



CHILDREN'S

HOSPITAL OF RICHMOND AT **VCU**

PEDIATRIC RESEARCH NEWSLETTER

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Pediatric Research Office

Medical Director: Henry Rozycki, MD,
Ph: 828-9964
Email: hrozycki@mcvh-vcu.edu

Administrator: Melissa Yopp, MHSA
Ph: 628-0212
Email: mayopp@vcu.edu

Senior Research Coordinator: Sabrina
Minter, BS
Ph: 628-3094
Email: scminter@vcu.edu

Research Nurse Coordinator: April
Campbell, BSN, RN
Ph: 628-1569
Email: acampbell5@vcu.edu

Research Coordinators:

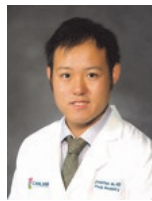
Matthew Ward, BS
Ph: 628-3093
Email: wardmt@vcu.edu

Farah Dahman, BS
Ph: 827-3427
Email: dahmanf@vcu.edu



Resident Research is Booming at CHoR

The pediatric residency at CHoR at VCU attracts some of the brightest medical school graduates from the US and abroad. A number of these young pediatricians enhance their education by doing research, under the mentorship of CHoR faculty. These valuable experiences are an opportunity to learn about research, to interact closely with faculty, to work in teams, to explore potential future careers and to satisfy their curiosity. Below are some examples. Other projects will be highlighted in future issues

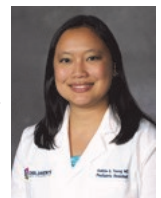


Dr. Jonathan Ma is a second year resident . He is working with Dr. Bruce Rubin on a project involving cystic fibrosis patients. “ Mucus is a barrier to airway water loss and microbial invasion and serves to maintain homeostasis in the respiratory system. In patients with cystic fibrosis, the mucus secretions are thick and viscous, leading to abnormal mucus clearance, infection, inflammation, and airway remodeling. My current research project is a longitudinal epidemiological study to examine biophysical and transport properties of cystic fibrosis patient sputum in relation to clinical parameters such as FEV1 and pathogen infection. We hypothesize that this will allow us to better understand the natural history of the disease, and perhaps to develop a better means of disease surveillance or prognostic tool.” He is currently measuring the biophysical and transport properties and getting clinical data from the medical record. He will be presenting some of this work at the ATS International Conference in Denver in May, 2015.

Two second year residents, Drs. Amanda Schlak and Ashley Mazo, and two third



year residents, Drs. Hadi Anwar and Ashley Tseng, worked with Dr. Clifton Lee from the Division of Hospital Medicine on a project titled “The predictability of using the EGAMI Score to identify children with refractory Kawasaki Disease: one institution’s analysis. “ Kawasaki Disease (KD) is an acute systemic, self-limited inflammatory illness. Typical presentation is described as prolonged fever, bilateral conjunctivitis, cervical lymphadenopathy, oral-mucosal involvement, extremity changes, and rash. Intravenous immunoglobulin (IVIG) is the current standard therapy; however, IVIG unresponsiveness is a major predictor for the development of coronary artery lesions, and the identification of resistant patients would allow for earlier



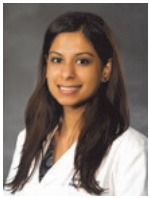
intervention. There are established models to evaluate IVIG unresponsiveness in Japanese children, but such models have not been well demonstrated within the United States.

(Continued on Page 2)

RESIDENT RESEARCH AT CHoR

The EGAMI score is one of these models that consider age at diagnosis, days of illness, platelet count, C-reactive protein (CRP), and alanine aminotransferase (ALT) to predict IVIG responsiveness. A retrospective chart review of pediatric patients discharged from the Children's Hospital of Richmond at Virginia Commonwealth University with the diagnosis of KD EGAMI scores were calculated from demographic and clinical information to evaluate efficacy in predicting refractory KD cases and risk for coronary artery aneurysms. In our patient population, the EGAMI score has not been shown to identify high risk patients for refractory KD or the development of coronary artery aneurysms. No specific risk factors were identified in our patient population that was associated with refractory KD or coronary artery aneurysms. Further long-term, multi-center studies will be needed to evaluate if certain risk factors can be identified to predict IVIG resistance and to further evaluate if the EGAMI score may be applicable to other patient populations in the United States.

Dr. Anwar has a second project with Dr. Lee focused on the family centered rounds that are the standard practice at CHoR. Studies show that family centered rounds (FCR) improve family satisfaction by involving the families in their children's care (Pediatrics, 2003). Medical students consistently find FCR beneficial to families but have differing attitudes regarding benefits to the medical team. We developed an FCR simulation to aid third year medical students in FCR presentation during their pediatric clerkship. We wanted to determine if the simulation improved medical student attitudes toward FCR. On the first day of the clerkship, third year medical students presented a patient admission to two evaluators playing the role of a parent and an attending physician. They completed a survey that day and at the end of their clerkship. The survey asked if they thought FCR would benefit family, nurses, physicians, students, and efficiency of rounds. The post-clerkship survey also included questions regarding changes in student's perception toward FCR. We currently have data for the first four blocks of medical students. We initially hope to improve medical students' perceptions of FCR as well as improve their presentations during their clerkships. In the future, we may investigate if faculty and housestaff find their presentations improved, and if families are more satisfied.



Dr. Adi Gupta, a second year resident, is in the planning stage on a neonatal project, working with Dr. Shadi Jurdi, a senior neonatal fellow, and Drs. Henry Rozycki and Russell Moores, Jr. to see if CHoR can develop a better Apgar Score. When the Apgar score was first originated, it was used as a tool to evaluate an infant immediately after birth and helped facilitate neonatal resuscitation. However in modern day, the Apgar score is not part of the resuscitation practices in the delivery room. Though an Apgar score less than 3 at 5 minutes seems to correlate to a higher risk of death, the data in the literature is inconsistent in regards to preterm infant outcomes. In 2006, the AAP released a statement discussing the limitations of the Apgar score and the

need for a more encompassing score at birth. At our institution, a new neonatal score was developed by Dr. Shadi Jurdi, a soon to be graduating neonatology fellow. In addition to vital signs, the NRAS score incorporates the level of resuscitation required to sustain adequate perfusion and oxygenation in a newborn, assessed both at one and five minutes of life. In our study, an APGAR and NRAS score will be assigned to every infant for which a neonatal team is present for delivery. Outcomes within the first 48 hours of life will be collected. The primary objective is to determine the relevance of the NRAS score in the delivery room and after birth, and ultimately compare it to the Apgar score.



Another second year resident, Dr. Will Smithart, is also working with Drs. Rozycki and Moores in the Division of Neonatal Medicine on a project. New techniques of non-invasive ventilation are being used increasingly in premature infants in the Neonatal ICU. One common ventilation mode for infants who have apnea or desaturation/bradycardia episodes is Nasal Intermittent Positive Pressure Ventilation (NIPPV), where a breath at a set pressure is pumped in at a set time, whether the patient is inhaling, or exhaling at the moment. A newer mod called non-invasive Neurally Adjusted Ventilatory Assist (NAVA) coordinates the amount and timing of the breath with the patient using diaphragm electrical activity. While NAVA may be a better mode in

theory, it is not known if it is as effective as NIPPV at preventing apnea, bradycardia or desaturation (ABD). The study plans to enroll premature infants who are already receiving NIPPV or non-invasive NAVA. Careful simultaneous measurements of ventilator and cardiorespiratory data will be collected for 4 hours in one randomly assigned mode and then for 4 hours in the other mode. The incidence of ABD events, as well as breathing coordination data will be compared between modes.



Dr. Nick Klaiber is a second year resident who will tell you that he chose to come to CHoR for his residency so he could pursue his studies into cancer therapy. Working with investigators from the School of Engineering (Dr. Hu Yang), the Department of Human Genetics (Dr. Xiang-Yang Wang), and Biostatistics (Dr. Guimin gao), he has developed a novel hypothesis and project, and found a way to investigate it while doing his pediatric residency. The project is titled "Development of a novel immune checkpoint inhibitor for treatment of disseminated neoplasms".

RESIDENT RESEARCH AT CHoR

Metastatic solid tumors represent a significant source of morbidity and mortality among the general population with few effective therapies available. T regulatory lymphocytes (Tregs) have been found to act as a shield, beneath which such neoplastic growths are free to proliferate and metastasize. Recently, immune checkpoint inhibitors have provided the first consistent increases in overall survival among patients with advanced stage melanoma in over two decades. Current FDA approved immune checkpoint inhibitors target molecules expressed by Tregs including, CTLA-4 and PD-1. Combination therapy with these two agents yielded remarkable response rates in patients with malignancies refractory to traditional treatments, confirming the potential of immunotherapeutics. Despite these encouraging developments, this first generation of immune checkpoint inhibitors falls short of targeting Tregs directly. In addition these drugs have failed to synergize with anti-tumor vaccination strategies, leaving autoimmune side effects to be managed. Thus, the ultimate goal of inducing a sustained, tumor specific immune response remains elusive. The primary difficulty in directly targeting Tregs is the lack of any single class defining cell surface marker. CD25, the high affinity alpha chain of the IL-2 receptor, represents an extracellular surface marker which is upregulated on Tregs, but is also highly expressed by activated effector T cells, the very lymphocytes responsible for actuating the antitumor response. Antibodies targeting CD25 were found to be counterproductive in animal tumor models, likely due to this non-specificity for the Treg subclass. The single most specific marker for Tregs yet identified is the fork-head box transcription factor foxp3. Tregs depend upon high levels of this protein to remain viable. The integral role of foxp3 in Treg function was elucidated through study of immune polyendocrinopathy enteropathy X-linked syndrome (IPEX) in humans and the scurfy phenotype in mice, both of which result from loss of function mutations in foxp3 and leave affected individuals devoid of functional Tregs with intact effector responses. As foxp3 is a strictly intracellular molecule it remains inaccessible to monoclonal antibody based therapies. One potential methodology for targeting intracellular proteins such as foxp3, is RNA interference, a highly conserved innate cellular response to double stranded RNAs that results in robust post-transcriptional silencing of gene products via specific cleavage mRNAs homologous to the introduced double stranded RNA. In vitro short interfering RNA (siRNA) mediated knockdown of foxp3 in Tregs inhibited the expression of CTLA-4, PD-1, PD-L1, IL-10 and TGF-B. In addition, RNAi mediated knockdown of foxp3 also effectively abrogated Treg's ability to suppress mitogen stimulated effector T cell proliferation in vitro. In 2013 human trials achieved safe and specific knockdown of several host genes using siRNAs for therapeutic purposes, demonstrating the translatability of this technology. Direct suppression of Treg functioning via RNAi mediated foxp3 knockdown may hold the potential to stimulate a more effective anti-tumoral immune response than current immunotherapies are capable of generating. The specific aim of our research is to synthesize a novel immune checkpoint inhibitor based upon nanoparticle delivered siRNAs targeting the Treg master transcription factor foxp3 and inducing immune mediated tumor rejection.

CHF Research Fund—Year 2

The Fund, generously supported by the Children's Hospital Foundation, is open for new applications, due February 27, 2015. Completed applications should be sent to Liz Fredericksen-Trent at efredericksen-trent@mcvh-vcu.edu. Questions or help requests to Henry Rozycki, MD at hrozycki@mcvh-vcu.edu

New Grants & Contracts Awarded

7/1/14—12/31/14—\$1,442.284

PI	Division	Title	Sponsor	Total Costs
Pat Accardo	Developmental Pediatrics	Child Development Services	Virginia Dept. Of Health	470,727.
Jeff Donowitz	ID	Pediatric Scientist Development Program	AMSPDC	75,800
Sue Lavoie	ID	VA LINC	Virginia Dept. Of Health	208,000
Michael McVoy	ID	An HBC-vectored peptide-based cytomegalovirus vaccine	NIH	13,693
Linda Meloy	General Pediatrics	A Four-Year Blinded-Outcomes Follow-Up Study of Patients Who Received Stannosoporphin or Placebo in Clinical	InfaCare	59,749
Linda Meloy	General Pediatrics	A Phase 2 Multicenter, Single Dose, Randomized, Double Blind, Placebo Controlled, Parallel Group Study Evaluating the Safety and Efficacy of Two Doses of Stannosoporphin in Combination with Phototherapy in Neonates.	InfaCare	109,132
Bruce Rubin	Pulmonology	The Anti-Inflammatory Effects of Tiotropium Bromide in IL-13 Transformed Human Airway Cells	Boehringer Ingelheim	132,348
Michael Schechter	Pulmonology	Success With Therapies Research ConsortiumSEARCH CONSORTIUM	CF Foundation	81,000
Judy Voynow	Pulmonology	Inhaled 2-O, 3-O Desulfated Heparin is a Multifunctional Anti-Inflammatory Therapy for Cystic Fibrosis Lung Disease	CHRB	100,000
Joel Schmidt	Pulmonology	eQUIP-CR Coaching Program Travel Grant	CF Foundation	5,000
Joel Schmidt	Pulmonology	Participation in the Cystic Fibrosis Registry 2014/2015	CF Foundation	84,206
Melanie Bean	Endocrinology	Low Intensity Weight Loss for Young Adults: Autonomous vs. Extrinsic Motivation	NIH	18,131
Melanie Bean	Endocrinology	Improving Diet via a School Cafeteria Intervention: Optimizing NSLP Policy Impact	NIH	2,184
Karen Hendricks-Munoz	Neonatal Medicine	A Multi-omic Analysis of the Vaginal Microbiome during Pregnancy	NIH	25,586
Sue Lavoie	ID	Pennsylvania Mid-Atlantic AIDS and Education Training Center	U Pittsburgh	2,438
India Sisler	Heme/Onc	Enhancing Use of Hydroxyurea In Sickle Cell Disease Using Patient Navigators	NIH	18,684

The listing only includes those grants and contracts for which the University has created an account and listed the award in its system. Grants and contracts which have been awarded but not yet been recorded in the VCU system will be listed in the next newsletter.

Publications Second Half 2014

Irani AM. The Relationship Between a Specific IgE Level and Asthma Outcomes: Results From the 2005-2006 National Health and Nutrition Examination Survey. *Pediatrics*. 2014 Nov;134 Suppl 3:S168

Irani AM. Food allergy and increased asthma morbidity in a school-based inner-city asthma study. *Pediatrics*. 2014 Nov;134 Suppl 3:S166-7

Martin RK, Saleem SJ, Folgosa L, Zellner HB, Damle SR, Nguyen GK, Ryan JJ, Bear HD, **Irani AM**, Conrad DH. Mast cell histamine promotes the immunoregulatory activity of myeloid-derived suppressor cells. *J Leukoc Biol*. 2014 Jul;96(1):151-9

Vega RA, Lyon C, **Kierce JF, Tye GW, Ritter AM, Rhodes JL.** Minimizing transfusion requirements for children undergoing craniosynostosis repair: the CHoR protocol. *J Neurosurg Pediatr*. 2014 Aug;14(2):190-5.

Rhodes JL, Tye GW, Fearon JA. Craniosynostosis of the lambdoid suture. *Semin Plast Surg*. 2014 Aug;28(3):138-43.

Vega RA, Hidlay DT, **Tye GW,** Fuller CE, **Rhodes JL.** Intradiploic dermoid cyst of the lateral fronto-temporal skull: case report and review of the literature. *Pediatr Neurosurg*. 2013;49(4):232-5

Hymel KP, Armijo-Garcia V, **Foster R,** Frazier TN, Stoiko M, Christie LM, Harper NS, Weeks K, Carroll CL, Hyden P, Sirotnak A, Truemper E, Ornstein AE, Wang M; Pediatric Brain Injury Research Network . Validation of a clinical prediction rule for pediatric abusive head trauma. (PediBIRN) Investigators. *Pediatrics*. 2014 Dec;134(6):e1537-44.

Mason MJ, Campbell L, Zaharakis N, **Foster R,** Richards S. Levels of teen dating violence and substance use in an urban emergency department. *J Dev Behav Pediatr*. 2014 Nov-Dec;35(9):576-81

Chopski SG, Rangus OM, **Moskowitz WB,** Throckmorton AL. Experimental measurements of energy augmentation for mechanical circulatory assistance in a patient-specific Fontan model. *Artif Organs*. 2014 Sep;38(9):791-9.

Kwon EN, Carter KA, Kanter RJ. Radiofrequency Catheter Ablation for Dyssynchrony-induced Dilated Cardiomyopathy in an Infant. *Congenit Heart Dis*. 2014 Nov;9(6):E179-84.

Willson DF, Kirby A, Kicker JS. Respiratory secretion analyses in the evaluation of ventilator-associated pneumonia: a survey of current practice in pediatric critical care. *Pediatr Crit Care Med*. 2014 Oct;15(8):715-9

Jardine D, Emond M, Meert KL, Harrison R, Carcillo JA, Anand KJ, Berger J, Newth CJ, **Willson DF,** Nicholson C, Dean JM, Zimmerman JJ; Eunice Kennedy Shriver National Institute of Child Health and Human Development Collaborative Pediatric Critical Care Research Network. A single nucleotide polymorphism in the corticotropin receptor gene is associated with a blunted cortisol response during pediatric critical illness. *Pediatr Crit Care Med*. 2014 Oct;15(8):698-705

Dolgnier A, **Bain J,** Peterson-Carmichael SL, Turner DA, Rehder KJ. Extracorporeal membrane oxygenation for refractory air leak in a child presenting with bacterial tracheitis. *Respir Care*. (10):e163-5 Oct;59(10):e163-5.

Publications Second Half 2014

Vu TA, **O'Meara A**, **Teasley J**. Abnormal downward gaze and cold caloric examination due to propofol: a case study. *Pediatr Neurol*. 2014 Sep;51(3):437-8

Williams DC, Turi JL, Hornik CP, Bonnadonna DK, Williford WL, Walczak RJ, Watt KM, Cheifetz IM. Circuit Oxygenator Contributes to Extracorporeal Membrane Oxygenation-Induced Hemolysis. *ASAIO J*. 2014 Nov 21. [Epub ahead of print]

Walenga RL, Tian G, Hindle M, Yelverton J, **Dodson K**, Longest PW. Variability in Nose-to-Lung Aerosol Delivery. *J Aerosol Sci*. 2014 Dec 1;78:11-29.

Chadwick KA, Moore J, Tye GW, **Coelho DH**. Management of patients with cochlear implants and ventriculoperitoneal shunts. *Cochlear Implants Int*. 2014 Jul;15(4):185-90.

Childers AL, Gruen J, Sayeed S, Powers CN, **Coelho DH**. Eosinophilic otitis media. *Otol Neurotol*. 2014 Jul;35(6):e206-7.

Petersson RS, Sampson DE, Sidman JD. Dynamic facial reanimation with orthodromic temporalis tendon transfer in children. *JAMA Facial Plast Surg*. 2014 Nov-Dec;16(6):432-6.

Yelverton JC, Nguyen JH, Wan W, Kenerson MC, **Schuman TA**. Effectiveness of a standardized education process for tracheostomy care. *Laryngoscope*. 2014 Jul 8. doi: 10.1002/lary.24821. [Epub ahead of print]

Kambalapalli M, **Gupta A**, **Prasad UR**, **Francis GL**. Ultrasound Characteristics of the Thyroid in Children and Adolescents with Goiter: A Single Center Experience. *Thyroid*. 2014 Oct 23. [Epub ahead of print]

McClish D, Carcaise-Edinboro P, Esinhart H, Wilson DB, **Bean MK**. Differences in response to a dietary intervention between the general population and first-degree relatives of colorectal cancer patients. *J Nutr Educ Behav*. 2014 Sep-Oct;46(5):376-83.

Donowitz JR, Petri WA Jr. Pediatric small intestine bacterial overgrowth in low-income countries. *Trends Mol Med*. 2015 Jan;21(1):6-15. doi: 10.1016/j.molmed.2014.11.001. Epub 2014 Nov 15.

Franco RL, Bowen MK, Arena R, Privett SH, Acevedo EO, **Wickham EP**, Evans RK. Sex differences in pulmonary oxygen uptake kinetics in obese adolescents. *J Pediatr*. 2014 Dec;165(6):1161-5.

Tarbell SE, Shaltout HA, Wagoner AL, Diz DI, **Fortunato JE**. Relationship among nausea, anxiety, and orthostatic symptoms in pediatric patients with chronic unexplained nausea. *Exp Brain Res*. 2014 Aug;232(8):2645-50.

Fortunato JE, Wagoner AL, Harbinson RL, D'Agostino RB Jr, Shaltout HA, Diz DI. Effect of fludrocortisone acetate on chronic unexplained nausea and abdominal pain in children with orthostatic intolerance. *J Pediatr Gastroenterol Nutr*. 2014 Jul;59(1):39-43

Publications Second Half 2014

Alam Z, Al-Mahdi Z, Zhu Y, McKee Z, Parris DS, Parikh HI, Kellogg GE, Kuchta A, **McVoy MA**. Anti-cytomegalovirus activity of the anthraquinone atanyl blue PRL. *Antiviral Res.* 2015 Feb;114:86-95. doi: 10.1016/j.antiviral.2014.12.003. Epub 2014 Dec 10.

Fu YR, Liu XJ, Li XJ, Shen ZZ, Yang B, Wu CC, Li JF, Miao LF, Ye HQ, Qiao GH, Rayner S, Chavanas S, Davrinche C, Britt WJ, Tang Q, **McVoy M**, Mocarski E, Luo MH. MicroRNA miR-21 Attenuates Human Cytomegalovirus Replication in Neural Cells by Targeting Cdc25a. *J Virol.* 2015 Jan 15;89(2):1070-82. doi: 10.1128/JVI.01740-14. Epub 2014 Nov 5

Kauvar LM, Liu K, Park M, DeChene N, Stephenson R, Tenorio E, Ellsworth SL, Tabata T, Pettitt M, Tsuge M, Fang-Hoover J, Adler SP, Cui X, **McVoy MA**, Pereira L. A High Affinity Native Human Antibody Neutralizes Human Cytomegalovirus Infection of Diverse Cell Types. *Antimicrob Agents Chemother.* 2014 Dec 22. pii: AAC.04295-14. [Epub ahead of print]

Yang D, Alam Z, Cui X, Chen M, Sherrod CJ, **McVoy MA**, Schleiss MR, Dittmer DP. Complete genome sequence of cell culture-attenuated Guinea pig cytomegalovirus cloned as an infectious bacterial artificial chromosome. *Genome Announc.* 2014 Oct 16;2(5).

Al-Mateen CS, Linker JA, Damle N, Hupe J, Helfer T, Jessick V. Vicarious Traumatization and Coping in Medical Students: a Pilot Study. *Acad Psychiatry.* 2014 Aug 1. [Epub ahead of print]

Mason MJ, **Campbell L**, Way T, Keyser-Marcus L, Benotsch E, Mennis J, Zhang J, King L, May J, Stembridge DR. Development and Outcomes of a Text Messaging Tobacco Cessation Intervention with Urban Adolescents. *Subst Abus.* 2014 Dec 31:0. [Epub ahead of print]

Campbell LF, Brown Q, Cavanaugh C, Lawson A. Race/ethnicity, sexual partnerships with men involved with drugs, and sexually transmitted infections among a sample of urban young adult women. *Int J STD AIDS.* 2014 Dec 12. pii: 0956462414563629. [Epub ahead of print]

Hendricks-Munoz KD, Mayers RM. A neonatal nurse training program in kangaroo mother care (KMC) decreases barriers to KMC utilization in the NICU. *Am J Perinatol.* 2014 Nov;31(11):987-92.

Goonasekera CD, Wang J, **Bunchman TE**, Deep A. Factors Affecting Circuit Life During Continuous Renal Replacement Therapy in Children With Liver Failure. *Ther Apher Dial.* 2014 Sep 4. doi: 10.1111/1744-9987.12224. [Epub ahead of print]

Xiao N, Jenkins TM, Nehus E, Inge TH, Michalsky MP, Harmon CM, Helmrath MA, Brandt ML, Courcoulas A, Moxey-Mims M, Mitsnefes MM; Teen-LABS Consortium. Kidney function in severely obese adolescents undergoing bariatric surgery. *Obesity (Silver Spring).* 2014 Nov;22(11):2319-25.

Vorona RD, Szklo-Coxe M, Lamichhane R, Ware JC, McNallen A, **Leszczyszyn D**. Adolescent crash rates and school start times in two central Virginia counties, 2009-2011: a follow-up study to a southeastern Virginia study, 2007-2008. *J Clin Sleep Med.* 2014 Nov 15;10(11):1169-77

Publications Second Half 2014

Bajaj JS, Thacker LR, **Leszczyszyn D**, Taylor SA, Heuman DM, Raman S, Sterling RK, Siddiqui MS, Stravitz RT, Sanyal AJ, Puri P, Luketic V, Matherly S, Fuchs M, White MB, Noble NA, Unser AB, Wade JB. Effects of Obstructive Sleep Apnea on Sleep Quality, Cognition, and Driving Performance in Patients With Cirrhosis. *Clin Gastroenterol Hepatol*. 2014 Aug 23. pii: S1542-3565(14)01247-6. doi: 10.1016/j.cgh.2014.08.028. [Epub ahead of print]

Mann D, Liu J, Chew ML, Bockbrader H, Alvey CW, Zegarac E, **Pellock J**, Pitman VW. Safety, tolerability, and pharmacokinetics of pregabalin in children with refractory partial seizures: A phase 1, randomized controlled study. *Epilepsia*. 2014 Dec;55(12):1934-43.

Pellock JM, Seinfeld S. Is there a need for further trials for the treatment of prolonged seizures? *Epileptic Disord*. 2014 Oct;16 Suppl 1:103-7.

Pellock JM, Wheless JW. Introduction: Recommendations regarding management of patients with Lennox-Gastaut syndrome. *Epilepsia*. 2014 Sep;55 Suppl 4:1-3

Nagiub M, Mahadin D, Gowda S, Aggarwal S. Prenatal diagnosis of coronary artery fistula: a case report and review of literature. *AJP Rep*. 2014 Nov;4(2):e83-6

Nagiub M, Lee S, Guglani L. Echocardiographic Assessment of Pulmonary Hypertension in Infants with Bronchopulmonary Dysplasia: Systematic Review of Literature and a Proposed Algorithm for Assessment. *Echocardiography*. 2014 Sep 18. doi: 10.1111/echo.12738. [Epub ahead of print]

Leffler CT, Schwartz SG, Grzybowski A, Braich PS. The first cataract surgeons in Anglo-America. *Surv Ophthalmol*. 2015 January - February;60(1):86-92. doi: 10.1016/j.survophthal.2014.08.002. Epub 2014 Aug 20.

Schwartz SG, **Leffler CT**. Uses of the word "macula" in written English, 1400-present. *Surv Ophthalmol*. 2014 Nov-Dec;59(6):649-54.

Leffler CT, Schwartz SG, Davenport B. Congenital cataract surgery during the early enlightenment period and the Stepkins oculists. *JAMA Ophthalmol*. 2014 Jul;132(7):883-4

Kardouni JR, Shaffer SW, Pidcoe PE, Finucane SD, **Cheatham SA**, Michener LA. Immediate changes in pressure pain sensitivity after thoracic spinal manipulative therapy in patients with subacromial impingement syndrome: A randomized controlled study. *Man Ther*. 2014 Dec 22. pii: S1356-689X(14)00238-0. doi: 10.1016/j.math.2014.12.003. [Epub ahead of print]

Collins MN, Brawley CB, McCracken CE, Shankar PR, **Schechter MS**, Rogers BB. Risk factors for quantity not sufficient sweat collection in infants 3 months or younger. *Am J Clin Pathol*. 2014 Jul;142(1):72-5.

Sawin KJ, Liu T, Ward E, Thibadeau J, **Schechter MS**, Soe MM, Walker W; NSBPR Coordinating Committee. The National Spina Bifida Patient Registry: Profile of a Large Cohort of Participants from the First 10 Clinics. *J Pediatr*. 2014 Oct 30. pii: S0022-3476(14)00890-7. doi: 10.1016/

Publications Second Half 2014

Wagener JS, Elkin EP, Pasta DJ, **Schechter MS**, Konstan MW, Morgan WJ; for the Investigators and Coordinators of the Epidemiologic Study of Cystic Fibrosis. Pulmonary function outcomes for assessing cystic fibrosis care. *J Cyst Fibros*. 2014 Dec 9. pii: S1569-1993(14)00269-0. doi: 10.1016/j.jcf.2014.11.008. [Epub ahead of print]

Schechter MS, Regelmann WE, Sawicki GS, Rasouliyan L, VanDevanter DR, Rosenfeld M, Pasta D, Morgan W, Konstan MW. Antibiotic treatment of signs and symptoms of pulmonary exacerbations: A comparison by care site. *Pediatr Pulmonol*. 2014 Dec 19. doi: 10.1002/ppul.23147. [Epub ahead of print]

Taylor-Robinson DC, **Schechter MS**, Smyth RL. Comparing cystic fibrosis outcomes across the pond. *Thorax*. 2014 Dec 23. pii: thoraxjnl-2014-206393. doi: 10.1136/thoraxjnl-2014-206393. [Epub ahead of print]

Szabolcs P, Buckley RH, Davis RD, Moffet J, **Voynow J**, Antony J, Chen X, Sempowski GD, Zaas DW. Tolerance and immunity after sequential lung and bone marrow transplantation from an unrelated cadaveric donor. *J Allergy Clin Immunol*. 2014 Sep 24. pii: S0091-6749(14)01112-9. doi: 10.1016/j.jaci.2014.07.058. [Epub ahead of print]

Kelly FL, Sun J, Fischer BM, **Voynow JA**, **Kummarapurugu AB**, Zhang HL, Nugent JL, Beasley RF, Martinu T, Gwinn WM, Morgan DL, Palmer SM. Diacetyl induces amphiregulin shedding in pulmonary epithelial cells and in experimental bronchiolitis obliterans. *Am J Respir Cell Mol Biol*. 2014 Oct;51(4):568-74

Voynow JA, Montpetit AJ. Nasal NO as a biomarker: Don't say NO to the many challenges of translational medicine. *Pediatr Pulmonol*. 2015 Jan;50(1):100-2. doi: 10.1002/ppul.23111. Epub 2014 Oct 13.

Rubin BK. Secretion properties, clearance, and therapy in airway disease. *Transl Respir Med*. 2014 doi: 10.1186/2213-0802-2-6. eCollection 2014.

Tanabe T, Shimokawaji T, Kanoh S, **Rubin BK**. Secretory phospholipases A2 are secreted from ciliated cells and increase mucin and eicosanoid secretion from goblet cells. *Chest*. 2014 Nov 27. doi: 10.1378/chest.14-0258.

Watanabe K, Shinkai M, Shinoda M, Hara Y, Yamaguchi N, **Rubin BK**, Ishigatsubo Y, Kaneko T. Measurement of eNO with portable analyser might improve the management of persistent cough at primary care practice in Japan. *Clin Respir J*. 2014 Oct 13. doi: 10.1111/crj.12228.

Rubin BK. Asthma myths, controversies, and dogma. *Paediatr Respir Rev*. 2014 Sep 6. pii: S1526-0542(14)00102-X. doi: 10.1016/j.prrv.2014.09.001.

Rubin BK, **Williams RW**. Aerosolized antibiotics for non-cystic fibrosis bronchiectasis. *Respiration*. 2014;88(3):177-84.

Rubin BK, Priftis KN, **Schmidt HJ**, Henke MO. Secretory hyperresponsiveness and pulmonary mucus hypersecretion. *Chest*. 2014 Aug;146(2):496-507..

Rubin BK, **Williams RW**. Emerging aerosol drug delivery strategies: from bench to clinic. *Adv Drug Deliv Rev*. 2014 Aug;75:141-8. 30.

Publications Second Half 2014

Haydour Q, Alahdab F, Farah M, Barrionuevo P, Vertigan AE, Newcombe PA, Pringsheim T, Chang AB, **Rubin BK**, McGarvey L, Weir KA, Altman KW, Feinstein A, Murad MH, Irwin RS. Management and diagnosis of psychogenic cough, habit cough, and tic cough: a systematic review. *Chest*. 2014 Aug;146(2):355-72.

Saiman L, Siegel JD, LiPuma JJ, Brown RF, Bryson EA, Chambers MJ, Downer VS, Fliege J, Hazle LA, Jain M, Marshall BC, O'Malley C, Pattee SR, Potter-Bynoe G, Reid S, Robinson KA, Sabadosa KA, **Schmidt HJ**, Tullis E, Webber J, Weber DJ. Infection prevention and control guideline for cystic fibrosis: 2013 update. *Infect Control Hosp Epidemiol*. 2014 Aug;35 Suppl 1:S1-S67

Ramanathan R, Sharma A, Lee DD, Behnke M, Bornstein K, Stravitz RT, Sydnor M, Fulcher A, Cotterell A, Posner MP, **Fisher RA**. Multimodality therapy and liver transplantation for hepatocellular carcinoma: a 14-year prospective analysis of outcomes. *Transplantation*. 2014 Jul 15;98(1):100-6.

Lo MM, Bunchman TE: Chronic Renal Failure in Children. The five minute consult for Pediatric Urology , eds Koo H . LWW 2015

Schechter MS, Schmidt HJ. Improvements in the Care of Patients with Cystic Fibrosis. *Virginia Pediatrics* 2014 Fall;14-16. http://www.virginiapediatrics.org/wp-content/uploads/2011/09/PEDS-Fall-2014-Newsletter_FINALcolor120414.pdf

Integrative HMP Research Network Consortium (member **Hendricks-Muñoz KD**). The Integrative Human Microbiome Project (iHMP): Dynamic Analysis of Microbiome-Host Omics Profiles During Periods of Human Health and Disease. *Cell Host Microbe*. 2014 Sep 10;16(3):276-89.

Mally P, Xu J, **Hendricks-Muñoz KD**. Biomarkers for neonatal sepsis: recent developments. *J Research and Reports in Neonatology*, Sep 2014;4:157-168.



CHOR@VCU on the move!

Honors and Awards

Presentations to National & International Meetings

Nina Xiao, MD, Division of Pediatric Nephrology presented at the American Society of Nephrology Conference in Philadelphia, PA November, 2014:

- "Subclinical kidney injury before and one year after bariatric surgery among adolescents with severe obesity"

At the 2014 North American Cystic Fibrosis Conference, Atlanta GA, Oct 2014, CHoR presentations included:

- Wheat Butt E, Wentz D, Bitsko M, Schmidt J. Improving Psychosocial Care for Patients: Implementing an Annual Screening Program for Anxiety and Depression
- Sanders DB, Emerson J, Ren CL, Schechter MS, Gibson RL, Morgan WJ, Rosenfeld M, The EPIC Study Group. Early Childhood Risk Factors for Decreased FEV1 at Age 6-7 Years
- Schechter MS, Michel SH, Haupt M, Seo B, Khurmi R, Liu S, Kapoor M. Relationship of Initial Pancreatic Enzyme Replacement Therapy Dose and Growth in Young Children with CF

Asadullah Khan, MD from the Division of Hematology-Oncology presented 3 papers at the annual Society for Neuro-oncology Meeting in Miami, FL, Nov 2014

- Asadullah Khan, Jocelyn Terry, Sarah Goggin, et al. TERT activation and SUV420-mediated heterochromatin changes in pediatric brain cancers.
- Timothy Van Meter, Alexander Weech, Nathan Rockwell, Jocelyn Terry, James Lister, Asadullah Khan. Novel Chromatin Regulatory Activity of ESCO2 in Cancer and Neural Development.
- Asadullah Khan, Kevin Fitzmartin, Marielle Mahan, Weston Harty, Jacques Cote, Stefan Pfister, Stephen Mack, Michael D. Taylor, and Timothy Van Meter. Aberrant Myst4/Brpf1 signaling misdirects regional neurogenesis programs in pediatric brain cancers.

Tim Bunchman, MD co-chaired the AKI and CRRT symposium put on by ESPNIC (European Society Pediatric and Neonatal Intensive Care) Barcelona Spain, Oct 16-17, 2014 and gave talks on:

- Vascular Access for RRT
- Prescriptions in RRT
- Nutrition in AKI and Critical Illness
- RRT for In Born Error of Metabolism

Bruce Rubin, MD, Chair of Pediatrics presented the following:

University of Sao Paulo. Aug 2014, Taught a 3 day workshop and magic course including :

- Therapy for mucus clearance disorders
- Nasal and sinus inflammation in airway diseases
- Beyond the guidelines: Fatal and near fatal asthma
- The science and practice of aerosol therapy
- Clinical case discussion at Children's Hospital
- Dogma and great mistakes in respiratory care
- Pediatric pulmonary puzzles
- How to get your research published

Porto Alegre, Brazil: 30th National Practical Course on Pediatric Pulmonary. Lectures as follows:

- Therapy for mucus clearance disorders
- Severe and near fatal asthma
- Getting research published
- Clinical Pearls
- Atelectasis plastic bronchitis and the Middle lobe syndrome

The 2nd Affiliated Hospital & Yuying Children's Hospital of Wenzhou Medical University
2014 International Pediatric Respiratory Conference Oct 2014

- Keynote Lecture The Science and Practice of Aerosol Therapy

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Honors and Awards

Presentations to National & International Meetings

Enze Medical Center, Taizhou, China, Oct 2014:

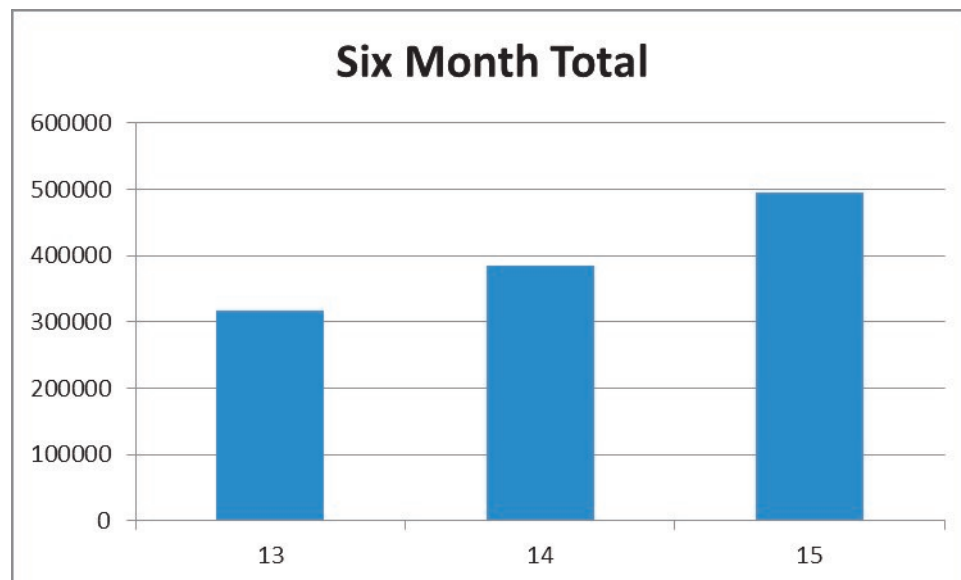
- How to publish your research
- Clinical case discussions

American Association for Respiratory Care. Las Vegas, NV Dec 2014

- Aerosol therapy during mechanical vent – what is the evidence?
- Asthma Open Forum
- Aerosol Open Forum
- Inhalation therapy – Not just albuterol
- How to read a scientific paper
- Summary of the RC Journal Conference on Aerosol Therapy

Karen Hendricks-Munoz, MD from the Division of Neonatal Medicine was nominated to be a standing reviewer for NIH Study Section IRAP -Infectious Diseases, Reproductive Health, Asthma and Pulmonary Disease- 2015-2021

External Salary Support Growing



Salary and Fringes dollars from grants and contracts for the first six months of the last 3 fiscal years (7/1 to 12/31). The 2015 total of just under half a million dollars is a 29% increase over 2014 and 56% higher than in 2013!