA Southwest Regional Director, Dennis Baker, noted in a letter to NCTR Director Daniel Casciano Ph.D. “We genuinely are appreciative of the assistance of your staff...They truly made a difference in making this workshop a success and a good experience for our guests.”

Center for Phototoxicology

Did you know that one out of seven people will develop some form of cancer in their lifetime and that the incidence of the most common cancer, skin cancer, is increasing each year and that the most serious form of skin cancer (melanoma) is increasing by 3% a year?

NCTR is home to only one of two phototoxicology laboratories in the world with the capacity to expose large numbers of animals to simulated solar light. Research in the Center for Phototoxicology is focused on addressing the potentially hazardous effects of sunlight with products used by the public and is developing animal models that will contribute to more accurate evaluation of the risk of skin cancer in humans.

NCTR’s simulated solar light: capable of simulating most any light to which humans are exposed to help determine the impact of this light on the toxicity of drugs and chemicals.
S
aving energy, and thus money, is a
goal of NCTR and the Department
of Energy’s Federal Energy
Management Program (FEMP). A team
consisting of Ed Hensley, Ted Kozak,
Marcia Park, Rudy Rieple, and Priscella
Sullivan did just that. By working with
Entergy Arkansas, Inc., they retrofitted
NCTR facilities with high efficiency
lighting and installed additional power
factor correction capacitors. The Depart-
ment of Energy and the Department of
Health and Human Services recognized
this achievement and awarded them the
prestigious Energy and Water Manage-
ment Awards.

Due to the continuous success in
energy saving by this team and many
others, NCTR has been selected as the
Department of Energy’s FEMP 2004
Greening America Showcase, an honor
reserved for outstanding and exemplary
leaders in energy, water and renewable
resource saving initiatives.

Recent Publications
NCTR conducts research designed to protect the public’s health. Results from some of these research projects have recently been accepted
for publication in nationally recognized scientific journals.

Beger, R., Using Simulated 2D 13C-13C NMR Spectral Data to Model a Diverse Set of Estrogens, J. Medicinal Chemistry

Binienda, Z.K., Neuroprotective Effects of L-carnitine in Induced Mitochondrial Dysfunction, Annals of the New York Academy of Sciences

Buzatu, D.A., Predicting Toxic Equivalence Factors from 13C NMR Spectra for Dioxins, Furans and PCBs Using Linear and Non-Linear Pattern Recognition Methods, Environmental Chemistry & Toxicology

Delongchamp, R.R., A Statistical Approach in Using cDNA Array Analysis to Finding Modest, 2-fold or Less, Changes in Gene Expression in Several Brain Regions After Neurotoxic Insult, Annals of the New York Academy of Sciences

 Dobrovolsky, V.N., Pms2-deficiency Results in Increased Mutation in the Hprt Gene but not the TK Gene of TK+/- Transgenic Mice, Mutagenesis

Guozheng, G., Radiation-Inducible Genes are Modulated by Manganese-Containing Superoxide Dismutase, Journal of Molecular and Cellular Biology

Hope, B.T., Acute Administration of Cocaine Regulates the Phosphorylation of Serine -19, -31, and -40 of Tyrosine Hydroxylase, Journal of Neurochemistry

Hsu, H., Comparison of Methods for Estimating the Number of True Null Hypotheses in Multiplicity Testing, J. of Biopharmaceutical Statistics

Knapp, G.W., Quantitation of Aberrant Interlocus T-Cell Receptor Rearrangements in Mouse Thymocytes and The Effect of Herbicide 2,4-Dichlorophenoxyacetic Acid, Environmental and Molecular Mutagenesis

Mannila, M., Supercritical Fluid Extraction of Bioactive Components from St. John’s Wort (Hypericum perforatum L.) and Ginkgo Biloba, Separation and Processes Using Supercritical Carbon by Dioxide

Moore, M., Trp 53 Sequence Analysis of L5178Y Cell Line Derivatives, Environmental and Molecular Mutagenesis

Naaz, A., The Soy Isoflavone Genistein Inhibits Post-ovariectomy Fat Increases in Mice, Endocrinology

Paule, M.G., Chronic Exposure to NMDA Receptor and Sodium Channel Blockers During Development in Monkeys and Rats: Long-term Effects on Cognitive Function, Annals of the New York Academy of Sciences

Ramirez, L., Effects of S-adenosyl-L-methionine on the Micronuclear Frequency Induced by Sodium Arsinite in Cultured Human Lymphocytes, Mutation Research

Sanmartina, A.D., Protective Effects of the Antioxidant Selenium on Quinolinic Acid-induced Neurotoxicity in Rats: In vitro and in vivo Studies, Journal of Neurochemistry

Scallet, A.C., Pathophysiology of Transmissible Spongiform Encephalopathies, Current Medicinal Chemistry - Immunology, Endocrine and Metabolic Agents

Scallet, A.C., 3-Nitropropionic Acid Inhibition of Succinate Dehydrogenase (Complex II) Activity in Cultured Chinese Hamster Ovary cells: Antagonism by l-carnitine, Annals of the New York Academy of Sciences

Slotkin, T.A., Long-lasting CNS Effects of a Short-term Chemical Knockout of Omitrine Decarboxylase During Development: Nicotine Cholinergic Receptor Upregulation and Subtle Macromolecular Changes in Adulthood, Brain Research

Twaddle, N.C., Determination using LC-ES/MS/MS of Ethynylestradiol Serum Pharmacokinetics in Adult Sprague-Dawley Rats, J. Chrom. B

Walker, J.D., QSARs for Endocrine Disruption Priority Setting Database 2: The Integrated 4-Phase Model, QSAR Comb. Science

Ye, X., Identification and Ectection of Transmissible Spongiform Encephalopathies, Current Medicinal Chemistry - Immunology, Endocrine and Metabolic Agents

On-Line Research Information
Regulatory Research Perspectives: Impact on Public Health, an on-line newsletter that provides a vehicle for FDA scientists to
communicate important scientific information, and NCTR’s FY 2002-2003 Research Accomplishments and Plans are available from

CONTACT INFORMATION:
The NCTR Quarter Page is published four times a year by the Division of Planning at the National Center for Toxicological Research. FOR MORE INFORMATION ABOUT NCTR CONTACT DR. DAN CASCIANO, NCTR DIRECTOR, AT DCASCIANO@NCTR.FDA.GOV OR [870] 543-7517.

DHHS/FDA/NCTR
3900 NCTR Drive
Jefferson, AR 72079