Dr. Ian Davis Receives Grant to Study RSV Therapy

Ian Davis, DVM, PhD, was recently awarded $131,326 by Inspire Pharmaceuticals for his grant entitled “Study of Inspire’s therapeutic agents in murine model of respiratory syncytial virus infection and asthma”. The paramyxovirus respiratory syncytial virus (RSV) is the most common cause of lower respiratory tract disease (bronchiolitis and pneumonia) in infants and children worldwide. RSV is also under-diagnosed as a cause of respiratory infections in adults and has a disease impact in the elderly comparable to that of nonpandemic influenza A virus. There is also currently no safe, effective RSV antiviral therapy or vaccine. Thus, understanding the basic mechanisms responsible for RSV lung pathology may lead to new modes of treatment for RSV bronchiolitis. Dr. Davis’ lab uses murine models to investigate the effects of pulmonary viral pathogens such as RSV on the ability of the bronchoalveolar epithelium to clear excess fluid. The process of alveolar fluid clearance (AFC), which is dependent upon active transport of sodium ions from the alveolar lining fluid to the subepithelial interstitial space, is vital to maintenance of normal gas exchange and effective mucociliary clearance in the lung. Previously, Dr. Davis’ lab demonstrated that infection of BALB/c mice with RSV impairs AFC, an effect which is mediated by UTP, released from infected epithelial cells acting upon P2Y purinergic receptors on surrounding cells. Because of the novelty of this mechanism, Dr. Davis was granted a U.S. Patent in 2005 for his research entitled: “Methods for using pyrimidine synthesis inhibitors to increase airway epithelial cell fluid uptake.” Dr. Davis’ lab is currently determining the effects of test therapeutics (and commercially available compounds) on RSV viral replication, hypoxemia, alveolar fluid clearance, airway resistance, histopathology, lung edema, and bronchoalveolar lavage cytokines and nucleotides. Should a suitable drug candidate be found, Dr. Davis will determine its pharmacokinetic profile and efficacy when delivered by aerosol. Dr. Davis’ research may ultimately lead to a new therapy for hypoxemia in human patients with RSV bronchiolitis. Best of luck to Dr. Davis and his lab in this important research!

Respiratory syncytial virus (RSV) and human metapneumovirus infections cause seasonal lower respiratory tract disease, particularly in infants and young children. The disease may be asymptomatic, mild, or severe, including bronchiolitis and pneumonia. The most recognizable clinical syndromes are bronchiolitis and pneumonia. These illnesses typically begin with upper respiratory symptoms and fever and then progress over several days to dyspnea, cough, and wheezing. In healthy adults and older children, illness is usually mild and may be inapparent or manifested only as an afebrile common cold. However, patients who are elderly or immunocompromised or have underlying cardiopulmonary disorders may develop severe disease. RSV and hMPV illness is suspected in infants and young children with bronchiolitis or pneumonia during RSV season.
Events and Programs

- **Valentine’s Day:** Thursday, February 14.
- **Healthy living pays off again in 2008!** Get rewarded for healthy activities and lifestyle through the 2008 Your Plan for Health Faculty and Staff Incentive Program. Benefit-eligible employees regardless of health plan membership who have taken their Personal Health Assessment (PHA) can earn up to $125, less payroll taxes, for seeing the dentist, being tobacco-free or attending a Lunch and Learn workshop, among other activities. Visit [www.yourplanforhealth.com](http://www.yourplanforhealth.com) and click on “2008 Incentive Program” for information on activities, points and program guidelines.

Selected Recent Grants/Publications/Presentations/Awards/Appointments

- **Dr. Cheryl London** was awarded $50,000 by the ACVIM Foundation for her study entitled “Clinical Evaluation of Carboplatin plus Gemcitabine in Canine Osteosarcoma”.
- **Dr. Yasuko Rikihisa** was a finalist for the annual TopCAT Innovation Award, which recognizes outstanding achievements in technology leadership (Sponsored by TechColumbus).
- **Dr. Judy Radin** was a mentor for the newly formed “FIRST Lego League Robotics Team”. Dr. Radin’s team, consisting of students in grades 5-8, received 2 first place trophies and was one of six teams to score an “excellent” in all four judging categories. The competition is designed to encourage children from K through 8 to enjoy and excel in math and science.
- **Howard KE, Burkhard MJ.** Mucosal challenge with cell-associated or cell-free feline immunodeficiency virus induces rapid and distinctly different patterns of phenotypic change in the mucosal and systemic immune systems. *Immunology.* 2007 Dec;122(4):571-83

**Staff Profile: Laetitia Bramoullé-Hirt**

Laetitia Bramoullé-Hirt is the new VBS Graduate Studies Coordinator. Her duties include admitting new graduate students, setting up orientations and serving as the Departmental contact person for graduate education. Laetitia earned a M.A. in French and Italian from OSU in 2005, and has held positions in the Office of International Education and Department of French and Italian at OSU. Her office is located in 101 Goss Lab. Welcome to the Department, Laetitia!

Send comments to Jennie Winck, winck.1@osu.edu. Visit the OSU Department of Veterinary Biosciences website: [http://www.vet.ohio-state.edu/biosciences.htm](http://www.vet.ohio-state.edu/biosciences.htm).