Smart Awarded Reynolds Professorship
Dr. Robert C. Smart, Professor of Environmental and Molecular Toxicology and member of the CCMTR Oncology Research Core, has been awarded a William Neal Reynolds Professorship effective July 1, 2012. This is one of the highest honors that can be awarded to faculty in the College of Agriculture and Life Sciences at North Carolina State University. Dr. Smart's research focuses on the identification of molecular defects that promote skin tumorigenesis. Dr. Smart serves as Director of Graduate Programs within the Department of Environmental and Molecular Toxicology and as Director of the Center for Human Health and the Environment.

New Trainees Selected for CMTRTP
Drs. Allie Mazepa and Liara Gonzalez have been selected for the Comparative Medicine and Translational Research Training Program and will begin the three-year program this summer. Dr. Mazepa graduated from The University of Wisconsin CVM, and is completing her residency in small animal internal medicine. Dr. Gonzalez graduated from Cornell University CVM and completed her residency in large animal surgery. For details on the program: http://www.cvm.ncsu.edu/ccmtr/cmtrtp.html.

Allergy and Clinical Immunology Research Core
CCMTR ACI core members will be collaborating on two different fronts in 2012:

Modeling Itch in Dogs
Investigators Thierry Olivry, Duncan Lascelles and research technicians Judy Paps and Andrea Thomson Sumrell will be working to develop an allergic itch model in dogs. In 2011, this team attempted to reliably induce itch in dogs using proteases derived mainly from dried spicules (i.e. mini-darts) of the tropical legume cowhage (Mucuna pruriens). While they were successful in causing dogs to scratch, the challenges could not be standardized and this made the model unsuitable for anti-itch drug testing.

This year, a more immunologically complex modeling will involve the application of house dust mite allergen extracts painted onto the skin of mite-allergic dogs. Itch manifestations will be detected using activity monitors, which are accelerometers that will be placed on the collars of the dogs. Previous studies have shown that an itch-associated increase in nighttime activity is expected to happen after mite allergen challenge. If the method proved to be reproducible, investigators will pursue testing of old and new anti-itch drugs.

Developing Serum Tests for Canine Autoimmune Blistering Diseases
In the continuation of a long series of studies that led to the characterization of antigens targeted in most, if not all, currently recognized autoimmune skin diseases of dogs, investigators Thierry Olivry and Petra Bizikova and research specialist Stan Dunston will be pushing forward with the development and validation of serological tests for two of the three most common autoimmune blistering diseases of dogs: pemphigus foliaceus (antigen: desmocollin-1) and epidermolysis bullosa acquisita (antigen: type VII collagen). It is expected, and hoped that, when available, these tests will facilitate disease diagnosis, treatment monitoring and pre-clinical relapse detection.
Clinical Genomics Research Core
The Clinical Genomics core has three active working groups. The newly formed Conservation Genomics Working Group partners CCMTR members with expertise in wildlife medicine, genomics, bioinformatics and statistics. The overall goal of this working group is to promote and facilitate interdisciplinary research employing comparative genomic approaches for investigating disease models relevant to conservation biology and to enhance the training of veterinary residents, veterinary students and graduate students. Species of interest include marine mammals, canids, endangered amphibians, and invertebrates. Questions about this working group can be directed to Jeff Yoder (Jeff_Yoder@ncsu.edu).

The other working groups are focusing on understanding the mechanisms of mutagenesis and discovery of disease causing mutations. These groups are working on developing an infrastructure to support investigators who wish to identify mutations underlying diseases they are interested in. The long term goal is to facilitate the investigation of diseases encountered in the clinic every day. Additional information is available from Natasha Olby (Natasha_olby@ncsu.edu).

Biological Barriers Research Core
The core leadership was transferred from Dr. Phil Sannes to Dr. Anthony Blikslager with the original name of Mucosal Pathophysiology. During an initial meeting in the fall of 2011, core members decided to change the name to something that would be more inclusive of the group’s interests. A new mission statement was written: “To facilitate interdisciplinary and collaborative research addressing the growth, physiology, repair and defense of biological barriers such as epithelia and mucosa in multiple organ systems.” A call was put out to the members of the core to set up working groups in support of this mission. Essentially, the group has members interested in respiratory cell biology, gastroenterology, and ophthalmology.

The Ophthalmology group developed a working group in Ocular Drug Delivery, and successfully added four new members. The group will collaborate with investigators within multiple departments including the joint department of Biomedical Engineering with UNC and NCSU. They have also applied for workshop funding. The Respiratory group put together two working groups that would further work based on RO1 funding. Further workshops and core discussions will develop and prioritize new areas of interest. The Gastroenterology group developed three working groups with collaborators at UNC and Duke. Members met with investigators within other cores and with collaborators at UNC to determine the possibility of Program Project funding. It was decided that a smaller subset of the group would initially seek funding from the North Carolina Biotechnology Center (NCBC), before seeking larger group grants. NCBC has already funded one such project amongst Gastroenterology members involving collaborators at UNC and NC Central University.

Future steps are to bring the core together to discuss working group ideas so that drafts of grants can be discussed in preparation for submission. Periodic meetings involving all members of respective labs will be set up as a learning experience at all levels as well as a productive mechanism to gain funding.

One Health IEG Spring Sessions a Success
The last weekly One Health Intellectual Exchange Group session was held April 24. Enlightening talks were given by leading scientists, including CCMTR members Natasha Olby, Steve Suter, Kristy Richards, and Suzanne Kennedy-Stoskopf.

Translational Regenerative Medicine Initiative Includes Cluster Hire
CCMTR members from the College of Engineering, College of Textiles and College of Veterinary Medicine competed for a Chancellors Faculty Initiative and where given three faculty positions (one for each College). The goal of this proposal was to build faculty expertise related to the translational aspects of Regenerative Medicine so as to link the basic and applied research being undertaken at NC State and similar institutions, with the clinical needs and expertise at the CVM and nearby human hospitals. Successful implementation of this program will result in an internationally recognized program in regenerative medicine based on the unique opportunities available at NCSU to utilize naturally occurring animal models to facilitate developments that can be applied to both humans and animals.
Additionally, the university has provided $800,000 to equip a GMP manufacturing facility at the CVM that will be a key component of the implementation of this technology at the clinical level.

At completion of this initiative there will be, at a minimum, three colleges (CVM, COT, COE) and six departments (BME, DOCS, ISE, MBS, MSE, PHP) involved, and the expectation that as the program matures additional faculty from CALS and PAMS will become involved in this university-wide initiative. For any questions regarding this initiative, contact Dr. Piedrahita, jorge_piedrahita@ncsu.edu.

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**Events Calendar**

To see upcoming events: [http://www.cvm.ncsu.edu/ccmtr/cal.html](http://www.cvm.ncsu.edu/ccmtr/cal.html). If you’d like to add an event to the calendar, send an email to liz_selisker@ncsu.edu.

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**Designate the CCMTR in PINS!**

Designation of the CCMTR in PINS is an important means for us to track the impact of the Center. If your proposal meets any of the following criteria, please select the CCMTR on the pull-down menu for ‘Center’: 1) the proposal is the result of a collaboration initiated through CCMTR activities, 2) CCMTR funding or a CCMTR service core was used to generate preliminary data, 3) the proposal will utilize a CCMTR service core, or 4) a CCMTR-supported trainee will be involved in the research. If you have any questions, please contact Liz Selisker.

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**CCMTR Promotion Encouraged**

Increasing external recognition of the Center remains essential. Faculty members are reminded to acknowledge the Center in posters, presentations, publications, abstracts and grants. Please use the links below to download a power point presentation containing a set of templates with the CCMTR logos. For Mac users: [http://dl.dropbox.com/u/45804432/CCMTRtemplates2011%20copy%202.key](http://dl.dropbox.com/u/45804432/CCMTRtemplates2011%20copy%202.key)


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**New Articles Highlight Comparative and Translational Research by CCMTR Members**

**Title: Generation and Characterisation of Induced Pluripotent Stem Cells (iPSCs) from Adult Canine Fibroblasts**
Authors: Piedrahita, JA; Koh, S; Olby, N

**Title: Bartonella spp. bacteremia in high-risk immunocompetent patients**
Authors: Maggi, RG; Mascarelli, PE; Pultorak, EL; Hegarty, BC; Bradley, JM; Mozayeni, BR; Breitschwerdt, EB

**Title: Is the skin barrier abnormal in dogs with atopic dermatitis?**
Authors: Olivry, T

**Title: Collection of Peripheral Blood CD34+ Progenitor Cells from Healthy Dogs and Dogs Diagnosed with Lymphoproliferative Diseases Using a Baxter-Fenwal CS-3000 Plus Blood Cell Separator**
Authors: Suter, SE

**Title: Molecular Prevalence of Bartonella, Babesia, and Hemotropic Mycoplasma sp in Dogs with Splenic Disease**
Authors: Varanat, M; Maggi, RG; Linder, KE; Breitschwerdt, EB  

Title: Dose Reduction of Meloxicam in Dogs with Osteoarthritis-Associated Pain and Impaired Mobility  
Authors: Wernham, BGJ; Trumpatori, B; Hash, J; Lipsett, J; Davidson, G; Wackerow, P; Thomson, A; Lascelles, BDX  

Title: A photoactivatable small-molecule inhibitor for light-controlled spatiotemporal regulation of Rho kinase in live embryos  
Authors: Morckel, AR; Lusic, H; Farzana, L; Yoder, JA; Deiters, A; Nascone-Yoder, NM  
Source: DEVELOPMENT, 139 (2):437-442; 10.1242/dev.072165 JAN 15 2012

Title: Skp2 Is Necessary for Myc-Induced Keratinocyte Proliferation but Dispensable for Myc Oncogenic Activity in the Oral Epithelium  
Authors: Sistrunk, C; Macias, E; Nakayama, K; Kim, Y; Rodriguez-Puebla, ML  

Title: Establishing of diagnostic criteria for feline nonflea-induced hypersensitivity dermatitis  
Authors: Favrot, C; Steffan, J; Seewald, W; Hobi, S; Linek, M; Marignac, G; Olivry, T; Beco, L; Nett, C; Fontaine, J; Roosje, P; Bergvall, K; Belova, S; Koebrich, S; Pin, D; Kovalik, M; Meury, S; Wilhelm, S  

Title: Successful treatment of a novel generalized variant of canine discoid lupus erythematosus with oral hydroxychloroquine  
Authors: Oberkirchner, U; Linder, KE; Olivry, T  

Title: Anchoring the dog to its relatives reveals new evolutionary breakpoints across 11 species of the Canidae and provides new clues for the role of B chromosomes  
Authors: Becker, SED; Thomas, R; Trifonov, VA; Wayne, RK; Graphodatsky, AS; Breen, M  

Title: Vector-Borne Diseases in Client-Owned and Stray Cats from Madrid, Spain  
Authors: Ayllon, T; Iniz, PPVP; Breitschwerdt, EB; Villaescusa, A; Rodriguez-Franco, F; Sainz, A  

Title: Granulomatous hepatitis due to Bartonella henselae infection in an immunocompetent patient  
Authors: VanderHeyden, TR; Yong, SL; Breitschwerdt, EB; Maggi, RG; Mihalik, AR; Parada, JP; Fimmel, CJ  
Source: BMC INFECTIOUS DISEASES, 12 10.1186/1471-2334-12-17 JAN 23 2012

Title: Hematologic Changes After Total Body Irradiation and Autologous Transplantation of Hematopoietic Peripheral Blood Progenitor Cells in Dogs With Lymphoma  
Authors: Escobar, C; Grindem, C; Neel, JA; Suter, SE  

Title: Neoplastic and Nonneoplastic Liver Lesions Induced by Dimethylnitrosamine in Japanese Medaka Fish  
Authors: Hobbie, KR; DeAngelo, AB; George, MH; Law, JM  
Title: Relationship of orthopedic examination, goniometric measurements, and radiographic signs of degenerative joint disease in cats
Authors: Lascelles, BDX; Dong, YH; Marcellin-Little, DJ; Thomson, A; Wheeler, S; Correa, M
Source: BMC VETERINARY RESEARCH, 8 10.1186/1746-6148-8-10 JAN 27 2012

Title: Invasion of canine erythrocytes by Bartonella vinsonii subsp berkhoffii
Authors: Billeter, SA; Breitschwerdt, EB; Levy, MG

Title: Experimental Infection of Horses with Bartonella henselae and Bartonella bovis
Authors: Palmero, J; Pusterla, N; Cherry, NA; Kasten, RW; Mapes, S; Boulouis, HJ; Breitschwerdt, EB; Chomel, BB