CIMD Receives Program Project Grant; Largest AMC Grant Ever
$10.2 Million from the NIH to Develop Vaccine Against Bio-Terror Threat

Albany Medical College has received a five-year, $10.2 million grant from the National Institutes of Health (NIH). As the largest single research grant ever awarded to the College, it will fund ongoing biodefense research targeting the bacterium that causes tularemia, a potentially deadly disease that could become a dangerous bioterror weapon and for which there is no vaccine.

Principal investigator, Dennis W. Metzger, Ph.D., Professor, Theobald Smith Alumni Chair, and Director of the Center for Immunology & Microbial Disease (CIMD), says important strides have been made in Albany Medical College’s laboratories toward developing a vaccine. “We have successfully laid the scientific groundwork that will allow us to launch an interdisciplinary research effort to develop a vaccine that can effectively protect against respiratory tularemia,” said Dr. Metzger.

Dr. Metzger said respiratory tularemia is considered a Category A (the highest) bio-threat by the NIH’s National Institute of Allergy and Infectious Diseases because a very small number of bacteria, 10 to 15 organisms, can be fatal, and can be disseminated fairly easily as an aerosol. During the Cold War stockpiles of the bacterium were kept by both the U.S. and the Soviet Union.

Tularemia bacterium exists naturally in soil and water, and can be transmitted to humans via rodents (earning the nickname “rabbit fever”). However this non-airborne form of tularemia is not life-threatening and can be treated successfully with antibiotics. Tularemia research has been conducted at Albany Med since 2002, supported largely by NIH grants totaling approximately $17.6 million. In addition to focusing on finding a vaccine, researchers have been engaged in projects searching for treatments.

According to Vincent Verdile, M.D., Dean of Albany Medical College and Executive Vice President for Health Affairs at Albany Medical Center, “We have achieved important milestones in this area, including development of a potential broad spectrum, intra-nasal treatment for pulmonary tularemia. In addition, Albany Med has taken a leadership position in the field by organizing an annual tularemia conference attended by experts in tularemia from around the world and supported by NIH funding.”

Along with Dr. Metzger, CIMD faculty members involved in the tularemia research program are James R. Drake, Ph.D.; Edmund J. Gosselin, Ph.D.; Guangchun Bai, Ph.D.; Jonathan A. Harton, Ph.D.; Karsten R.O. Hazlett, Ph.D.; and Timothy J. Sellati, Ph.D.

CIMD Welcomes Two New Faculty Members

William O’Connor, Jr. Ph.D., Assistant Professor, joined CIMD on May 1, 2012. Bill came from Yale University and his research is focused on cellular and molecular immunology; regulatory mechanisms governing inflammation and immunity at the mucosa.

Lei Jin, Ph.D., Assistant Professor, joined CIMD on August 1, 2012. Lei came from University of Colorado at Denver and his research is focused on STING-mediated host defense and adjuvant activity.
Drs. Metzger and Drake Appointed to Editorial Board

Dennis W. Metzger, Ph.D., accepted an invitation to serve a two-year appointment as a Section Editor for The Journal of Immunology which was ratified by the Publications Committee and was effective July 1, 2012. Section Editors play a critical role in the manuscript review process. They are selected based on past contributions to this journal as highly responsible, thorough, and objective reviewers, as well as their expertise in their areas of investigation.

James R. Drake, Ph.D., has been invited to serve as an Associate Editor in recognition of his outstanding performance as a knowledgeable, fair and prompt referee. His two-year appointment was effective June 1, 2012.

CIMD Faculty Receive Grants

Kouacou V. Konan, Ph.D., has received a $434,500, 2-year Exploratory/Development Grant the National Institutes of Health, National Institute of Allergy and Infectious Diseases, in support of his research entitled, “Nonstructural 4B Protein and Hepatitis C Virus Protection.”

Thomas D. Friedrich, Ph.D., has received a $437,399, 2-year Exploratory/Development Grant from the National Institutes of Health, National Institute of Allergy and Infectious Diseases, in support of his research entitled, “The DNA Damage Response as a Therapeutic Target in BK Virus Nephropathy.” David J. Conti, M.D., F.A.C.S., Director of Organ Transplantation at Albany Medical Center and Professor of Surgery at Albany Medical College is Co-Investigator on this grant.

James R. Drake, Ph.D., has received a $434,500, 4-year Exploratory/Development Grant from the National Institutes of Health, National Institute of Allergy and Infectious Diseases, in support of his research entitled, “Characterization of the MHC Class II Peptide Loading Complex.”

Guangchun Bai, M.D., Ph.D., has received a $308,000, 4-year Scientist Development Grant from the American Heart Association, in support of his research entitled, “Interaction Between TB Bacilli and Host via Cyclic Nucleotides.”

Dana R. Crawford, Ph.D., has received a $200,174, 5-year subcontract from the National Institute of Health, National Cancer Institute, in support of his research entitled, “Alfaxtoxin B1 Hepatocarcinogenesis in GSTA3 Knockout Mice.” (Principal Investigator is Dr. Stewart Sell - NYSDOH/Wadsworth Center)

Degrees Awarded

Bhuvana Katkere, M.D., O.O., graduate student, successfully defended her Ph.D. thesis entitled, “Molecular Requisite for B Cell Receptor Ubiquitination,” July 26, 2012. (Mentor: Dr. James Drake)

Lydia Civello, graduate student, successfully defended her Master’s thesis entitled, “The Role of Chk1 in BK Virus Replication in Renal Proximal Tubule Epithelial Cells,” July 18, 2012. (Mentor: Dr. Thomas Friedrich)

Congratulations Bhuvana and Lydia!

CIMD Annual Research Retreat

CIMD Faculty, postdocs, students, and staff attended the Center’s Annual Research Retreat held at River Stone Manor on Tuesday, August 7, 2012. Members of CIMD elected individuals to give oral presentations. Those chosen were Yoichi Furuya, Ph.D., Postdoctoral Fellow, John Sharifi, graduate student, and Karsten R.O. Hazlett, Ph.D., Associate Professor. Their talks were entitled, “Susceptibility of Asthmatic Mice to Influenza A Virus Challenge,” “4B or not 4B? That is the question: The Story of How an Unexpected Observation is leading Us on a Path Toward a Novel Restriction to HIV Infection,” and “Understanding and Engineering Francisella tularensis,” respectively.

Poster presentations were viewed and judged while each student responded to questions. The judges met and discussed the quality of each poster and the winners were:

Junior Students

1st Place: Martina Svetlik
2nd Place: Don Steiner
3rd Place: Amanda McCabe

Senior Students

1st Place: John Sharifi
2nd Place: Kathleen Busman-Sahay
3rd Place: Anthony Franchini

Drs. Metzger and Drake Appointed to Editorial Board


Conferences, Meetings and Study Sections

Dennis W. Metzger, Ph.D., served as Chair for the National Institutes of Health Special Emphasis Panel Host-Pathogen Expression Profiling, in Bethesda, MD, January 18, 2012.

Herbert I. Jacobson, Ph.D., James A. Bennett, Ph.D., and Dana R. Crawford, Ph.D., were selected to give poster presentations of their research at Bioconnex’s Capital Region Commercialization of Life Sciences Innovation Day in Albany, NY, June 1, 2012. Drs. Jacobson and Bennett’s poster was entitled, “Novel Approach to Drug Development: Homobiotic Molecules have Efficacy without Toxicity AFPep for the Treatment and Prevention of Breast Cancer.” (This poster was co-authored by Thomas Andersen, Ph.D.) Dr. Crawford’s poster was entitled, “Rational Gene Targeting with Healthy Dietary Supplements as a Novel and Cost-effective Approach to Treating Pathologies.”

Edmund J. Gosselin, Ph.D., Karsten R.O. Hazlett, Ph.D., and Timothy J. Sellati, Ph.D., were invited to give presentations at the University of Rhode Island, Neglected Tropical Diseases Workshop in Providence, RI, June 4, 2012. Their titles were, “Antigen Presenting Cells (APC) and Ag Processing Pathways: Key Considerations in Vaccine Development,” “Bacterial Host-Adaption and Vaccination,” and “Myeloid Suppressor Cells: Unwanted Immune Responses in the Context of Vaccination,” respectively.

Mario Canki, Ph.D., was invited to visit China for academic exchange and to speak at three venues: The Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing; the AIDS Clinical Research Center at Henan College of Traditional Chinese Medicine in Zhengzhou, Henan Province; and the International Symposium on the Research and Development of Chinese Herbal Medicines, Harbin, Heilongjiang Province, June 2-10, 2012. Dr. Canki’s presentation at each venue was entitled, “Merging of Wisdoms: Inhibition of HIV Infection by Active Compounds Derived from Traditional Chinese Medicine (TCM).”

James R. Drake, Ph.D., was invited to serve on the National Institutes of Health, Center for Scientific Review, Cellular & Molecular Immunology (CMI-A) Study Section that met in Washington, DC, June 7, 2012.

Timothy J. Sellati, Ph.D., was invited to give a presentation at a Lyme Disease Minisymposium in the Department of Medicine’s Tupper Research Institute at Tufts University entitled, “The Role of p38 MAPK and cAMP in Regulating Borrelia burgdorferi-induced Cytokine Production by THP-1 Cells,” in Boston, MA, August 2, 2012.

Kirsi Järvinen-Seppo, M.D., Ph.D., was invited to give a talk entitled, “Update on Food Allergies,” at Albany Medical College’s 18th Annual Asthma, Allergy and Immunology Update in Saratoga Springs, NY, August 1, 2012.

Kristen Porter, Ph.D., attend the AAI Advanced Course in Immunology at the Seaport World Trade Center in Boston, MA, July 29-August 3, 2012.
The Center for Immunology and Microbial Disease organized the Co-Infections Meeting 2012 at which experts from the international community gathered at The Sagamore Resort and Conference Center in Bolton Landing, NY, April 15-17, 2012. The meeting included formal presentations, invited oral poster presentations, informal discussions, and a Poster Session. It was held over three days and included a Keynote presentation by Jonathan A. McCullers, M.D. (University of Tennessee Health Sciences Center), a renowned expert in the field of influenza-bacteria co-infections.

The goal of the meeting was to allow internationally-recognized experts from around the world to meet and discuss new advances in our understanding of microbial co-infections and novel approaches for their prevention and treatment in humans. Topics included influenza, inflammatory lung disease, otitis media, MRSA, and pneumococcal disease. There were two CIMD faculty who gave presentations, Dr. Dennis Metzger and Dr. Keer Sun, which were, “Effect of Immunization on Influenza-Pneumococcus Synergy” and “NADPH Oxidase-mediated Immunity and Inflammation during Lethal Post-influenza MRSA Infection,” respectively.

We would like to take this opportunity to welcome the newest members to our Graduate Student program. Ph.D. students: Anand Balasubramanian, Alicia Soucy, Travis Walrath, and Tiffany Zarrella; and M.S. student: Vincent Gabrielle.

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**CIMD Seminars**

**September 24, 2012**

12 noon, MS-316

Dennis Metzger, Host

Lynn Puddington, Ph.D.

Associate Professor

Immunology and Medicine

Department of Immunology

University of Connecticut Health Center

*TBA*

**December 7, 2012**

12 noon, MS-316

Dennis Metzger, Host

Theobald Smith Annual Lecture

Jean-Laurent Casanova, M.D.

Professor, The Rockefeller University

Head, St. Giles Laboratory of Human Genetics and Infectious Diseases

Physician, Rockefeller University Hospital

*Toward a Genetic Theory of Infectious Diseases*