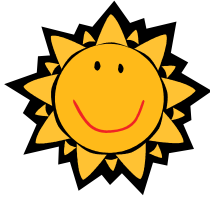


MInews

The E-newsletter of Einstein's MI Department

Summer 2013

Editors: Teresa DiLorenzo, Arturo Casadevall



A Message from the Editors

Thank you for your continued efforts in support of our departmental newsletter. Please continue to share your news with us...and submit photos, too!

News from the Chair

As we say goodbye to the 2012-2013 academic year and welcome the summer, the department is readying for the challenges of the coming year which include the implementation of a new curriculum and continuing to operate in a time of great fiscal constraints. However, it is also a time for celebration, for our own Bill Jacobs was elected to the National Academy of Sciences based on his work on mycobacterial genetics and vaccine development. I note that Bill's transformative work was all done at Einstein. We also congratulate Robert Singer, co-chair of Anatomy and Structural Biology, for election to the National Academy of Sciences. We are thrilled at his election and congratulate them on this tremendous achievement. The department is planning a celebration sometime this summer and I hope all will join us to congratulate Bill in person.

The department also congratulates Drs. Liise-anne Pirofski and Kami Kim for election to the American Academy of Physicians. This is an honorific society that recognizes scientific accomplishments by physician scientists and is considered one of the highest honors in academic medicine. Dr. Pirofski is also the recipient of the Maxwell Littman Award from the New York Medical Mycology Society for her contributions to our understanding of host defense mechanisms against fungi. Congratulations to both!

In an effort to bolster our immunology programs, Dr. Gregoire Lauvau has organized a Distinguished Immunology Lecture Series to begin in the Fall of 2013. The goal is to bring luminaries in the field to tell us about their work and to learn about Einstein. We need your help in making this program successful through your participation in lectures and in meeting with invited speakers when requested by Dr. Lauvau. I believe this is a very important effort, and we are indebted to Dr. Lauvau for his leadership and initiative.

Dr. Robbie Burk is heading a search to recruit an investigator with a research program focused on the microbiome. The search has just begun and we hope to have a successful recruitment in the coming academic year.

Honoring Stan Nathenson

The **Dr. Stanley G. Nathenson Memorial Lectureship Fund** has been established at Einstein in the hope that it will allow us to honor Stan's memory with a lecture in his name each year. This effort is being led by Teresa DiLorenzo and Matty Scharff. To those of you who have already contributed to the fund, we thank you. If you have not yet done so, please consider making a donation today in recognition of Stan's contributions to each of us and to Einstein.

To contribute online, please visit www.einstein.yu.edu/donate and note the following points. In order for your contribution to go to the Nathenson Fund, you should choose **"Where the need is greatest"** from the drop-down menu. You must also indicate that you are making your gift **in memory of Dr. Stanley Nathenson**. Alternatively, you may send a check payable to "Albert Einstein College of Medicine" to Emily Snyder, Director of Alumni Relations and Annual Giving, Albert Einstein College of Medicine, 1300 Morris Park Ave., Block Building, Room 715, Bronx, NY 10461. Please **indicate on your check** that your gift is in memory of Dr. Stanley Nathenson. Thank you for your support of this important effort.



New Graduate School Curriculum

The new graduate school curriculum is expected to be implemented in Fall 2013. The new curriculum features three eight-week course "blocks" per year, separated by rotation periods that are four weeks long. The three MI-run courses, which will now be called Microbes, Viruses, and Immunology, are all being redesigned to accommodate these changes. At a recent departmental faculty meeting, the tentative MI departmental requirements that were agreed upon were one of the three MI-run courses and one of Biochemistry, Gene Expression: Beyond the Double Helix, Molecular Genetics, and Molecular Cell Biology (Parts A and B). However, this is still a "work-in-progress," as the possibility of a school-wide "core curriculum" that includes some of these courses is still under consideration.

A New MI Faculty Member!

The Departments of Pathology and MI welcome new Assistant Professor **David Fooksman**. David comes to us from New York University School of Medicine where he trained with Michael Dustin. David is an expert in intra-vital multi-photon imaging, which he uses in his studies concerning *in vivo* plasma cell differentiation, migration, and physiology. His office is located within his lab in 131 Forchheimer. Why not stop by and introduce yourself?



Publications on Departmental Website

The lists of student and postdoc publications on the departmental website have recently been updated. Please check to be sure your publications have been included. Please send any missing publications to teresa.dilorenzo@einstein.yu.edu and they will be added to the site.

Please Welcome the New MI Lab Members!

Ariola Bardhi, Graduate Student (Goldstein)
Nina Flerin, Graduate Student (Goldstein)

Welcome!

News from the Office

The MI Office has re-opened the search for an Assistant Administrator. The Office also announces that **Linda Loparrino** will be retiring at the end of September after many years of devoted service to the department. Linda, we all wish you well!

News from the Students

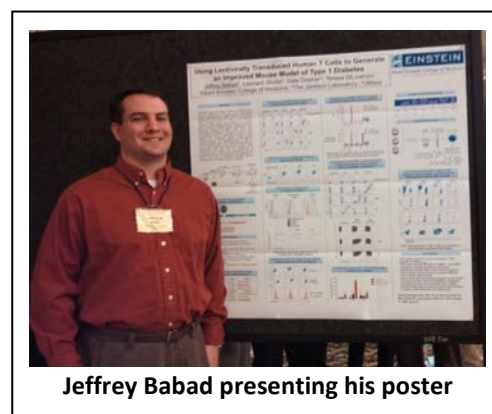
Jorge Aguilar (Fries)

Jorge received a grade of "Honors" for his qualifying exam.

Jeffrey Babad (DiLorenzo)

Poster presentation: Using lentivirally transduced human T cells to generate an improved mouse model of type 1 diabetes, Keystone Symposium on Immunopathology of Type 1 Diabetes, Whistler, British Columbia, Canada, April 2013.

Mukherjee, G., A. Geliebter, **J. Babad**, P. Santamaria, D. V. Serreze, G. J. Freeman, K. V. Tarbell, A. Sharpe, and T. P. DiLorenzo. DEC-205-mediated antigen



targeting to steady-state dendritic cells induces deletion of diabetogenic CD8 T cells independently of PD-1 and PD-L1. *Int Immunol* (in press).

Jessica Doerner (Putterman)

Poster presentation: Elucidating the role for TWEAK in the pathogenesis of cutaneous lupus, Federation of Clinical Immunology Societies (FOCIS) meeting and Trainee Satellite Symposium, Boston, MA, June 2013.

Jennifer Schloss (DiLorenzo)

Jenn received a grade of “Honors” for her qualifying exam.

Kieran Seay (Goldstein)

Seay, K., X. Qi, J. H. Zheng, C. Zhang, K. Chen, M. Dutta, K. Deneroff, C. Ochsenbauer, J. C. Kappes, D. R. Littman, and H. Goldstein. 2013. Mice transgenic for CD4-specific human CD4, CCR5 and cyclin T1 expression: A new model for investigating HIV-1 transmission and treatment efficacy. *PLoS One* 8:e63537.

Jing Wen (Putterman)

Oral and poster presentation: Hold the rituximab: Neuropsychiatric disease in murine lupus is not B cell-dependent, American Association of Immunologists (AAI) meeting, Honolulu, HI, May 2013.

Jing received a travel award to attend this meeting.



News from the Research Fellows

Gayatri Mukherjee (DiLorenzo)

Mukherjee, G., A. Geliebter, J. Babad, P. Santamaria, D. V. Serreze, G. J. Freeman, K. V. Tarbell, A. Sharpe, and T. P. DiLorenzo. DEC-205-mediated antigen targeting to steady-state dendritic cells induces deletion of diabetogenic CD8 T cells independently of PD-1 and PD-L1. *Int Immunol* (in press).

Rahul Pawar (Putterman)

Oral presentation: B7x modulates the adaptive immune response and diminishes renal injury in murine antibody mediated nephritis, American Association of Immunologists (AAI) Annual Meeting, Honolulu, HI, May 2013.

Poster presentation: Neutrophil Gelatinase Associated Lipocalin (NGAL) regulates the onset of serum autoantibodies in pristane induced lupus, American



Association of Immunologists (AAI) Annual Meeting, Honolulu, HI, May 2013.

Rahul received an AAI Trainee Abstract Award to attend this meeting.

Dibyendu Samanta (Nathenson)

Pang, Y., S. Kurella, C. Voisset, **D. Samanta**, D. Banerjee, A. Schabe, C. Das Gupta, H. Galons, M. Blondel, and S. Sanyal. 2013. The antiprion compound 6-aminophenanthridine inhibits the protein folding activity of the ribosome by direct competition. *J Biol Chem* 288:19081-19089.

News from the Associates

Neena Jain (Fries)

Jain, N.*, R. J. Cordero*, A. Casadevall, and B. C. Fries. 2013. Allergen1 regulates polysaccharide structure in *Cryptococcus neoformans*. *Mol Microbiol* 88:713-727. *equal contribution

Vasudev Rao (Prasad)

Poster presentation: Clade C HIV-1 isolates from southern Africa bear a unique genetic signature in Tat and display a higher frequency of dicysteine motif-containing variants that cause increased neurovirulence, Cold Spring Harbor Laboratory Meeting on Retroviruses, Cold Spring Harbor, NY, May 2013.

Rao, V. R., U. Neogi, J. S. Talboom, L. Padilla, M. Rahman, C. Fritz-French, S. Gonzalez-Ramirez, A. Verma, C. Wood, R. M. Ruprecht, U. Ranga, T. Azim, J. Joska, E. Eugenin, A. Shet, H. Bimonte-Nelson, W. R. Tyor, and V. R. Prasad. 2013. Clade C HIV-1 isolates circulating in Southern Africa exhibit a greater frequency of dicysteine motif-containing Tat variants than those in Southeast Asia and cause increased neurovirulence. *Retrovirology* 10:61.

News from the Instructors

Catherine Vilcheze (Jacobs)

Vilcheze, C., T. Hartman, B. Weinrick, and W. R. Jacobs, Jr. 2013. *Mycobacterium tuberculosis* is extraordinarily sensitive to killing by a vitamin C-induced Fenton reaction. *Nat Commun* 4:1881.

Sambandan, D., D. N. Dao, B. C. Weinrick, **C. Vilcheze**, S. S. Gurucha, A. Ojha, L. Kremer, G. S. Besra, G. F. Hatfull, and W. R. Jacobs, Jr. 2013. Keto-mycolic acid-dependent pellicle formation confers tolerance to drug-sensitive *Mycobacterium tuberculosis*. *mBio* 4:e00222-00213.

Lim, L. E., **C. Vilcheze**, C. Ng, W. R. Jacobs, Jr., S. Ramon-Garcia, and C. J. Thompson. 2013. Anthelmintic avermectins kill *Mycobacterium tuberculosis*, including multidrug-resistant clinical strains. *Antimicrob Agents Chemother* 57:1040-1046.

News from the Faculty

Joan Berman

Joan was elected as a Councilor for the International Society on Neuroimmune Pharmacology.

Joan was the student-invited speaker for the Department of Molecular and Cellular Biology at the University of Medicine and Dentistry of New Jersey (UMDNJ) in May 2013. Her talk was entitled, "Mechanisms of neuroinflammation and toxicity: Critical roles in neuroAIDS."

Oral presentation: Dopamine-mediated neuroinflammation and CNS damage in the context of HIV infection: A common mechanism of drugs of abuse, International Society on Neuroimmune Pharmacology, San Juan, Puerto Rico, April 2013.

Gaskill, P. J., L. Carvallo, E. A. Eugenin, and **J. W. Berman**. 2012. Characterization and function of the human macrophage dopaminergic system: Implications for CNS disease and drug abuse. *J Neuroinflammation* 9:203.

Gaskill, P. J., T. M. Calderon, J. S. Coley, and **J. W. Berman**. 2013. Drug induced increases in CNS dopamine alter monocyte, macrophage and T cell functions: Implications for HAND. *J Neuroimmune Pharmacol* 8:621-642.

Williams, D. W., T. M. Calderon, L. Lopez, L. Carvallo, P. J. Gaskill, E. A. Eugenin, S. Morgello, and **J. W. Berman**. 2013. Mechanisms of HIV entry into the CNS: Increased sensitivity of HIV infected CD14⁺CD16⁺ monocytes to CCL2 and key roles of CCR2, JAM-A, and ALCAM in diapedesis. *PLoS One* (in press).

Orellana, J. A., S. Velasquez, D. W. Williams, J. C. Saez, **J. W. Berman**, and E. A. Eugenin. 2013. Pannexin1 hemichannels are critical for HIV infection of human primary CD4⁺ T lymphocytes. *J Leukoc Biol* (in press).

Eugenin, E. A., and **J. W. Berman**. 2013. Chemokines. In *Encyclopedia of Medical Immunology*. Springer (in press).

Megra, B., E. Eugenin, T. Roberts, S. Morgello, and **J. W. Berman**. 2013. Protease resistant protein cellular isoform (PrP) as a biomarker: Clues into the pathogenesis of HAND. *J Neuroimmune Pharmacol* (in press).

Arturo Casadevall

Arturo was appointed to the Scientific Council of the Pasteur Institute, Paris, France; reappointed to the National Science Advisory Board for Biosecurity; and became Program Chair for the General Meeting of the American Society for Microbiology.

Arturo was recently invested as the Director of Einstein's Center for Immunological Sciences.

Learn more about this new center here:

<http://www.einstein.yu.edu/research/highlights/25/strengthening-einsteins-efforts-in-human-immunology/>

Invited lectures:

Virginia Commonwealth University, Richmond, VA
Columbia University (Responsible Conduct of Research course)
Texas A&M, College Station, TX
University of Texas at San Antonio
University of Texas at Austin
American Society for Microbiology General Meeting, Denver, CO

- Fang, F., and **A. Casadevall**. 2013. Why we cheat. *Scientific American MIND* (in press).
- Chow, S. K., C. Smith, T. MacCarthy, M. A. Pohl, A. Bergman, and **A. Casadevall**. 2013. Disease-enhancing antibodies improve the efficacy of bacterial toxin-neutralizing antibodies. *Cell Host Microbe* 13:417-428.
- Achkar, J. M., and **A. Casadevall**. 2013. Antibody-mediated immunity against tuberculosis: implications for vaccine development. *Cell Host Microbe* 13:250-262.
- Pohl, M. A., J. Rivera, A. Nakouzi, S. K. Chow, and **A. Casadevall**. 2013. Combinations of monoclonal antibodies to anthrax toxin manifest new properties in neutralization assays. *Infect Immun* 81:1880-1888.
- Ziegenbalg, A., R. Prados-Rosales, E. R. Jenny-Avital, R. S. Kim, **A. Casadevall**, and J. M. Achkar. 2013. Immunogenicity of mycobacterial vesicles in humans: Identification of a new tuberculosis antibody biomarker. *Tuberculosis (Edinb)* 93:448-455.
- Derengowski Lda, S., H. C. Paes, P. Albuquerque, A. H. Tavares, L. Fernandes, I. Silva-Pereira, and **A. Casadevall**. 2013. The transcriptional response of *Cryptococcus neoformans* to ingestion by *Acanthamoeba castellanii* and macrophages provides insights into the evolutionary adaptation to the mammalian host. *Eukaryot Cell* 12:761-774.
- Jain, N., R. J. Cordero, **A. Casadevall**, and B. C. Fries. 2013. Allergen1 regulates polysaccharide structure in *Cryptococcus neoformans*. *Mol Microbiol* 88:713-727.
- Quispe-Tintaya, W., D. Chandra, A. Jahangir, M. Harris, **A. Casadevall**, E. Dadachova, and C. Gravekamp. 2013. Nontoxic radioactive *Listeria*^{at} is a highly effective therapy against metastatic pancreatic cancer. *Proc Natl Acad Sci U S A* 110:8668-8673.
- Fonseca, F. L., A. J. Guimaraes, L. Kmetzsch, F. F. Dutra, F. D. Silva, C. P. Taborda, G. D. Araujo, S. Frases, C. C. Staats, M. T. Bozza, A. Schrank, M. H. Vainstein, L. Nimrichter, **A. Casadevall**, and M. L. Rodrigues. 2013. Binding of the wheat germ lectin to *Cryptococcus neoformans* chitooligomers affects multiple mechanisms required for fungal pathogenesis. *Fungal Genet Biol* (in press).
- Xia, Y., A. Janda, E. Eryilmaz, **A. Casadevall**, and C. Putterman. 2013. The constant region affects antigen binding of antibodies to DNA by altering secondary structure. *Mol Immunol* 56:28-37.
- Garcia-Solache, M. A., D. Izquierdo-Garcia, C. Smith, A. Bergman, and **A. Casadevall**. 2013. Fungal virulence in a lepidopteran model is an emergent property with deterministic features. *mBio* 4:e00100-00113.
- McClelland, E. E., L. M. Hobbs, J. Rivera, **A. Casadevall**, W. K. Potts, J. M. Smith, and J. J. Ory. 2013. The role of host gender in the pathogenesis of *Cryptococcus neoformans* infections. *PLoS One* 8:e63632.
- Jandl, T., E. Revskaya, Z. Jiang, R. A. Bryan, **A. Casadevall**, and E. Dadachova. 2013. Complement-dependent cytotoxicity of an antibody to melanin in radioimmunotherapy of metastatic melanoma. *Immunotherapy* 5:357-364.

Kania, G., S. Siegert, S. Behnke, R. Prados-Rosales, **A. Casadevall**, T. F. Luscher, S. A. Luther, M. Kopf, U. Eriksson, and P. Blyszczuk. 2013. Innate signaling promotes formation of regulatory nitric oxide-producing dendritic cells limiting T-cell expansion in experimental autoimmune myocarditis. *Circulation* 127:2285-2294.

Kate Dadachova

Kate was named among the Top 10 faculty members at Einstein by the Dean.

Kate gave two invited talks at the Targeted Alpha Therapy Meeting in Oak Ridge, TN: "Treatment of experimental pancreatic cancer with 213-Bismuth-labeled chimeric antibody to single-strand DNA in combination with cisplatin and gemcitabine" and "213-Bismuth-labeled antibody to gp41 glycoprotein kills ART-treated lymphocytes from HIV patients and HIV-infected monocytes in human blood-brain barrier model."

Kate served on a National Cancer Institute Special Emphasis Panel concerning "Innovative and Applied Emerging Technologies in Biospecimen Science."

Kate will give an invited talk at Columbia University in July entitled, "Radiation enhances the growth of melanin-containing microorganisms."

Ruth Bryan, a Research Assistant Professor of Radiology in the Dadachova lab, presented a poster, "Ionizing radiation promotes the growth of melanized *Cryptococcus neoformans* in an energy and dose-rate dependent manner," at the Annual Meeting of the American Society of Microbiology in Denver, CO.

The Dadachova lab welcomes Summer Undergraduate Research Program (SURP) student **Alyza Goldsmith** and Diversity Student Summer Research Opportunity Program (DSSROP) student **Danielle Espinoza** who joined us for summer research.

We wish best of luck to **Alicia McFarren**, a Medical Research Fellow in the lab, who will be starting her Fellowship in Bone Marrow Transplantation in Children at Duke University in July. We hope that in a year Alicia will come back to join the ranks of Attending Physicians at Montefiore!

We wish best of luck to **Thomas Jandl**, a Postdoctoral Fellow in the lab, who will continue his postdoctoral research in Betsy Herold's lab from July.

Quispe-Tintaya, W., D. Chandra, A. Jahangir, M. Harris, A. Casadevall, **E. Dadachova**, and C. Gravekamp. 2013. Nontoxic radioactive *Listeria*^{at} is a highly effective therapy against metastatic pancreatic cancer. *Proc Natl Acad Sci U S A* 110:8668-8673.

Bryan, R. A., Z. Jiang, A. Morgenstern, F. Bruchertseifer, A. Casadevall, and **E. Dadachova**. 2013. Radioimmunotherapy of *Cryptococcus neoformans* spares bystander mammalian cells. *Future Microbiol* (in press).

Teresa DiLorenzo

Teresa was invested as the Diane Belfer, Cypres & Endelson Families Faculty Scholar in Diabetes Research at a convocation held at the Plaza Hotel in April. Read more about the convocation and view photos here: <http://www.einstein.yu.edu/features/stories/893/einstein-celebrates-historic-gift-and-academic-achievement/>

Teresa was elected to membership in Einstein's Leo M. Davidoff Society in May. Membership in the Davidoff Society recognizes "distinguished, caring and committed teaching of medical students at the Albert Einstein College of Medicine."

Invited talk: Antigen-specific T cells in NOD mouse models of diabetes, Keystone Symposium on Immunopathology of Type 1 Diabetes, Whistler, British Columbia, Canada, April 2013.

Mukherjee, G., A. Geliebter, J. Babad, P. Santamaria, D. V. Serreze, G. J. Freeman, K. V. Tarbell, A. Sharpe, and **T. P. DiLorenzo**. DEC-205-mediated antigen targeting to steady-state dendritic cells induces deletion of diabetogenic CD8 T cells independently of PD-1 and PD-L1. *Int Immunol* (in press).

Harris Goldstein

Harris is a co-PI on a new R01 grant just awarded by the National Institute on Drug Abuse for a project entitled, "Drugs of abuse and the epigenetic and signaling pathways controlling HIV latency." Jonathan Karn at Case Western is the PI. The goal of this project is to determine whether a novel class of anti-inflammatory drugs called ligand-activated nuclear receptor agonists that are neuroprotective against HIV *ex vivo* is an effective therapy for HIV-associated dementia (HAND), particularly in patients who abuse drugs.

Seay, K., X. Qi, J. H. Zheng, C. Zhang, K. Chen, M. Dutta, K. Deneroff, C. Ochsenbauer, J. C. Kappes, D. R. Littman, and **H. Goldstein**. 2013. Mice transgenic for CD4-specific human CD4, CCR5 and cyclin T1 expression: A new model for investigating HIV-1 transmission and treatment efficacy. *PLoS One* 8:e63537.

Claudia Gravekamp

In March, Claudia served on a National Cancer Institute Special Emphasis Panel that reviewed grant applications concerning companion diagnostics.

Lukman Solola, a summer student researcher in the Gravekamp lab, was awarded a prestigious Graduate Research Fellowship from the National Science Foundation.

Chandra, D.*, A. Jahangir*, W. Quispe-Tintaya, M. H. Einstein, and **C. Gravekamp**. 2013. Myeloid-derived suppressor cells have a central role in attenuated *Listeria*

monocytogenes-based immunotherapy against metastatic breast cancer in young and old mice. *Br J Cancer* 108:2281-2290. *equal contribution

Singh, M., Y. Ramos, D. Asafu-Adjei, W. Quispe-Tintaya, D. Chandra, A. Jahangir, B. Aggarwal, and **C. Gravekamp**. 2013. Curcumin improves the therapeutic efficacy of *Listeria*^{at}-Mage-b vaccine in correlation with improved T cell responses in blood of a triple negative breast cancer model 4T1. *Cancer Med* (in press).

Quispe-Tintaya, W.* , D. Chandra*, A. Jahangir, M. Harris, A. Casadevall, E. Dadachova, and **C. Gravekamp**. 2013. Nontoxic radioactive *Listeria*^{at} is a highly effective therapy against metastatic pancreatic cancer. *Proc Natl Acad Sci U S A* 110:8668-8673. *equal contribution. This study was highlighted in *Science*, *Nature*, and *The Economist*, among other places! Learn more about this research and watch a video here:

<http://www.einstein.yu.edu/news/releases/892/radioactive-bacteria-targets-metastatic-pancreatic-cancer/>

Bill Jacobs

Bill was elected to the National Academy of Sciences in April. Read more about this honor here: <http://www.einstein.yu.edu/news/releases/895/faculty-members-at-albert-einstein-college-of-medicine-elected-to-national-academy-of-sciences/>



Sambandan, D., D. N. Dao, B. C. Weinrick, C. Vilcheze, S. S. Gurcha, A. Ojha, L. Kremer, G. S. Besra, G. F. Hatfull, and **W. R. Jacobs, Jr.** 2013. Keto-mycolic acid-dependent pellicle formation confers tolerance to drug-sensitive *Mycobacterium tuberculosis*. *mBio* 4:e00222-00213.

Wong, K. W., and **W. R. Jacobs, Jr.** 2013. *Mycobacterium tuberculosis* exploits human Interferon gamma to stimulate macrophage extracellular trap formation and necrosis. *J Infect Dis* 208:109-119.

Wang, F., D. Sambandan, R. Halder, J. Wang, S. M. Batt, B. Weinrick, I. Ahmad, P. Yang, Y. Zhang, J. Kim, M. Hassani, S. Huszar, C. Trefzer, Z. Ma, T. Kaneko, K. E. Mdluli, S. Franzblau, A. K. Chatterjee, K. Johnson, K. Mikusova, G. S. Besra, K. Futterer, **W. R. Jacobs, Jr.**, and P. G. Schultz. 2013. Identification of a small molecule with activity against drug-resistant and persistent tuberculosis. *Proc Natl Acad Sci U S A* (in press).

Vilcheze, C., T. Hartman, B. Weinrick, and **W. R. Jacobs, Jr.** 2013. *Mycobacterium tuberculosis* is extraordinarily sensitive to killing by a vitamin C-induced Fenton reaction. *Nat Commun* 4:1881. Learn more about this study and watch a video here:

<http://www.einstein.yu.edu/news/releases/907/study-finds-vitamin-c-can-kill-drug-resistant-tb/>

Morad Hassani, an Assistant Professor of Medicine in the Jacobs lab, reports that he is on the full-time attending staff at Jacobi Medical Center working five sessions per week at the Adult Comprehensive Services clinic, while also performing half-time research in the Jacobs lab. He recently received two honors: Bridges to Excellence (Medical Home) Recognition (2011-2013) and the National Committee for Quality Assurance (NCQA) Physician Practice Connections – Patient Centered Medical Home (2013). Morad also notes this recent publication:

Wang, F., D. Sambandan, R. Halder, J. Wang, S. M. Batt, B. Weinrick, I. Ahmad, P. Yang, Y. Zhang, J. Kim, **M. Hassani**, S. Huszar, C. Trefzer, Z. Ma, T. Kaneko, K. E. Mdluli, S. Franzblau, A. K. Chatterjee, K. Johnson, K. Mikusova, G. S. Besra, K. Futterer, W. R. Jacobs, Jr., and P. G. Schultz. 2013. Identification of a small molecule with activity against drug-resistant and persistent tuberculosis. *Proc Natl Acad Sci U S A* (in press).

Gregoire Lauvau

Gregoire was awarded a Center for AIDS Research (CFAR) pilot project grant to investigate non-cognate activation of memory CD8⁺ T cells for HIV-specific immunity.

Vinayaka Prasad

Prasad is the recipient of an R21 grant from the National Institute of Mental Health for a project entitled, "Targeting CNS HIV reservoirs across the blood-brain barrier." The aims are (i) to neutralize neurotoxic HIV proteins or infectious HIV virions in the CNS using anti-transferrin receptor aptamers as delivery agents, and (ii) to identify, via SELEX, the next generation drug delivery agents that are highly specific in delivering cargo across the blood-brain barrier. This is a multiple-PI award that will be conducted in collaboration with Matt Levy (Biochemistry).

Rao, V. R., U. Neogi, J. S. Talboom, L. Padilla, M. Rahman, C. Fritz-French, S. Gonzalez-Ramirez, A. Verma, C. Wood, R. M. Ruprecht, U. Ranga, T. Azim, J. Joska, E. Eugenin, A. Shet, H. Bimonte-Nelson, W. R. Tyor, and **V. R. Prasad**. 2013. Clade C HIV-1 isolates circulating in Southern Africa exhibit a greater frequency of dicysteine motif-containing Tat variants than those in Southeast Asia and cause increased neurovirulence. *Retrovirology* 10:61.

Mathew, S., M. Nguyen, X. Wu, A. Pal, V. B. Shah, **V. R. Prasad**, C. Aiken, and G. V. Kalpana. 2013. INI1/hSNF5-interaction defective HIV-1 IN mutants exhibit impaired particle morphology, reverse transcription and integration in vivo. *Retrovirology* 10:66.

Andy Yates

Invited lecture: Life choices for T cells: Decision making and optimal strategies, from development to maturity, University College London and University of Bordeaux, June 2013.

Sinclair, C., I. Bains, **A. J. Yates**, and B. Seddon. 2013. Asymmetric thymocyte death underlies the CD4:CD8 T cell ratio in the adaptive immune system. *Proc Natl Acad Sci U S A* (in press).

Bains, I., H. M. van Santen, B. Seddon, and **A. J. Yates**. 2013. Models of self-peptide sampling by developing T cells identify candidate mechanisms of thymic selection. *PLoS Comput Biol* (in press).

Xingxing Zang

Xingxing has been promoted to Associate Professor. Congratulations!

Xingxing was invited to join the Editorial Board of *American Journal of Clinical and Experimental Immunology*.

Zhao, R., J. M. Chinai, S. Buhl, L. Scandiuzzi, A. Ray, H. Jeon, K. C. Ohaegbulam, K. Ghosh, A.

Zhao, M. D. Scharff, and **X. Zang**. 2013. HHLA2 is a member of the B7 family and inhibits human CD4 and CD8 T-cell function. *Proc Natl Acad Sci U S A* 110:9879-9884.

Jeon, H., K. C. Ohaegbulam, Y. M. Abadi, and **X. Zang**. 2013. B7x and myeloid derived suppressor cells in the tumor microenvironment: A tale of two cities. *Oncoimmunology* (in press).