

APPENDICES

Appendix A	Disease Oriented Publications
Appendix B	Listing of PPRU Publications in POPPK
Appendix C	Traditional PK/PD Modeling Listing of Studies
Appendix D	Analytical Pharmacology Core Library Assays
Appendix E	PG Publications Emanating from the PPRU Network
Appendix F	PPRU Data Repository White Paper
Appendix G	List of Patient Oriented Publications
Appendix H	List of Publications in Neonatology
Appendix I	Trainee Publications and Career Progression
Appendix J	List of Publications with Multi Disciplinary Investigators

Appendix A

Disease Oriented Publications

Disease Oriented Publications

ADHD

Gilbert DL, Sallee FR, Zhang J, Lipps T, Wassermann EM. TMS-evoked cortical inhibition, a consistent marker of ADHD scores in Tourette Syndrome. *Biological Psychiatry*. 2005; 57: 1597-1600.

Gilbert DL, Ridel KR, Sallee FR, Zhang J, Lipps T, Wassermann EM. Comparison of the inhibitory and excitatory effects of ADHD medications methylphenidate and atomoxetine on motor cortex. *Neuropsychopharmacology*. 2006 Feb;31(2):442-9.

Michelson D, Faries D, Wernicke J, Kelsey D, Kendrick K, **Sallee FR**, Spencer T. Atomoxetine ADHD Study Group. Atomoxetine in the treatment of children and adolescents with attention-deficit/hyperactivity disorder: a randomized, placebo-controlled, dose-response study. *Pediatrics*. November 2001; 108(5): E83.

Michelson D, Allen AJ, Busner J, Casat C, Dunn D, Kratochvil C, Newcorn J, **Sallee FR**, Sangal B, Saylor K, West S, Kelsey D, Wernicke J, Trapp NJ, Harder D. Once-Daily Atomoxetine Treatment for Children and Adolescents With Attention Deficit Hyperactivity Disorder: A Randomized, Placebo-Controlled Study. *The American Journal of Psychiatry*. 2002; 159(11): 1896-1901.

Sallee FR, TSSG Study Group. Treatment of ADHD in children with tics; a randomized controlled study. *Neurology*. 2002; 58: 527-536.

Shader RI, Harmatz JS, Oesterheld JR, Parmelee DX, **Sallee FR**, Greenblatt DJ. Population pharmacokinetics of methylphenidate in children with attention-deficit hyperactivity disorder. *Journal of Clinical Pharmacology*. August 1999; 39(8): 775-785.

Asthma

Fost DA, Leung DY, Martin RJ, Brown EE, **Szeffler SJ**, Spahn JD. Inhibition of methylprednisolone elimination in the presence of clarithromycin therapy. *Journal of Allergy and Clinical Immunology*. June 1999; 103(6): 1031-1035.

Friesen CA, **Kearns GL**, Andre L, Neustrom M, Roberts CC, Abdel-Rahman SM. Clinical efficacy and pharmacokinetics of montelukast in dyspeptic children with duodenal eosinophilia. *J Pediatr Gastroenterol Nutr* 2004;38:343-351

Hamid QA, Wenzel SE, Hauk PJ, Tsicopoulos A, Wallaert B, Lafitte JJ, Chrousos GP, **Szeffler SJ**, Leung DY. Increased glucocorticoid receptor beta in airway cells of glucocorticoid-insensitive asthma. *American Journal of Respiratory and Critical Care Medicine*. May 1999; 159(5 Pt 1): 1600-1604.

Hauk PJ, Wenzel SE, Trumble AE, **Szeffler SJ**, Leung DY. Increased T-cell receptor vbeta8+ T cells in bronchoalveolar lavage fluid of subjects with poorly controlled asthma: a potential role for microbial superantigens. *Journal of Allergy and Clinical Immunology*. July 1999; 104(1): 37-45.

Kearns GL, Lu S, Maganti L, Li X, Migoya E, Ahmed T, Knorr B, Reiss TF. Pharmacokinetics and safety of montelukast oral granules in children 1 to 3 months of age with bronchiolitis. *J Clin Pharmacol* 2008 (in press)

Kelly KJ, Walsh-Kelly CM, Christenson P, Rogalinski S, Gorelick MH, Barthell EN, Grabowski L: Emergency department allies: A web-based multi-hospital pediatric asthma tracking system. *Pediatrics*. April 2006;117(4):S63-S70.

Kemp JP, Skoner DP, **Szeffler SJ**, Walton-Bowen K, Cruz-Rivera M, Smith JA. Once-daily budesonide inhalation suspension for the treatment of persistent asthma in infants and young children. *Annals of Allergy, Asthma & Immunology*. September 1999; 83(3): 231-239.

Knorr B, Nguyen HH, **Kearns GL**, Villaran C, Boza ML, Reiss TF, Rogers JD, Zhang J, Larson P, Spielberg SP. Montelukast dose selection in children ages 2 to 5 years: comparison of population pharmacokinetics between children and adults. *J Clin Pharmacol* 2001;41:612-619

Knorr B, Maganti L, Ramakrishnan R, Tozzi CA, Migoya E, **Kearns G**. Pharmacokinetics and safety of montelukast in children aged 3 to 6 months. *J Clin Pharmacol* 2006;46:620-627

Kwok MY, Walsh-Kelly CM, Gorelick MH, Grabowski L, **Kelly KJ**: National Asthma Education and Prevention Program (NAEPP) severity classification as a measure of disease burden in children with acute asthma. *Pediatrics*. April 2006;117(4):S71-S77.

Lebovitz DJ, Smtih PG, O'Riordan M, **Reed MD**. Pharmacokinetic properties and tolerability of single-dose terbutaline in patients with severe asthma treated in the pediatric intensive care unit. *Current Therapeutic Research*. 2004; 65: 98-111.

Migoya E, **Kearns GL**, Hartford A, Zhao J, van Adelsberg J, Tozzi CA, Knorr B, Deutsch P. Pharmacokinetics of montelukast in asthmatic patients 6 to 24 months old. *J Clin Pharmacol* 2005;44:487-494

Pearce RE, **Leeder JS**, **Kearns GL**. Biotransformation of fluticasone: in vitro characterization. *Drug Metab Dispos* 2006;34:1035-1040

Skoner DP, **Szeffler SJ**, Welch M, Walton-Bowen K, Cruz-Rivera M, Smith JA. Longitudinal growth in infants and young children treated with budesonide inhalation suspension for persistent asthma. *Journal of Allergy and Clinical Immunology*. February 2000; 105(2 Pt 1): 259-268.

Spahn JD, Leung DY, Chan MT, **Szeffler SJ**, Gelfand EW. Mechanisms of glucocorticoid reduction in asthmatic subjects treated with intravenous immunoglobulin. *Journal of Allergy and Clinical Immunology*. March 1999; 103(3 Pt 1): 421-426.

Szeffler SJ. Long term effects of budesonide or nedocromil in children with asthma. *New England Journal of Medicine*. 2000; 343(16): 1054-1063.

Vanden Burt JA, Busse WW, Martin RJ, **Szeffler SJ**, Donnell D.. Efficacy and safety overview of a new inhaled corticosteroid, QVAR (hydrofluoroalkane-beclomethasone extrafine inhalation aerosol) in asthma. *Journal of Allergy and Clinical Immunology*. Dec; 106(6):1209-26.

Wamboldt FS, Ho J, Milgrom H, Wamboldt MZ, Sanders B, **Szeffler SJ**, Bender BG. Prevalence and correlates of household exposures to tobacco smoke and pets in children with asthma. *Journal of Pediatrics*. 2002 Jul; 141(1):109-15.

Wamboldt MZ, Bihun JT, **Szeffler SJ**, Hewitt J. Perception of induced bronchoconstriction in a community sample of adolescents. *Journal of Allergy and Clinical Immunology*. 2000; 160(6): 1102-1107.

Whelan GJ, **Blumer JL**, Martin RJ, Szeffler SJ. Fluticasone propionate plasma concentration and systemic effect: Effect of delivery device and duration of administration. *Journal of Allergy and Clinical Immunology*. 2005; 116(3): 525-530.

Zeigler RS, Dawson C, Weiss S, **Szeffler SJ**. Relationships between duration of asthma and asthma severity among children in the childhood asthma management program (CAMP). I, description of methods. *Allergy Clinical Immunology*. 1999; 103: 376-387.

Atopic Dermatitis

Kennedy MJ, Sullivan JE, Doll MA, Griffin A, Hein DW. Slow acetylator N-acetyltransferase 2 genotype is associated with atopic dermatitis (AD) in children. *Clinical Pharmacology & Therapeutics*. 2006; 79(5): P6.

Autism

Asano E, Kuivaniemi H, Huq AH, Tromp G, Behen M, Rothermel R, Herron J, **Chugani DC**. A study of novel polymorphisms in the upstream region of vasoactive intestinal peptide receptor type 2 gene in autism. May 2001; 16(5): 357-363.

Asano E, **Chugani DC**, Muzik O, Behen M, Janisse J, Rothermel R, Mangner TJ, Chakraborty PK, Chugani HT. Autism in tuberous sclerosis complex is related to both cortical and subcortical dysfunction. *Society for Neuroscience Abstracts*. October 2001; 57(7): 1269-1277.

Chugani DC, Muzik O, Behen M, Rothermel R, Chugani HT. [C-11]Methyl-L-tryptophan PET patterns in tuberous sclerosis patients with autism and epilepsy. *Society for Neuroscience Abstracts*. 1999; 25: 489.

Edwards DJ, Chugani DC, Chugani HT, Chehab J, Malian M, **Aranda JV**. Pharmacokinetics of buspirone in autistic children. *Journal of Clinical Pharmacology*. May 2006; 46(5): 508-14. **PPRU Protocol # 10658S**.

Findling RL, McNamara NK, Gracious BL, O'Riordan MA, **Reed MD**, Demeter C, **Blumer JL**. Quetiapine in nine youths with autistic disorder. *Journal of Child and Adolescent Psychopharmacology*. 2004; 14(2): 287-294.

Nabi R, Serajee FJ, Chugani DC, Zhong H, Hua AH. Association of tryptophan 2,3 dioxxygenase gene polymorphism with autism. *American Journal of Medical Genetics*. February 2004; 125(1): 63-68.

Childhood Cancer

Adamson PC, **Blaney SM**, Widemann BC, Kitchen B, Murphy RF, Hannah AL, Cropp GF, Patel M, Gillespie AF, Whitcomb PG, Balis F. Pediatric phase 1 trial and pharmacokinetic study of the platelet-derived growth factor (PDGF) receptor pathway inhibitor (SU1010). *Clinical Cancer Research*. 2004; 53(6): 482-488.

Adamson PC, Widemann BC, Reaman GH, Seibel NL, Murphy RF, Gillespie AF, Balis FM. A Phase I Trial and Pharmacokinetic Study of 9-cis-Retinoic Acid (ALRT1057) in Pediatric Patients with Refractory Cancer: A Joint Pediatric Oncology Branch, National Cancer Institute, and Children's Cancer Group Study. *Clinical Cancer Research*. 2001; 7: 3034-3039.

Balis FM, **Blaney SM**, McCully CL, Bacher JD, Murphy RF, **Poplack DG**. Methotrexate distribution within the subarachnoid space after intraventricular and intravenous administration. *Cancer Chemotherapy and Pharmacology*. 2000; 45(3): 259-264.

Blaney S, Berg S, Vietti T, Pratt C, Hamre M, Dubowy R, Harris M, Weitman S, **Sullivan J**, Bernstein M. A phase I study of irinotecan in pediatric patients: a Pediatric Oncology Group study. *Clinical Cancer Research*. Jan. 2001; 7(1): 32-37.

Blaney SM, Heidman R, Berg S, **Adamson P**, Gillespie A, Greyer JR, Packer R, Matthay K, Jaeckle K, Cole D, Kuttesch N, **Poplack DG**, Balis FM. Phase I clinical trial of intrathecal topotecan in patients with neoplastic meningitis. *Journal of Clinical Oncology*. 2003; 21(1): 143-147.

Blaney SM, Balis FM, Berg S, Arndt CAS, Heideman R, Geyer JR, Packer R, **Adamson PC**, Jaeckle K, Klenke R, Aikin A, Murphy R, McCully C, **Poplack DG**. Intrathecal Mafosfamide: A Preclinical Pharmacology and Phase I Trial. *Journal of Clinical Oncology*. 2005; 23(7): 1555-1563.

Blaney SM, Balis FM, Berg S, Arndt CAS, Heideman R, Geyer JR, Packer R, **Adamson PC**, Jaeckle K, Klenke R, Aikin A, Murphy R, McCully C, **Poplack DG**. Intrathecal Mafosfamide: A Preclinical Pharmacology and Phase I Trial. *Journal of Clinical Oncology*. 2005; 23(7): 1555-1563.

Bomgaars L, McLeod HL. Pharmacogenomics of Pediatric Cancer. *Cancer*. Jul-Aug 2005; 11(4): 314-323.

Bomgaars LR, Megason GC, Pullen J, Weitman S, Kuhn J, Bernstein M, **Blaney S**. Phase I trial of MGI114 in pediatric patients with solid tumors. *Pediatric Blood and Cancer*. 2006 Aug;47(2):163-8.

Bomgaars L, Berg S, Kerr J, Klenke R, Kline N, **Blaney S**. Phase 1 clinical and pharmacokinetic trial of irinotecan administered weekly x 4, every 6 weeks in children with refractory cancer. *Pediatric Blood and Cancer*. 2006;46(1): 50-55.

Bomgaars LR, Geyer JR, Franklin J, Dahl G, Park J, Winick NJ, Klenke R, Berg SL, **Blaney SM**. Phase I trial of Intrathecal Liposomal Cytarabine in Children with Neoplastic Meningitis. *Journal of Clinical Oncology*. 2004; 22: 3916-3921.

Chintagumpala M, **Blaney SM**, **Bomgaars LR**, Aleksic A, Kuttesch JF, Klenke RA, Berg SL. Phase I and pharmacokinetic study of thalidomide with Carboplatin in children with cancer. *Journal of Clinical Oncology*. Nov 2004; 22(21): 4394-4400.

Crom WR, deGraaf SN, Synold T, Uges DR, Bloemhof H, Rivera G, **Christensen ML**, Mahmoud H, Evans WE. Pharmacokinetics of vincristine in children and adolescents with cancer. *Journal of Pediatrics*. 1999; 125: 642-649.

Daw NC, Furman WL, Stewart CF, Iacono LC, Krailo M, Bernstein ML, Dancy JE, Speights RA, **Blaney SM**, Reaman GH, **Adamson PA**. A phase I and pharmacokinetic study of gefitinib in children with refractory solid tumors: A Children's Oncology Group study. *Journal of Clinical Oncology*. 2005; 23: 6172-6180.

Fouladi M, Furman W, Chin T, Freeman B, Dudkin L, Stewart CF, Krailo M, Speights R, Houghton PJ, Wright J, **Adamson PC, Blaney SM**. Phase I study of depsipeptide in pediatric patients with refractory solid tumors. *Journal of Clinical Oncology*. 2006; 24(22): 3678-3685.

Hayashi RJ, **Blaney S**, Schuster J, Vietti T, Bernstein M. Phase 1 study of Paclitaxel administered twice weekly to children with refractory solid tumors: a pediatric oncology group study. *Journal of Pediatric Hematology and Oncology*. 2003; 25(7): 539-542.

Horton TM, Pati D, Plon SE, Thompson PA, **Bomgaars LR, Adamson PC**, Ingle AM, Wright J, Brockman AH, Paton M, **Blaney SM**. A phase 1 study of the proteasome inhibitor bortezomib in pediatric patients with refractory leukemia: a Children's Oncology Group study. *Clinical Cancer Research*, 2007 Mar 1; 13(5):1516-22.

Horton TM, Gannavarapu A, **Blaney SM**, D'Argenio DZ, Plon SE, Berg SL. Bortezomib interactions with chemotherapy agents in acute leukemia in vitro. *Cancer Chemotherapy and Pharmacology*. July 2006; 58(1): 13-23.

Horton TM, Plon SE, Gannavarapu A, **Blaney SM**, D'Argenio D, Berg SL. Bortezomib potentiation of chemotherapy agents in acute leukemia in vitro. *Cancer Chemotherapy and Pharmacology*. 2006; 58: 13-23.

Jeha S, Gaynon PS, Razzouk BI, Franklin J, Kadota R, Shen V, Luchtman-Jones L, Rytting M, **Bomgaars LR**, Rheingold S, Ritchey K, Albano E, Arceci RJ, Goldman S, Griffin T, Altman A, Gordon B, Steinherz L, Weitman S, Phase II study of clofarabine in pediatric patients with refractory or relapsed acute lymphoblastic leukemia. *Journal of Clinical Oncology*. April 2006; 24(12): 1917-1923. **PPRU Protocol # 10614, 10612**.

Jimeno A, Daw NC, Amador ML, Cusatis G, Kulesza P, Krailo M, Ingle AM, **Blaney SM, Adamson P**, Hidalgo M. Analysis of biologic surrogate markers from a Children's Oncology Group Phase I trial of gefitinib in pediatric patients with solid tumors. *Pediatric Blood and Cancer*. January 2006; Epub.

Kitchen BJ, Moser A, Lowe E, Balis FM, Widemann B, Anderson L, Strong J, **Blaney SM**, Berg SL, O'Brien M, **Adamson PC**. Thioguanine administered as a continuous intravenous infusion to pediatric patients is metabolized to the novel metabolite 8-hydroxy-thioguanine. *Journal of Pharmacology and Experimental Therapeutics*. Nov 1999; 291(2): 870-874.

Langevin AM, Weitman SD, Kuhn JG, Weintraub ST, Baruchel S, Margolis D, Furman W, Bernstein M, **Blaney S**, Vietti T. A phase 1 trial of rebeccamycin analogue (NSC #655649) in children with refractory solid tumors: a Pediatric Oncology Group Study. *Journal of Pediatric Hematology and Oncology*. 2003; 25(7): 526-533.

Lau L, Supko J, **Blaney S**, Hershon L, Seibel N, Krailo M, Qu W, Jimeno J, Bernstein M, Baruchel S. Phase I and pharmacokinetic study of ET-743 in children with refractory solid tumors: a Children's Oncology Group Study. *Clinical Cancer Research*. 2005; 11(Pt 2 of 2): 672-677.

Li XN, Su JM, Adesina AM, Wong KK, Perlaky L, Antalffy BA, **Blaney S**, Lau CC. Differential expression of survivin splice isoforms in medulloblastomas. *Neuropathology and Applied Neurobiology*. 2007 Feb;33(1):67-76.

Li XN, Parikh S, Shu Q, Jung HL, Chow CW, Perlaky L, Leung HC, Su J, **Blaney S**, Lau CC. Phenylbutyrate and Phenylacetate induce differentiation and inhibit proliferation of human medulloblastoma cell lines. *Clinical Cancer Research*. 2004; 10(3): 981-987.

Li XN, Shu Q, Su JMF, Perlaky L, **Blaney SM**, Lau CC. Valproic acid suppresses cell proliferation, induces apoptosis and senescence in medulloblastoma cells through p53-independent activation of p21Cip1, restoration of p16Ink4a/CDK4 pathway and down regulation of c-MYC gene expression. *Molecular Cancer Therapeutics*. 2005; 4(12): 1912-1922.

Longui CA, Vottero A, **Adamson PC**, Cole DE, Kino T, Monte O, Chrousos GP. Low glucocorticoid receptor alpha/beta ratio in T-cell lymphoblastic leukemia. *Hormone and Metabolic Research*. 2000; 32(10): 401-406.

Lowe ES, Kitchen BJ, Erdmann G, Stork LC, Bostrom BC, Hutchinson R, Holcenberg J, Reaman GH, Woods W, Franklin J, Widemann BC, Balis FM, Murphy RF, **Adamson PC**. Plasma pharmacokinetics and cerebrospinal fluid penetration of thioguanine in children with acute lymphoblastic leukemia. *Cancer Chemotherapy and Pharmacology*. 2001; 47(3): 199-205.

Marina N, Cochrane D, Harney E, Zomorodi K, **Blaney S**, Winick N, Bernstein M. Dose escalation and pharmacokinetics of pegylated liposomal doxorubicin (Doxil) in children with solid tumors: A Pediatric Oncology Group Study. *Clinical Cancer Research*. 2002; 8(2): 413-418.

Neville K, **Blaney S**, Bernstein M, Thompson P, Adams D, Aleksic A, Berg S. Pharmacokinetics of O-6-benzylguanine (O-6BG) in pediatric patients with central nervous systems tumors: a Pediatric Oncology Group Study. *Clinical Cancer Research*. Aug 2004; 10(15): 5072-5075.

Neville K, Thompson P, Parise RA, Aleksic A, Egorin M, Balis F, McGuffey L, McCully C, Berg S, **Blaney S**. Plasma and CSF pharmacokinetics of imatinib after intravenous and oral administration in nonhuman primates. *Clinical Cancer Research*. 2004; 10(7): 2525-2529.

Rheingold SR, Hogarty MD, **Blaney SM**, Zwiebel JA, Sauk-Schubert C, Chandula R, Krailo MD, **Adamson PC**; Children's Oncology Group Study. Phase I Trial of G3139, a bcl-2 antisense oligonucleotide, combined with doxorubicin and cyclophosphamide in children with relapsed solid tumors: a Children's Oncology Group Study. *Journal of Clinical Oncology*, 2007 Apr 20; 25(12):1512-8.

Soud AK, Dubowy RL, **Blaney SM**, Herson L, **Sullivan J**, McLeod WD, Bernstein ML. Phase 1 clinical and pharmacologic study of weekly cisplatin and irinotecan combined with amifostine for refractory solid tumors: Children's Oncology Group trial 9970. *Clinical Cancer Research*. 2003; 9(2): 703-710.

Thompson PA, Murry DJ, Rosner GL, Lunagomez S, **Blaney SM**, Berg SL, Camitta BM, Dreyer ZE, **Bomgaars LR**. Methotrexate pharmacokinetics in infants with acute lymphoblastic leukemia. *Cancer Chemotherapy and Pharmacology*, 2007 May;59(6):847-53.

Warren KE, Frank JA, Black JL, Hill RS, Duyn JH, Aiken AA, Lewis BW, **Adamson PC**, Balis FM. Proton magnetic resonance spectroscopic imaging in children with recurrent primary brain tumors. *Journal of Clinical Oncology*. 2000; 18(5): 1020-1026.

Weigel BJ, **Blaney SM**, Reid JM, Safgren SL, Bagatell R, Kersey J, Neglia JP, Ivy SP, Ingle AM, Whitesell L, Gilbertson RJ, Krailo M, Ames M, **Adamson PC**. A phase I study of 17-allylaminogeldanamycin in relapsed/refractory pediatric patients with solid tumors: a Children's Oncology Group study. *Clinical Cancer Research*, 2007 Mar 15; 13(6):1789-93.

Widemann BC, Balis FM, Kempf-Bielack B, Bielack S, Pratt CB, Ferrari S, Bacci G, Craft AW, **Adamson PC**. High-dose methotrexate-induced nephrotoxicity in patients with osteosarcoma. *Cancer*. 2004; 100(10): 2222-2232.

Widemann BC, Salzer WL, Arceci RJ, **Blaney SM**, Fox E, End D, Gillespie A, Whitcomb P, Palumbo JS, Pitney A, Jayaprakash N, Zannikos P, Balis FM. Phase I trial and pharmacokinetic study of the farnesyltransferase inhibitor tipifarnib (R115777) in children with refractory solid tumors or neurofibromatosis type I and plexiform neurofibromas. *Journal of Clinical Oncology*. January 2006; 24(3): 507-516.

Widemann BC, Balis FM, Shalabi A, Boron M, O'Brien M, Cole DE, Jayaprakash N, Ivy P, Castle V, Muraszko K, Moertel C, Trueworthy R, Reaman G, **Poplack D**, Adamson PC. Treatment of accidental intrathecal methotrexate overdoses with carboxypeptidase-G2. *Journal of National Cancer Institute*. 2004; 96(20): 1557-1559.

Wong KK, Chang YM, Tsang YTM, Perlaky L, Su J, Adesina A, Armstrong DL, Bhattacharjee M, Dauser R, **Blaney S**, Chintagumpala M, Lau CC. Expression analysis of juvenile pilocytic astrocytomas by oligonucleotide microarray reveals two potential subgroups. *Clinical Cancer Research*. 2005; 65(1): 76-84.

Zhang L, Plon S, Nuchtern JG, Burlingame S, **Blaney S**, Berg S. Cyclin D1 and cisplatinum cytotoxicity in primary neuroblastoma cell lines. *Clinical Cancer Research*. 2004; 15(9): 883-888.

Cystic Fibrosis

James LP, Stowe CD, Farrar H, Menendez AA, Argao EA. The pharmacokinetics of oral ranitidine in children and adolescents with cystic fibrosis. *Journal of Clinical Pharmacology*. 1999; 39: 1242-1247.

Kennedy MJ, Scripture CD, Kashuba ADM, Scott CS, Gotschall RR, Gaedigk A, **Kearns GL**. Assessment of hepatic enzyme activity in children with cystic fibrosis using caffeine and dextromethorphan phenotyping. *Clinical Pharmacology & Therapeutics*. 2004; 75(3): 163-171.

Le Brun PPL de Boer AH, Mannes GPM, de Fraiture DMI, Brimicombe RW, Touw DJ, **Vinks AA**, Frijlink HW, Heijerman HGM. Dry powder inhalation of antibiotics in Cystic Fibrosis therapy. Part 2: Inhalation of a novel colistin dry powder formulation. Proof of principle in healthy volunteers and patients. *European Journal of Pharmaceutics and Biopharmaceutics*. 2002; 54: 25-32.

Moss RB, Mayer-Hamblett N, Wagener J, Daines C, Hale K, Ahrens R, Gibson RL, Anderson P, Retsch-Bogart G, Nasr SZ, Noth I, Waltz D, Zeitlin P, Ramsey B, Starko K. Randomized, double-blind, placebo-controlled, dose-escalating study of aerosolized interferon gamma-1b in patients with mild to moderate cystic fibrosis lung disease. *Pediatric Pulmonology*. 2005; 39: 209-218.

Reed MD, Stern RC, O'Riordan MA, **Blumer JL**. The pharmacokinetics of colistin in patients with cystic fibrosis. *American Society for Clinical Pharmacology and Therapeutics*. June 2001; 41(6): 645-654.

Vinks AA, Den Hollander JG, Overbeek SE, Jelliffe RW, Mouton JW. Population pharmacokinetic analysis of nonlinear behavior of piperacillin during intermittent or continuous infusion in patients with cystic fibrosis. *Antimicrobial Agents and Chemotherapy*. 2003; 47(2): 541-547.

Diabetes

Attia N, Caprio S, Jones TW, Heptulla R, Holcombe J, Silver D, Sherwin RS, **Tamborlane WV**. Changes in free insulin-like growth factor-1 and leptin concentrations during acute metabolic decompensation in insulin withdrawn patients with type 1 diabetes. *Journal of Clinical Endocrinology and Metabolism*. July 1999; 84(7):

Barnie A, Cleary P, Genuth S, Martin C, Mayfield R, **Tamborlane WV**, Wesche J, Shannon H. The DCCT/EDIC study group, epidemiology of diabetes interventions and complications (EDIC): design and implementation and preliminary results of long-term follow-up of the diabetes control and complications trial cohort. *Diabetes Care*. 1999; 22: 99-111.

Boland EA, Grey M, Oesterle A, Fredrickson L, **Tamborlane WV**. Continuous subcutaneous insulin infusion. A new way to lower risk of severe hypoglycemia, improve metabolic control, and enhance coping in adolescents with type 1 diabetes. *Diabetes Care*. November 1999; 22(11): 1779-1784.

Boland EA, Grey M, Mezger J, **Tamborlane WV**. A summer vacation from diabetes: evidence from a clinical trial. *The Diabetes Educator*. Jan-Feb 1999; 25(1): 31-40. 2324-2328.

Capparelli EV, Bloom BT, Kueser TJ, Oelberg DG, Bifano EM, White RD, Schelonka Heptulla RA, Rodriguez LM, **Bomgaars LR**, Haymond MW. The Role of Amylin and Glucagon in the Dampening of Glycemic Excursions in Children with Type I Diabetes. *Diabetes*. April 2005; 54(4): 1100-1107. **PPRU Protocol # 10650s**.

Christensen ML, Meibohm B, **Capparelli EV**, Velasquez-Mieyer P, Burghen GA, Tamborlane WV. Single- and multiple-dose pharmacokinetics of pioglitazone in adolescents with type 2 diabetes. *Journal of Clinical Pharmacology*. October 2005; 45(10): 1137-1144.

Heart Disease

Adamson PC, Rhodes LA, Saul JP, Il MD, Epstein MR, Moate P, Boston R, Schreiner MS. The pharmacokinetics of esmolol in pediatric subjects with supraventricular arrhythmias. *Pediatric Cardiology*. 2006 Jul-Aug; 27(4):420-7. Epub 2006 Jul 11.

Mainwaring RD, **Capparelli E**, Schell K, Nelson JC. Pharmacokinetic evaluation of triiodothyronine supplementation following modified Fontan Procedure. *Circulation*. 2000; 101: 1423-1429.

Van Overmiere B, Touw D, Schepens PJ, **Kearns GL**, **van den Anker JN**. Ibuprofen pharmacokinetics in preterm infants with patent ductus arteriosus. *Clinical Pharmacology & Therapeutics*. 2001; 70: 336-343.

Zuppa AF, Nicolson SC, **Adamson PC**, Wernovsky G, Mondick JT, Burnham N, Hoffman TM, Gaynor JW, Davis LA, Greeley WJ, Spray TL, **Barrett JS**. Population pharmacokinetics of milrinone in neonates with hypoplastic left heart syndrome undergoing stage I reconstruction. *Anesthesia and Analgesia*. April 2006; 102(4):1062-1069. **PPRU Protocol # MSCIDA**.

HIV

Capparelli E, Letendre SL, Ellis RJ, Patel P, Holland D, McCutchan JA. Abacavir Population Pharmacokinetics in Plasma and CSF. *Antimicrobial Agents and Chemotherapy*. 2005; 49: 2504-2506.

Capparelli EV, Holland D, Okamoto C, Gragg B, Durelle J, Marquie-Beck J, van den Brande G, Ellis R, Letendre S. Lopinavir Concentrations in Cerebrospinal Fluid Exceed the 50% Inhibitory Concentration for HIV. *AIDS*. 2005;19: 949-952.

Capparelli EV, Englund JA, Connor JD, Spector SA, **McKinney RE**, Palumbo P, Baker CJ, PACTG 152 Team. Population Pharmacokinetics and Pharmacodynamics of Zidovudine in HIV-Infected Infants and Children. *Journal of Clinical Pharmacology*. 2003; 43: 133-140.

Capparelli EV, Mirochnick M, Dankner W, Blanchard S, Mofenson L, McSherry G, Gay H, Ciupak G, Smith B, Connor JD. Pharmacokinetics and Tolerance of Zidovudine in Preterm Infants. *The Journal of Pediatrics*. 2003; 47-52.

Capparelli EV, Holland D, Okamoto C, Gragg B, Durelle J, Marquie-Beck J, van den Brande G, Ellis R, Letendre S. Lopinavir Concentrations in Cerebrospinal Fluid Exceed the 50% Inhibitory Concentration for HIV. *AIDS*. 2005;19: 949-952.

Chokephaibulkit K, Plipat N, Cressey TR, Frederix K, Phongsamart W, **Capparelli E**, Kolladarungkri T, Vanrapar N. Steady State Pharmacokinetics of Nevirapine in HIV-Infected Thai Children Receiving a Fixed-Dose Combination of Stavudine-Lamivudine-Nevirapine (GPO-VIR). *AIDS*. 2005; 19: 1495-1499.

Chokephaibulkit K, Plipat N, Cressey TR, Frederix K, Phongsamart W, **Capparelli E**, Kolladarungkri T, Vanrapar N. Steady State Pharmacokinetics of Nevirapine in HIV-Infected Thai Children Receiving a Fixed-Dose Combination of Stavudine-Lamivudine-Nevirapine (GPO-VIR). *AIDS*. 2005; 19: 1495-1499.

Cressey T, Jourdain G, Lallemand M, Kunkeaw S, **Capparelli E**, Mirochnick M. Persistence of Nevirapine (NVP) Exposure During the Postpartum Period after Intrapartum Single Dose NVP in Addition to Zidovudine Prophylaxis for the Prevention of Mother-to Child Transmission of HIV-1. *Journal of Acquired Immune Deficiency Syndromes*. 2005; 38: 283-288.

Englund JA, Raskino C, Vavro C, Palumbo P, Ross LL, **McKinney RE**, Nikolic-Djokic D, Colgrove RC, Baker CJ. Mutations linked to drug resistance, human immunodeficiency type 1 biologic phenotype and their association with disease progression in children receiving nucleoside reverse transcriptase inhibitors. *Pediatric Infectious Disease Journal*. 2004; 23: 15-22.

Kovacs A, Cowles MK, Britto P, **Capparelli E**, Fowler MG, Jeremy RJ, Moye J, McIntosh K, Rathore MH, Pitt J, Husson RN. Pharmacokinetics of Didanosine and Drug Resistance Mutations in Infants Exposed to ZDV during Gestation or Postnatally and Treated with Didanosine or Zidovudine in the First Three Months of Life. *Pediatric Infectious Disease Journal*. 2005; 24: 503-509.

Kovacs A, Montepiedra G, Carey V, Pahwa S, Weinberg A, Frenkel L, **Capparelli E**, Mofenson L, Smith E, McIntosh K, Burchett SK. Immune Reconstitution following HAART in Children with Advanced or Progressive HIV Disease and Complete or Partial Viral Load Response. *Journal of Infectious Diseases*. 2005; 192: 296-302.

Letendre SL, **Capparelli EV**, Ellis RJ, McCutchan JA. Indinavir population pharmacokinetics in plasma and cerebrospinal fluid. The HIV Neurobehavioral Research Center Group. *Antimicrobial Agents and Chemotherapy*. August 2000; 44(8): 2173-2175.

McCoig C, Castrejon MM, Saavedra-Lozano J, Castano E, Baez C, Lanier ER, Saez-Llorens X, Ramilo O. Cerebrospinal fluid and plasma concentrations of proinflammatory mediators in human immunodeficiency virus-infected children. *Pediatric Infectious Disease Journal*. 2004; 23: 114-118.

Mirochnick M, **Capparelli EV**, **Connor JD**. Pharmacokinetics of Zidovudine in Infants: A Population Analysis Across Studies. *Clinical Pharmacology & Therapeutics*. 1999; 66: 16-24.

Mirochnick M, Stek A, Acevedo M, Keller M, Holland D, **Capparelli E**, Connor J, Huang S, Hughes M, Watts H, Monfenson Lynne, Bryson Y. Safety and Pharmacokinetics of Nelfinavir Co-administered with Zidovudine and Lamivudine in Infants during the First 6 Weeks of Life. *Journal of Acquired Immune Deficiency Syndromes*. 2005; 39: 189-194.

Pocernich CB, Boyd-Kimball D, Poon HF, Thongboonkerd V, Lynn BC, Klein JB, Calabrese V, Nath A, Butterfield DA. Proteomics analysis of human astrocytes expressing the HIV protein Tat. *Brain Research. Molecular Brain Research*. Feb 2005; 133(2): 307-316.

Poon H, Boyd-Kimball D, Lynn BC, Nath A, Klein JB, Butterfield DA, Pocernich CB. Proteomic analysis of oxidatively modified proteins induced by the mitochondrial toxin 3-nitropropionic acid in human astrocytes expressing the HIV protein tat. *Brain Research. Molecular Brain Research*. Feb 2005; 133(2): 299-306.

Rakhmanina NY, **Capparelli EV**, **van den Anker JN**, Williams K, Sever JL, Spiegel HM, Soldin SJ. Nevirapine concentration in nonstimulated saliva: an alternative to plasma sampling in children with human immunodeficiency virus infection. *Therapeutic Drug Monitoring*, 2007 Feb; 29(1):110-7.

Shapiro R, Holland D, **Capparelli E**, Lockman S, Thior I, Wester C, Stevens L, Peter T, Connor J, Mirochnick M. Antiretroviral Concentrations in Breast-Feeding Infants of Women in Botswana Receiving Antiretroviral Treatment. *Journal of Infectious Diseases*. 2005; 192(1): 720-727.

Shapiro RL, Holland DT, **Capparelli E**, Lockman S, Thior I, Wester C, Stevens L, Peter T, Essex M, Connor JD, Mirochnick M. HIV inhibitory Serum Concentrations of Antiretrovirals Detected in Breastfeeding Infants of Women Receiving Antiretroviral Treatment in Botswana. *Journal of Infectious Diseases*. 2005; 192: 720-727.

Singh KK, Barroga CF, Hughes MD, Chen J, Raskino C, **McKinney RE**, Spector SA. Prevalence of chemokine and chemokine receptor polymorphisms in seroprevalent children with symptomatic HIV-1 infection in the U.S. *Journal of Acquired Immune Deficiency Syndromes*. 2004; 35: 309-313.

Walson PD, Cox Shareen, Utkin Ilya, Gerber Nicholas, Crim Linda, **Brady Michael**, Koranyi Katalin. Clinical Use of a Simultaneous HPLC Assay for Indinavir, Saquinavir, Ritonavir and Nelfinavir in Children and Adults. *Therapeutic Drug Monitor*. 2003; 25: 650-656.

Weintrob AC, Hamilton JD, Hahn C, Klinzman D, Moyo G, Zdunek D, Hess D, **Benjamin DK**, Stapleton JT. Active or Prior GB Virus C Infection Does Not Protect Against Vertical Transmission of HIV in Co-Infected Women from Tanzania. *Clinical Infectious Disease*. 2004; 38: e46-48.

Yasuda JM, Miller C, Currier JS, Forthal DN, Kemper CA, Beall GN, Tilles JG, **Capparelli EV**, McCutchan JA, Haubrich RH, CCTG. The correlation between plasma concentrations of protease inhibitors, medication adherence, and virologic outcome in HIV-infected patients. *Antiviral Therapy*. 2004; 9: 753-761.

Hypertension

Blumer J, Daniels S, Dreyer W, Batsky D, **Walson P**, Roman D, Ouellet D. Pharmacokinetics of Quinapril in Children: Assessment During Substitution for Chronic Angiotensin-Converting Enzyme Inhibitor Treatment. *Journal of Clinical Pharmacology*. 2003; 43: 128-132.

Hogg RJ, Delucchi A, Sakihara G, **Wells TG**, Tenney F, Batsky DL, **Blumer JL**, Vogt BA, Lo MW, Hand E, Panebianco D, Rippley R, Shaw W, Shahinfar S., A multicenter study of the pharmacokinetics of lisinopril in pediatric patients with hypertension. *Pediatric Nephrology*, 2007 May; 22(5):695-701

Rippley R, Shahinfar S, Hogg R, Sakarcian A, Delucchi A, Blowey D, **Walson P**, Vogt B, Murphy G, Lo M, Hand E, Shaw W, **Wells T**. Pharmacokinetics of enalapril in hypertensive children and infants. *American Journal of Hypertension*. 2000; 13(4): S126.

Sakarcan A, Tenney F, Wilson JT, Stewart JJ, Adcock KG, **Wells TG**, Vachharajani NN, Hadjilambri OW, Slugg P, Ford NF, Marino MR. The pharmacokinetics of irbesartan in hypertensive children and adolescents. *Journal of Clinical Pharmacology*. July 2001; 41(7): 742-749. **PPRU Protocol # 10218**.

Shahinfar S, Cano F, Soffer BA, Ahmed T, Santoro EP, Shang Z, Cleim G, Miller K, Vogt B, **Blumer J**, Briazgounov I. A double-blind, dose-response study of losartan in hypertensive children. *American Journal of Hypertension*. 2005; 18: 183-190.

Stowe CD, Gardner SF, Gist CC, Schulz EG, **Wells TG**. 24 Hour Ambulatory Blood Pressure Monitoring in Male Children Receiving Stimulant Therapy. *Annals of Pharmacotherapy*. 2002; 36: 1142-1149.

Wells TG, Rippley R, Hogg R, Sakarcan A, Blowey D, **Walson P**, Vogt B, Deluchhi A, Lo MW, Hand E, Panebianco D, Shaw W, Shanifar S. The Pharmacokinetics of Enalapril in Children and Infants with Hypertension. *Journal of Clinical Pharmacology*. Oct 2001; 41(10): 1064-1074.

Wells T, Frame V, Soffer B, Shaw W, Zhang Z, Herrera P, Shahinfar S. Enalapril Pediatric Hypertension Collaborative Study Group. A double-blind, placebo-controlled, dose-response study of the effectiveness and safety of enalapril for children with hypertension. *Journal of Clinical Pharmacology*. August 2002; 42(8): 870-880.

Infectious Diseases

Acosta EP, Brundage RC, King JR, **Sanchez PJ**, Sood S, Agrawal V, Homans J, Jacobs RF, Lang D, Romero JR, Griffin J, Cloud G, Whitley R, Kimberlin DW. Ganciclovir population pharmacokinetics in neonates following intravenous administration of ganciclovir and oral administration of a liquid valganciclovir formulation. *Clinical Pharmacology and Therapeutics*, 2007 Jun; 81(6):867-72.

Abdel-Rahman SM, Jacobs RF, Massarella J, Kauffman RE, Bradley JS, Kimko HC, **Kearns GL**, Shalayda K, Curtin C, Maldonado SD, **Blumer JL**. Single-Dose Pharmacokinetics of Intravenous Itraconazole and Hydroxypropyl- β -Cyclodextrin in Infants, Children and Adolescents. *Antimicrobial Agents and Chemotherapy*, 2007 May 21.

Aranda JV, Cataldi L, Fanos V. Clinical pharmacology of antimicrobials for urinary tract infections in newborns and young infants. *Journal of Chemotherapy*. May 2006; 18(3): 14-15.

Benjamin DK, DeLong ER, Cotten MC, Garges HP, Clark RH. Mortality Following Blood Culture in Premature Infants: Increased with Gram-negative Bacteremia and Candidemia, but Not Gram-positive Bacteremia. *Journal of Perinatology*. 2004; 24: 175-180.

Benjamin DK, DeLong ER, Cotten MC, Garges HP, Clark RH. Postconception Age and Other Risk Factors Associated with Mortality Following Gram-negative Rod Bacteremia. *Journal of Perinatology*. 2004; 24:169-174.

Benjamin DK, Driscoll T, Siebel NL, Gonzalez CE, Roden MM, Dowell JA, Schranz J, Walsh TJ. Safety and pharmacokinetics of intravenous anidulafungin in children with neutropenia at high risk for invasive fungal infections. *Antimicrobial Agents and Chemotherapy*. 2006 Feb;50(2):632-8.

Blumer JL, Reed MD, Kaplan EL, Drusano GL. Explaining the poor bacteriologic eradication rate of single-dose ceftriaxone in a group A streptococcal tonsillopharyngitis: A reverse engineering solution using pharmacodynamic modeling. *Pediatrics*. 2005; 116(4): 927-932.

Bradley JS, **Kearns GL, Reed MD, Capparelli EV**, Vincent J. Pharmacokinetics of a fluoronaphthyridone, trovafloxacin (CP99, 219), in infants and children following administration of a single intravenous dose of alatrofloxacin. *Antimicrobial Agents and Chemotherapy*. 2000; 44(5): 1195-1199.

Capparelli E, Reed MD, Bradley JS, **Kearns GL**, Jacobs RF, Damle BD, **Blumer JL**, Grasela DM. Pharmacokinetics of gatifloxacin in infants and children. *Antimicrobial Agents and Chemotherapy*. 2005; 49(3):1106-1112. **PPRU Protocol # 10252.**

Capparelli EV, Lane JR, Romanowski GL, McFeely EJ, Murray W, Sousa P, Kildoo C, Connor JD. The influences of renal function and maturation on vancomycin elimination in newborns and infants. *Journal of Clinical Pharmacology*. 2001; 41: 927-934.

Chavez-Bueno S, Mejias A, Gomez AM, Olsen KD, Rios AM, Fonseca-Aten M, Ramilo O, **Jafri HS**. Respiratory syncytial virus-induced acute and chronic airway disease is independent of genetic background: An experimental murine model. *Virology Journal*. 2005; 2: 46.

Chien S, **Wells TG, Blumer JL, Kearns GL**, Bradley JS, Bocchini JA, Natarajan J, Maldonado S, Noel GJ. Levofloxacin pharmacokinetics in children. *Journal of Clinical Pharmacology*. 2005; 45: 153-160. **PPRU Protocol # 10336/10340.**

DeHoog M, Mouton JW, Schoemaker RC, Verduin CM, **van den Anker JN**. Extended interval dosing of tobramycin in neonates; implications for therapeutic drug monitoring. *Clinical Pharmacology & Therapeutics*. 2002 May; 71(5):349-58.

DeHoog M, Schoemaker RC, **van den Anker JN, Vinks AA**. Nonmem and Npem2 population modeling: a comparison using tobramycin data in neonates. *Therapeutic Drug Monitoring*. 2002 Jun; 24(3): 359-365.

DeHoog M, Schoemaker RC, Mouton JW, **van den Anker JN**. Vancomycin population pharmacokinetics in neonates. *Clinical Pharmacology & Therapeutics*. 2000; 67: 360-367.

Fonseca-Aten M, Rios AM, Mejias A, Chavez-Bueno S, Katz K, Gomez AM, **McCracken GH**, Hardy RD. Mycoplasma pneumoniae induces host-dependent pulmonary inflammation and airway obstruction in mice. *American Journal of Respiratory Cell and Molecular Biology*. 2005; 32: 201-210.

Fonseca-Aten M, Salvatore CM, Mejias A, Rios AM, Chavez-Bueno S, Katz K, Gomez AM, **McCracken GH**, Hardy RD. Evaluation of LBM415 (NVP PDF-713), a Novel Peptide Deformylase Inhibitor, for Treatment of Experimental Mycoplasma pneumoniae Pneumonia. *Antimicrobial Agents and Chemotherapy*. 2005; 49:4128-4136.

Frattarelli DA, Ergun H, Lulic-Botica M, **Aranda JV**. Vancomycin elimination in human infants with intrauterine growth retardation. *Pediatric Infectious Disease Journal*. Nov 2005; 24(11): 979-83

Goldstein S, Murry DJ, Sowinski KS, Aleksic A, **Blaney S**. Meropenem pharmacokinetics in children and adolescents receiving hemodialysis. *Pediatric Nephrology*. 2001; 16(12): 1015-1018.

Hauck W, Samlalsingh-Parker J, Glibetic M, Ricard G, Beaudoin MC, Noya FJ, **Aranda JV**. Deregulation of cyclooxygenase and nitric oxide synthase gene expression in the inflammatory cascade triggered by experimental group B streptococcal meningitis in the newborn brain and cerebral microvessels. *Seminars in Perinatology*. June 1999; 23(3): 250-260.

Jacobs RF, Maples HD, **Aranda JV**, Espinoza GM, Knirsch C, Chandra R, Fisher JM, **Kearns GL**. Pharmacokinetics of Intravenously Administered Azithromycin in Pediatric Patients. *The Pediatric Infectious Disease Journal*. January 2005; 24(3): 34-39. **PPRU Protocol # 10548**.

Komoroski EM, Portilla M, Krebel MS, Krebel SR, **Kearns GL**. Single dose intramuscular ceftriaxone for uncomplicated cystitis in children and adolescents. *Current Therapeutic Research, Clinical and Experimental*. 1999; 60: 580-594.

Lowry JA, Corry A, Fitzmaurice L, Jackson MA, **Kearns GL**. Coadministration of mefloquine and chloroquine: use of a pharmacokinetic based approach to reduce toxicity. *Pediatric Infectious Disease Journal*. 2001; 20: 223-224.

Rios AM, Fonseca-Aten M, Mejias A, Chavez-Bueno S, Katz K, Gomez AM, **McCracken GH**, Ramilo O, Hardy RD. Microbiologic and immunologic evaluation of a single high dose of azithromycin for treatment of experimental Mycoplasma pneumoniae pneumonia. *Antimicrobial Agents and Chemotherapy*. 2005; 49:3970-3973.

Saez_Llorens X, Moreno MT, Ramilo O, **Sanchez PJ**, Top FH, Connor EM. Safety and pharmacokinetics of palivizumab therapy in children hospitalized with respiratory syncytial virus infection. *Pediatric Infectious Disease Journal*. 2004; 23: 707-712.

Snedden S, Rudoy R, Arrieta A, **Blumer J**. Meropenem versus cefotaxime based therapy for the initial treatment of infants and children hospitalized with non CNS infections. *Clinical Drug Investigations*. 1999; 17(1): 9-20.

Ververs TF, van Dijk A, **Vinks AA**, Blankestijn PJ, Savelkoul JF, Meulenbelt J, Boereboom FT. Pharmacokinetics and dosing regimen of meropenem in critically ill patients receiving continuous venovenous hemofiltration. *Critical Care Medicine*. October 2000; 28(10): 3412-3416.

Walsh TJ, **Adamson PC**, Seibel NL, Flynn PM, Neely MN, Schwartz C, Shad A, Kaplan SL, Roden MM, Stone JA, Miller A, Bradshaw SK, Li SX, Sable CA, Kartsonis NA. An open-label, sequential dose-escalation study to investigate the pharmacokinetics, safety, and tolerability of Caspofungin in children and adolescents. *Antimicrobial Agents and Chemotherapy*. 2005 Nov;49(11):4536-45.

Walsh TJ, Karlsson MO, Driscoll T, Arguedas AG, **Adamson P**, Saez-Llorens X, Vora AJ, Arrieta AC, **Blumer J**, Luster I, Milligan P, Wood N. Pharmacokinetics and safety of intravenous voriconazole in children after single or multiple-dose administration. *Antimicrobial Agents and Chemotherapy*. 2004; 48(6): 2166-2172.

Walsh TJ, Karlsson MO, Driscoll T, Arguedas AG, **Adamson P**, Saez-Llorens X, Vora AJ, Arrieta AC, **Blumer J**, Luster I, Milligan P, Wood N. Pharmacokinetics and safety of intravenous voriconazole in children after single or multiple-dose administration. *Antimicrobial Agents and Chemotherapy*. 2004; 48(6): 2166-2172.

Inflammatory Bowel Disease

Stephens MC, Baldassano RN, York A, Widemann B, Pitney AC, Jayaprakash N, **Adamson PC**. The Bioavailability of Oral Methotrexate in Children with Inflammatory Bowel Disease. *Journal of Pediatric Gastroenterology and Nutrition*. 2005; 40(4): 445-449.

Pain Management

DeWildt SN, **Kearns GL**, Murry DL, Abdel-Rahman SM, **van den Anker JN**. Pharmacokinetics and metabolism of oral midazolam in preterm infants. *British Journal of Clinical Pharmacology*. 2002; 53(4): 390-392.

de Wildt SN, de Hoog M, **Vinks AA**, van der Giesen E, **van den Anker JN**. Population pharmacokinetics and metabolism of midazolam in pediatric intensive care patients. *Critical Care Medicine*. 2003; 31(7): 1952-1958.

Finkel J, Finley A, Greco C, Weisman S, Zeltzer L. Transdermal Fentanyl in the Management of Children with Chronic Severe Pain: Results from an International Study. *Cancer*. 2005 Dec 15;104(12):2847-57.

Finkel JC, Pestieau SR, Quezado ZM. Ketamine as an Adjuvant for Treatment of Cancer Pain in Children and Adolescents. *The Journal of Pain: Official Journal of the American Pain Society*, 2007 Jun; 8(6):515-521.

Kauffman R, **Leih-Lai M**, Uy H, Aravind M. Enantiomer-selective pharmacokinetics and metabolism of ketorolac in children. *Clinical Pharmacology & Therapeutics*. 1999; 65: 382-388.

Lehr VT, Cepeda E, Frattarelli DA, Thomas R, LaMothe J, **Aranda JV**. Lidocaine 4% cream compared with lidocaine 2.5% and prilocaine 2.5% or dorsal penile block for circumcision. *American Journal of Perinatology*. July 2005; 22(5): 231-237. **PPRU Protocol # 10522**.

Lieh-Lai MW, Kauffman RE, Uy HG, Danjin M, Simpson PM. A randomized comparison of ketorolac tromethamine and morphine for postoperative analgesia in critically ill children. *Critical Care Medicine*. December 1999; 27(12): 2786-2791.

Lugo RA, **Kern S**. Clinical pharmacokinetics of oxycodone. *Journal of Pain & Palliative Care Pharmacotherapy*. 2004; 18(4): 17-30.

Marshall J, Rodarte, **Blumer JL**, Khoo, Akbari, **Kearns GL**. Pediatric pharmacodynamics of midazolam oral syrup. *Journal of Clinical Pharmacology*. June 2000; 40(6): 578-589. **PPRU Protocol # 10085**.

Myers AB, **Sullivan JE**, Koller DM, Godambe SA, **Kennedy MJ**. Correlation of CYP2D6 genotype with response to oxycodone in orthopedic injury related pain. *Clinical Pharmacology & Therapeutics*. 2006; 79(2): P18.

Prescilla RP, Frattarelli DA, Haritos D, **Aranda JV**, Edwards DJ. Pharmacokinetics of Rofecoxib in Children With Sickle Cell Hemoglobinopathy. *Journal of Pediatric Hematology and Oncology*. October 2004; 26(10): 661-664. **PPRU Protocol # 10300**.

Tutag Lehr V, Cepeda E, Frattarelli DAC, Thomas R, Whitty JE, Aranda JV. Lidocaine 4% cream (L.M.X.4) for anesthesia during newborn circumcision. *Obstetrics & Gynecology*. 2004; 103(4): S37. **PPRU Protocol # 10522**.

Wheeler M, **Lugo RA**, Birmingham PK, Heffner CL, Coté C. The pharmacokinetics of orally administered formulation of fentanyl citrate in children undergoing general anesthesia. *Anesthesia and Analgesia*. November 2004; 99(5): 1347-1351.

Psychiatric Disorders

Findling RL, McNamara NK, O'Riordan MA, **Reed MD**, Demeter CA, Branicky LA, **Blumer JL**. An open-label pilot study of St. John's wort in juvenile depression. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2003; 42(8): 908-914.

Findling RL, **Reed MD**, O'Riordan MA, **Blumer JL**. Paroxetine pharmacokinetics in depressed children and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry*. August 1999; 38(8): 952-959.

Findling RL, McNamara NK, Branicky LA, Schluchter MD, Lemon E, **Blumer JL**. A double-blind pilot study of risperidone in the treatment of conduct disorder. *American Academy of Child and Adolescent Psychiatry*. 2000; 39(4): 509-516.

Findling RL, McNamara NK, Gracious BL, Youngstrom EA, Stansbrey RJ, **Reed MD**, Demeter CA, Branicky LA, Fisher KE, Calabrese JR. Combination lithium and divalproex sodium in pediatric bipolarity. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2003; 42(8): 895-901.

Findling RL, McNamara NK, Youngstrom EA, Stansbrey R, Gracious BL, **Reed MD**, Calabrese JR. Double-blind 18-month trial of lithium versus divalproex maintenance treatment in pediatric bipolar disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2005; 49(3): 409-417.

Findling RL, McNamara NK, Stansbrey R, Gracious BL, Whipkey RE, Demeter CA, **Reed MD**, Youngstrom EA, Calabrese JR. Combination lithium and divalproex sodium in pediatric bipolar symptom re-stabilization. *J Am Acad Child Adolesc Psychiatry*. February 2006; 45(2): 142-148.

Findling RL, Frazier TW, Youngstrom EA, McNamara NK, Stansbrey RJ, Gracious BL, **Reed MD**, Demeter CA, Calabrese JR. Double-blind, placebo-controlled trial of divalproex monotherapy in the treatment of symptomatic youth at high risk for developing bipolar disorder. *Journal of Clinical Psychiatry*, 2007 May; 68(5):781-8.

Gilbert DL, Sethuraman G, Sine L, Peters S, **Sallee FR**. Tourette's syndrome improvement with pergolide in a randomized, double-blind, crossover trial. *Neurology*. March 2000; 54(6): 1310-1315.

Sallee FR, Kurlan R, Goetz CG, Singer H, Scahill L, Law G, Dittman VM, Chappell PB. Ziprasidone treatment of children and adolescents with Tourette's syndrome: a pilot study. *American Academy of Child and Adolescent Psychiatry*. March 2000; 39(3): 292-299.

Sallee FR, Gilbert DL, **Vinks AA**, Miceli JJ, Robarge L, Wilner K. Pharmacodynamics of Ziprasidone in Children and Adolescents: Impact on Dopamine Transmission. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2003; 42(8): 902-907.

Respiratory Failure

Sood BG, Delaney-Black V, **Aranda JV**, Shankaran S. Aerosolized PGEI: a selective pulmonary vasodilator in neonatal hypoxemic respiratory failure results of a Phase I/II open label clinical trial. *Pediatric Research*. October 2004; 56(4): 579-585.

Seizure Disorders

Asano E, Muzik O, Shah A, Juhasz C, **Chugani DC**, Sood S, Janisse J, Ergun EL, Ahn-Ewing J, Shen C, Gotman J, Chugani HT. Quantitative interictal subdural EEG analyses in children with neocortical epilepsy. *Epilepsia*. 2003; 44: 425-434.

Carlsson KC, Hoem NO, Glauser T, **Vinks AA**. Development of a population pharmacokinetic model for carbamazepine based on sparse therapeutic monitoring data from pediatric patients with epilepsy. *Clinical Therapeutics*. 2005; 27(5): 618-626.

Dutta S, Zhang Y, Conway JM, Sallee FR, Biton V, **Reed MD**, **Kearns GL**. Divalproex-ER pharmacokinetics in older children and adolescents. *Pediatric Neurology*. May 2004; 30(5): 330-337.

Judkins AR, Porter BE, Cook N, **Clancy RR**, Duhaime AC, Golden JA. Dystrophic neuritic processes in epileptic cortex. *Epilepsy Research*. July 2006; 70(1): 49-58.

Juhasz C, Chugani DC, Muzik O, Shah A, Asano E, Mangner TJ, Chakraborty PK, Sood S, Chugani HT. Alpha-methyl-L-tryptophan PET detects epileptogenic cortex in children with intractable epilepsy. *Neurology*. 2003; 60: 960-968.

Toxicology/Overdoses

Farrar HC, McLeanne LR, Wallace M, White K, Watson J. A Comparison of Two Dosing Regimens of Succimer in Children with Chronic Lead Poisoning. *Journal of Clinical Pharmacology*. 1999; 39: 180-183.

James LP, Farrar H, **Sullivan J**, Givens T, Hearn G, Wasserman G, Simpson P, Hinson J. Cytokine responses following acute acetaminophen overdose. *Clinical Toxicology*. 2000; 381(5): 568.

James LP, **Wilson JT**, Simar R, Farrar HC, **Kearns GL**, Hinson JA, Pumford NR. Evaluation of occult acetaminophen hepatotoxicity in hospitalized children receiving acetaminophen. *Clinical Pediatrics*. 2001; 40(5): 243-248.

James LP, Farrar HC, **Sullivan JE**, Givens TG, Kearns GL, Wasserman GS, Walson PD, Hinson JA, Pumford NR. Measurement of acetaminophen protein adducts in children and adolescents with acetaminophen overdoses. *Journal of Clinical Pharmacology*. 2001; 41(8): 846-851. **PPRU Protocol # 10368**.

James LP, Lamps LW, McCullough S, Hinson JA. Interleukin 6 and Hepatocyte Regeneration in Acetaminophen Toxicity in the Mouse. *Biochemical and Biophysical Research Communications*. 2003; 309(4): 857-863.

James LP, McCullough S, Lamps LW, Hinson JA. Effect of N-Acetylcysteine on acetaminophen toxicity in mice: relationship to reactive nitrogen and cytokine formation. *Toxicological Sciences*. 2003; 75(2): 458-467.

James LP, Farrar HC, Darville TL, **Sullivan JE**, Givens TG, **Kearns GL**, Wasserman GS, Simpson PM, Hinson JA. Elevation of serum interleukin 8 levels in acetaminophen overdose in children and adolescents. *Clinical Pharmacology & Therapeutics*. September 2001; 70(3): 280-286. **PPRU Protocol # 10368**.

James LP, McCullough SS, Knight TR, Jaeschke H, Hinson JA. Acetaminophen Toxicity in Mice Lacking NADPH Oxidase Activity: Role of Peroxynitrite Formation and Mice Lacking NADPH Oxidase Activity: Role of Peroxynitrite Formation and Mitochondrial Oxidant Stress. *Free Radical Biology and Medicine*. 2003; 17: 1289-1297.

Nakamura H, Rose PG, **Blumer JL**, **Reed MD**. Acute encephalopathy due to aluminum toxicity successfully treated by combined intravenous deferoxamine and hemodialysis. *Journal of Clinical Pharmacology*. 2000; 40(3): 296-300.

James LP, Simpson PM, Farrar HC, **Kearns GL**, Wasserman GS, **Blumer J**, **Reed MD**, **Sullivan JE**, Hinson JA, and the PPRU Network. Cytokines and toxicity in acetaminophen overdose. *Journal of Clinical Pharmacology*. October 2005; 45: 1165-1171. **PPRU Protocol # 10368**.

Walson Philip, Fang Cheng-Chung, Tsai Chu-Lin, Chang Wei-Tien, Weng Te-I. Patient-Tailored N-Acetylcysteine Protocol for Acute Acetaminophen Intoxication. *Clinical Therapeutics*. 2005; 27(3): 336-341.

James LP. Tumor Necrosis Factor Receptor 1 and Hepatocyte Regeneration in Acetaminophen Toxicity: A Kinetic Study of Proliferating Cell Nuclear Antigen and Cytokine Expression. *Basic Clinical Pharmacology Toxicology*. 2005; 97(1): 8-14.

Appendix B

Listing of PPRU Publications in Population Pharmacokinetics

Listing of PPRU Publications in Population Pharmacokinetics

1. Meibohm B, Laer S, Panetta JC, Barrett JS. Population pharmacokinetic studies in pediatrics: issues in design and analysis. *AAPS J* 2005; 7:E475-87.
2. Vinks AA. The application of population pharmacokinetic modeling to individualized antibiotic therapy. *Int J Antimicrob Agents* 2002;19:313-22.
3. de Wildt SN, de Hoog M, Vinks AA, van der Giesen E, van den Anker JN. Population pharmacokinetics and metabolism of midazolam in pediatric intensive care patients. *Crit Care Med* 2003; 31:1952-8.
4. Vinks AA, Den Hollander JG, Overbeek SE, Jelliffe RW, Mouton JW. Population pharmacokinetic analysis of nonlinear behavior of piperacillin during intermittent or continuous infusion in patients with cystic fibrosis. *Antimicrob Agents Chemother* 2003; 47:541-7.
5. Barrett JS, Labbe L, Pfister M. Application and impact of population pharmacokinetics in the assessment of antiretroviral pharmacotherapy. *Clin Pharmacokinet* 2005; 44:591-625.
6. de Wildt SN, de Hoog M, Vinks AA, Joosten KF, van Dijk M, van den Anker JN. Pharmacodynamics of midazolam in pediatric intensive care patients. *Ther Drug Monit* 2005; 27:98-102.
7. Mehta P, Vinks A, Filipovich A, et al. High-dose weekly AmBisome antifungal prophylaxis in pediatric patients undergoing hematopoietic stem cell transplantation: a pharmacokinetic study. *Biol Blood Marrow Transplant* 2006; 12:235-40.
8. Zuppa AF, Nicolson SC, Adamson PC, et al. Population pharmacokinetics of milrinone in neonates with hypoplastic left heart syndrome undergoing stage I reconstruction. *Anesth Analg* 2006;102:1062-9.
9. Aman MG, Vinks AA, Remmerie B, et al. Plasma pharmacokinetic characteristics of risperidone and their relationship to saliva concentrations in children with psychiatric or neurodevelopmental disorders. *Clin Ther* 2007; 29:1476-86.
10. Vinks AA, van Rossem RN, Mathot RA, Heijerman HG, Mouton JW. Pharmacokinetics of aztreonam in healthy subjects and patients with cystic fibrosis and evaluation of dose-exposure relationships using monte carlo simulation. *Antimicrob Agents Chemother* 2007; 51:3049-55.
11. Weimert NA, Derotte M, Alloway RR, Woodle ES, Vinks AA. Monitoring of inosine monophosphate dehydrogenase activity as a biomarker for mycophenolic acid effect: potential clinical implications. *Ther Drug Monit* 2007; 29:141-9.
12. Mondick JT, Gibiansky L, Gastonguay MR, et al. Population pharmacokinetic investigation of actinomycin-D in children and young adults. *J Clin Pharmacol* 2008; 48:35-42.

13. Tremoulet AH, Capparelli EV, Patel P, et al. Population pharmacokinetics of lamivudine in human immunodeficiency virus-exposed and -infected infants. *Antimicrob Agents Chemother* 2007; 51:4297-302.
14. Capparelli E, Hochwald C, Rasmussen M, Parham A, Bradley J, Moya F. Population pharmacokinetics of cefepime in the neonate. *Antimicrob Agents Chemother* 2005; 49:2760-6.
15. Capparelli EV, Letendre SL, Ellis RJ, Patel P, Holland D, McCutchan JA. Population pharmacokinetics of abacavir in plasma and cerebrospinal fluid. *Antimicrob Agents Chemother* 2005; 49:2504-6.
16. Capparelli EV, Englund JA, Connor JD, et al. Population pharmacokinetics and pharmacodynamics of zidovudine in HIV-infected infants and children. *J Clin Pharmacol* 2003; 43:133-40.
17. Capparelli EV, Mirochnick M, Dankner WM, et al. Pharmacokinetics and tolerance of zidovudine in preterm infants. *J Pediatr* 2003;142:47-52.
18. Capparelli EV, Lane JR, Romanowski GL, et al. The influences of renal function and maturation on vancomycin elimination in newborns and infants. *J Clin Pharmacol* 2001; 41:927-34.
19. Kearns GL, Abdel-Rahman SM, Alander SW, Blowey DL, Leeder JS, Kauffman RE. Developmental pharmacology--drug disposition, action, and therapy in infants and children. *N Engl J Med* 2003; 349:1157-67.
20. Thompson PA, Murry DJ, Rosner GL, et al. Methotrexate pharmacokinetics in infants with acute lymphoblastic leukemia. *Cancer Chemother Pharmacol* 2007; 59:847-53.
21. Arndt C, Hawkins D, Anderson JR, Breitfeld P, Womer R, Meyer W. Age is a risk factor for chemotherapy-induced hepatopathy with vincristine, dactinomycin, and cyclophosphamide. *J Clin Oncol* 2004; 22:1894-901.

Appendix C

Traditional PK/PD Modeling Listing of Studies

Examples of PPRU Pharmacometric Study Activity

- I. Traditional PK/PD studies - In vitro, in silico, in vitro and animal studies-used directly for PPRU study design
- Actinomycin PK - physiologic based modeling
 - Azithromycin in mouse model for BPD - both pre-clinical PK and PD
 - Cisapride - metabolism studies performed to determine pathway for metabolite formation
 - Codeine /Morphine CSF penetration - primate modeling for pain initiative
 - Dextromethorphan – in vitro expression and characterization (kinetic) of functional consequences of newly discovered allelic variants
 - Fluticasone - reaction phenotyping used to characterize role of CYP3A4 isoforms in biotransformation
 - Lamisil – in vitro and in vivo characterization of inhibition of CYP2D6 in humans
- II. Modeling and Simulation (MS) Used in PPRU Study Design
- Absence Epilepsy – MS used to develop dosing strategies – including compiling clinical data from to develop preliminary models. Integrated model to revise company dosing algorithm.
 - Acetaminophen protein adducts – Modeling of preliminary data used to determine sampling scheme for ADR grant application.
 - Actinomycin – PBPK modeling used with MS used to developing dosing strategies.
 - Azithromycin – MS based pediatric data to develop model for BAL concentrations and intracellular accumulation. Dosing and PK study design based on these activities.
 - Daptomycin – MS performed (PK/PD) as the basis for projection of dosing regimens for phase III pediatric program.
 - Fexofenadine – MS performed as the basis to develop design for Pop PK studies.
 - Fluconazole – MS used to determine dose. Re-analyzed data from literature. Incorporated newborn PK data and models from PK studies in simulations
 - Ibuprofen for PDA – MS used to determine dosing and sampling strategy – incorporated prior data collected outside PPRU. Used to justify study design change to FDA.
 - Inositol – ongoing MS to develop dosing for collaboration with Neonatal Network studies. Non-linear reabsorption capacity and endogenous production confounders in this model.
 - Lorazepam for Sedation – MS to determine dosing strategy with adaptive design. Initial target concentration achieved by bolus maintained by continuous infusion
 - Lorazepam for Status –MS use from initial study to develop dosing for second efficacy trial
 - Meropenem – MS used to develop dosing strategy and PK design for sampling.

- Morphine in infants – MS to determine dosing (prior dose led to toxicity). Developmental model derived from prior models including incorporation of data/models from literature.
 - Pleconaril – MS performed as the basis to develop PK aspects for pleconaril protocols in collaboration with CASG.
- III. Proteomics Discovery
- Aminoglycoside toxicity
 - APAP Toxicity
 - Azithromycin
 - Ibuprofen (Det)
 - Remicaide
- IV. Tissue based PK modeling
- Azithromycin (BPCA Proposal)
 - BAL concentrations
 - Intracellular concentrations
 - Breast Milk ARV penetration (supplemental funds)
 - Codeine Pain initiative – CSF penetration study
 - Cisapride disposition – small intestinal translocation assay
 - Meropenem (BPCA sub study)
 - Small molecule Bcl2 inhibitor tissue distribution – Infant ALL disease model (translational studies – CTSA and leukemia society funds)
- V. Clinical trials with PK/PG emphasis
- Absence Epilepsy
 - Azithromycin PK
 - Buspirone
 - Lorazepam Sedation
 - Midazolam
 - Morphine Infant Pain
 - Mycophenolic acid in renal transplant
 - Pantoprazole
- VI. Imaging research studies
- Autism
 - Early Pharmacotherapy Guided by Biomarkers in Autism
 - Utilizing PET Imaging
 - Laser Doppler flowimetry to quantitate microvascular response to drugs
 - Use of stable isotopes to quantitate gastric emptying (¹³C acetate) and DME activity (¹³C dextromethorphan)

Appendix D

Analytical Pharmacology Core Library Assays

Drug Assays Available at PPRU Sites

Assay	Drug Classification	Assay	Drug Classification
11-Deoxycortisol	Corticoids	indinavir	Antivirals
17-OH Progesterone	Sex hormones	indomethacin	NSAIDs
16OH estrone	Sex hormones	inositol	Vitamins and nutritionals
2-OH Estrone	Sex hormones	insulin	Metabolic hormones
25-OH Vit D	Vitamins and nutritionals	ISA-247	Immunomodulants
5-Fluorouracil	Antineoplastics	isoflurane	Analgesics and anesthetics
5-HIAA	Neurotransmitters	Karenitecin	Antineoplastics
5-HT	Neurotransmitters	ketamine	Analgesics and anesthetics
5-hydroxyomeprazole	Proton pump inhibitors	ketorolac	NSAIDs
5-OH bupropion	Antidepressants	LAQ824	Antineoplastics
6ketoPGFalpha	Prostaglandins	lamivudine	Antivirals
6-mercaptopurine	Immunomodulants	leptin	Metabolic hormones
6-methylmercaptopurine	Immunomodulants	levetiracetam	Anticonvulsants
6-thioguanine	Antineoplastics	levofloxacin	Quinolones
8 oxo-O6	Antineoplastics	lidocaine	Local anesthetics
abacavir	Antivirals	lidocaine metabolites	Drug metabolites
actinomycin-D	Antineoplastics	linezolid	Antibiotics
acyclovir	Antivirals	lopinavir	Antivirals
Acyl carnitines	Vitamins and nutritionals	loratadine	Antihistamines
adenylates	Metabolic substrates	mepivacaine	Local anesthetics
alfentanil	Analgesics and anesthetics	MET-enkephalin	Endorphins and enkephalins
alpha-1-acid GP	Blood proteins	metformin	Antihyperglycemics, biguanides
amantadine	Antivirals	methadone	Analgesics and anesthetics
amiloride	K+ sparing diuretics	methotrexate	Antineoplastics, immunomodulants
ampicillin	Beta-lactam antibiotics	meropenem	Beta-lactam antibiotics
amprenavir	Antivirals	Metoclopramide	Antiemetics
amoxicillin	Beta-lactam antibiotics	Metronidazole	Antifungals
ADH	Cardiorenal hormones	mexiletine	Antiarrhythmics
Androstenedione	Sex hormones	midazolam	Benzodiazepines
Angiotensin(10,8 and 7)	Cardiorenal hormones	4-OH midazolam	Drug metabolites
APA-5		1-OH midazolam	Drug metabolites
APC	Proteins	minocyclin	Tetracycline antibiotics
aprepitant	Antiemetics	MK-801	NMDA antagonists
ARV protein binding	Viral assays - HIV	morphine	Analgesics and anesthetics
aspirin	NSAIDs, salicylates	morphine metabolites	Drug metabolites
atazanavir	Antivirals	moxifloxacin	Quinolones

Assay	Drug Classification	Assay	Drug Classification
beclamethasone	Corticoids	mycophenolic acid	Immunomodulants
benzylguanine	Antineoplastics	nafcillin by bioassay	Beta-lactam antibiotics
beta-endorphin	Endorphins and enkephalins	naloxone	Antidotes
bile acids (total)	Digestive substances	nelfinavir	Antivirals
Bumetanide	Loop diuretics	nelfinavir-M8	Drug metabolites
bupivacaine	Local anesthetics	NNRTIs (EFV, DLV, NVP)	Antivirals
buprenorphine	Analgesics and anesthetics	NNRTIs/PIs (NVP, IDV, DRV, APV, NFV, SQV, ATV, EFV, RTV, LPV, and TPV)	Antivirals
Bupropion	Antidepressants	NRTIs (ddC, 3TC, ddl, d4T, AZT, ABC, NVP)	Antivirals
C.P.M. - gamma	Radiation	NRTIs/PIs/NNRTIs (ZDV, ddl, ddC, d4T, 3TC, ABC, EFV, DEL, NVP, TFV, IDV, APV, NFV, SQV, ATV, RTV, and LPV)	Antivirals
caffeine	CNS stimulants, purines	NGF	Growth hormones
Carboplatin	Antineoplastics	NPY	Neurotransmitters
carnitine	Vitamins and nutritionals	O6 benzylguanine	Antineoplastics
catecholamines	Neurotransmitters	omeprazole	Proton pump inhibitors
cefepime	Beta-lactam antibiotics	omeprazole sulfide (CYP2C19)	Drug metabolites
Cefpodoxime	Beta-lactam antibiotics	omeprazole sulphone	Drug metabolites
Ceftazadime	Beta-lactam antibiotics	ondansetron	Antiemetics
cetirizine	Antihistamines	Oxytocin	Neurotransmitters
CGRP	Vasoactive substances	paraxanthine	CNS stimulants, xanthines
ciprofloxacin	Quinolones	paroxetine	SSRIs
citalopram	SSRIs	pentoxiflline	Blood modifiers
CI-994	Antineoplastics	PGE2	Prostaglandins
clindamycin	Lincomycin-like antibiotics	Phenylacetate	Antineoplastics
clonidine	Alpha-2 agonists	Phenylacetylglutamine	Drug metabolites
codeine	Analgesics and anesthetics	Phenylbutyrate	Miscellaneous drugs
Corticosterone	Corticoids	piperacillin	Beta-lactam antibiotics
cortisol	Corticoids	Plasticizers	Extraneous inactive compounds
cotinine	Drug metabolites	Pralidoxime	Antidotes
CPT-11	Antineoplastics	prednisone	Corticoids
Cyclosporine	Immunomodulants	Procabazine	Antineoplastics
D.P.M. - 14C	Radiation	Progesterone	Corticoids
D.P.M. - 3H	Radiation	propofol	Sedatives - other
D.P.M. - 3H&14C	Radiation	protein (total)	Blood proteins
daptomycin	Peptide antibiotics	Pyrabenzamide	Antihistamines (pyrabenzamine?)
dasatinib	Antineoplastics	PYY	Metabolic hormones

Assay	Drug Classification	Assay	Drug Classification
Daunomycin, daunomycinol	Antitumor antibiotics	quinupristin/dalfopristin	Streptogramin antibiotics
Depsipeptide	Antineoplastic peptides	ranitidine	H2 antagonists
desipramine	Antidepressants	RBC Fatty Acids	Blood components
dexmedetomidine	Sedatives - other	Rebeccamycin	Antitumor antibiotics
dextromethorphan	Antitussives, hallucinogens	rifampin	Antituberculosis drugs
dextrorphan (CYP2D6)	Drug metabolites	riluzole	CNS drugs, miscellaneous
DHEA/DHEAS	Sex hormones	risperidone	Antipsychotics - novel
diazepam	Benzodiazepines	ritonavir	Antivirals
didanosine	Antivirals	S-100	Tumor markers
Digoxin (P-glycoprotein)	Digitalis cardiac glycosides	saquinavir	Antivirals
Diindolylmethane	Antineoplastics	sertraline	SSRIs
diphenhydramine	Antihistamines	Sirolimus	Immunomodulants
DNA-J	Genetic testing	SN-38	Antineoplastics
Doxorubicin, doxorubicinol	Antitumor antibiotics	SN-38 glucuronide	Drug metabolites
ECP	Miscellaneous?	ST-91	Cardiovascular drugs
efavirenz	Antivirals	STI-571	Antineoplastics
emtricitabine	Antivirals	SU-5416	Antineoplastics
EPx	Genetic testing	substance P	Neurotransmitters
esmolol	Beta blockers	sufentanil	Analgesics and anesthetics
estradiol	Sex hormones	sulbactam	Beta-lactamase inhibitor
estriol	Sex hormones	T4/T3/FT4/FT3	Metabolic hormones
estrone	Sex hormones	tacrolimus	Immunomodulants
Etoposide	Antineoplastics	Taxol	Antineoplastics
Everolimus	Immunomodulants	Taxotere	Antineoplastics
excitatory amino acids	Neurotransmitters	TDF/FTC	Antivirals
extraction - CSF	Extraction	temozolamide	Antineoplastics
extraction - plasma	Extraction	Tenofovir	Antivirals
extraction - tissue	Extraction	testosterone	Sex hormones
famotidine	H2 antagonists	Thalidomide	Antineoplastics, antileptotics
fentanyl	Analgesics and anesthetics	THC - Test Article	Assay - 'recreational' drug use
fluconazole	Antifungals	THC metabolites - MS	Assay - 'recreational' drug use
flunisolide	Corticoids	THC plasma - ELISA	Assay - 'recreational' drug use
fluoxetine	Antidepressants	tipranavir	Antivirals
fluticasone	Corticoids	TNFalpha	Cytokines
Forskolin	Miscellaneous, terpenes	tobramycin (by florescence polarization)	Aminoglycoside antibiotics
GABA	Neurotransmitters	Topotecan	Antineoplastics
gabapentin	Anticonvulsants	trazadone	Antidepressants
Ganciclovir	Antivirals	triamcinolone	Corticoids

Assay	Drug Classification	Assay	Drug Classification
Gangliosides (GM1 and GM2)	Tumor markers	tryptophan	Amino acids
gatifloxacin	Quinolones	uracil	Pyrimidines
Gemcitabine	Antineoplastics	uridine	Nucleosides
gentamicin	Aminoglycoside antibiotics	urine 10 panel screen	Assay - 'recreational' drug use
ghrelin	Digestive hormones	vancomycin	Glycopeptide antibiotics
glyburide	Antihyperglycemics, sulfonylureas	venlafaxine	SSRIs
HGF	Growth hormones	vinblastine	Antineoplastics
histamine	Neurotransmitters	vincristine	Antineoplastics
hydrocodone	Analgesics and anesthetics	Warfarin	Blood modifiers
ibuprofen	NSAIDs, propanoic acids	zalcitabine	Antivirals
IL1	Cytokines	zidovudine	Antivirals
IL12	Cytokines	most drugs of abuse	Assay - 'recreational' drug use
IL6	Cytokines		
IL8	Cytokines		

Appendix E

PG Publications Emanating from the PPRU Network

PPRU Network Publications Involving Pharmacogenetics / Pharmacogenomics 1998 to 2008

Studies Exploring Developmental Pharmacogenomics (Ontogeny)

1. **Blake MJ, Abdel-Rahman SM, Pearce RE, Leeder JS, Kearns GL.** Effect of diet on the development of drug metabolism by cytochrome P-450 enzymes in healthy infants.
2. *Pediatr Res* 2006; 60(6): 717-23.
3. **Blake MJ, Gaedigk A, Pearce RE, Bomgaars LR, Christensen ML, Stowe C, James LP, Wilson JT, Kearns GL, Leeder JS.** Ontogeny of dextromethorphan O- and N-demethylation in the first year of life. *Clin Pharmacol Ther* 2007; 81(4): 510-6.
4. Allegaert K, van Schaik RH, Vermeersch S, Verbesselt R, Cossey V, Vanhole C, van Fessem M, de Hoon J, **van den Anker JN.** Postmenstrual age and CYP2D6 polymorphisms determine tramadol O-demethylation in critically ill neonates and infants. *Pediatr Res* 2008 (in press)
5. **Leeder JS, Gaedigk R, Marcucci KA, Gaedigk A, Vyhldal CA, Schindel BP, Pearce RE.** Variability of CYP3A7 expression in human fetal liver. *J Pharmacol Exp Ther.* 2005; 314: 626-635.
6. **Vyhldal CA, Gaedigk R, Leeder JS.** Nuclear receptor expression in fetal and pediatric liver: correlation with CYP3A expression. *Drug Metab Dispos.* 2006; 34: 131-137.
7. **Gaedigk A, Baker DW, Totah RA, Gaedigk R, Pearce RE, Vyhldal CA, Zeldin DC, Leeder JS.** Variability of CYP2J2 expression in human fetal tissues. *J Pharmacol Exp Ther.* 2006; 319: 523-532.
8. **Kearns GL, Robinson PK, Wilson JT, Wilson-Costello D, Knight GR, Ward RM, van den Anker JN;** Pediatric Pharmacology Research Unit Network. Cisapride disposition in neonates and infants: in vivo reflection of cytochrome P450 3A4 ontogeny. *Clin Pharmacol Ther.* 2003; 74: 312-325.
9. Matei KE, **Vyhldal CA, Le M, Klick D, Hines RN.** Regulation of CYP3A4 Expression by PAR Transcription Factors. *FASEB J* 2007; 21: A1183

Pharmacogenetic/Pharmacogenomic Studies Supporting Clinical Trials

1. Saitoh A, Sarles E, **Capparelli E, Aweeka F, Kovacs A, Burchett SK, Wiznia A, Nachman S, Fenton T, Spector SA.** CYP2B6 genetic variants are associated with nevirapine pharmacokinetics and clinical response in HIV-1 Infected Children. *AIDS* 2007 21:2191-2199.

2. Shelepova T, Nafziger AN, Victory J, Kashuba ADM, Rowland E, Zhang Y, Sellers E, **Kearns G**, **Leeder JS**, **Gaedigk A**, Bertino JS. Effect of a triphasic oral contraceptive on drug metabolizing enzyme activity as measured by the validated Cooperstown 5+1 cocktail. *Journal of Clinical Pharmacology*. 2005;45(12):1413-21.
3. Ma JD, Nafziger AN, Villano SA, **Gaedigk A**, Bertino JS. Maribavir pharmacokinetics and the effects of multiple-dose maribavir on cytochrome P450 (CYP) 1A2, CYP 2C9, CYP 2C19, CYP 2D6, CYP 3A, N-acetyltransferase-2, and xanthine oxidase activities in healthy adults. *Antimicrobial Agents and Chemotherapy*. 2006;50(4):1130-5.
4. Heresi GP, Gerstmann DR, **Reed MD**, **van den Anker JN**, **Blumer JL**, Kovanda L, Keirns JJ, Buell DN, **Kearns GL**. The pharmacokinetics and safety of micafungin, a novel echinocandin, in premature infants. *Pediatric Infectious Disease Journal*, 2006; 25(12):1110-5 [sub-study of COMT genotyping]
5. **Edwards DJ**, Fitzsimmons ME, Schuetz EG, Yasuda K, Ducharme MP, Warbasse LH, Woster PM, Schuetz JD, Watkins P. 6',7'-Dihydroxybergamottin in grapefruit juice and Seville orange juice: effects on cyclosporine disposition, enterocyte CYP3A4, and P-glycoprotein. *Clinical Pharmacology & Therapeutics*. 1999; 65(3): 237-244.
6. Nowak SN, **Edwards DJ**, Clarke A, Anderson GD, Jaber LA. Pioglitazone: effect on CYP3A4 activity. *Journal of Clinical Pharmacology*. 2002; 42: 1299-1302.
7. DiMarco MP, **Edwards DJ**, Wainer IW, Ducharme MP. The effect of grapefruit juice and Seville orange juice on the pharmacokinetics of dextromethorphan: The role of gut CYP3A and P-glycoprotein. *Life Science*. 2002; 71: 1149-1160.
8. Kim JS, Nafziger AN, **Gaedigk A**, Dickmann L, Rettie A, **Kearns GL**, Bertino JS. Effects of oral vitamin k on s- and r- warfarin pharmacokinetics and pharmacodynamics: enhanced safety of warfarin as a CYP2C9 probe. *Clinical Pharmacology & Therapeutics*. 2001; 41(7):715-22.
9. **Kearns GL**, Andersson T, **James LP**, Li BUK, **Gaedigk A**, Kraynak RA, Ramabadran K, **Abdel-Rahman SM**, **van den Anker JN**, the PPRU Network. Omeprazole disposition in children following single-dose administration: relationship to CYP2C19 genotype. *Journal of Clinical Pharmacology*. 2003; 43: 840-848.
10. Droll K, Bruce-Mensah K, Otton SV, **Gaedigk A**, Sellers EM, Tyndale RF. Comparison of three CYP2D6 probe substrates and genotype in Ghanaians, Chinese, and Caucasians. *Pharmacogenetics*, 1998; 8: 325-333.

11. Kashuba ADM, Nafziger AN, **Kearns GL, Leeder JS**, Shirey CS, **Gotschall RR, Gaedigk A**, Bertino JS. Quantification of three-month intraindividual variability and the influence of menstrual cycle phase on CYP2D6 activity as measured by dextromethorphan phenotyping. *Pharmacogenetics*, 1998; 8: 403-410.
12. Kashuba AD, Nafziger AN, **Kearns GL, Leeder JS, Gotschall R**, Rocci ML Jr, Kulawy RW, Beck DJ, Bertino JS Jr. Effect of fluvoxamine therapy on the activities of CYP1A2, CYP2D6, and CYP3A as determined by phenotyping. *Clin Pharmacol Ther.* 1998; 64: 257-268.
13. Trepanier EF, Nafziger AN, **Kearns GL**, Kashuba AD, Amsden GW. Absence of effect of terbinafine on the activity of CYP1A2, NAT-2, and xanthine oxidase. *J Clin Pharmacol.* 1998; 38: 424-428.
14. Streetman DS, Bleakley JF, Kim JS, Nafziger AN, **Leeder JS, Gaedigk A, Gotschall R, Kearns GL**, Bertino JS Jr. Combined phenotypic assessment of CYP1A2, CYP2C19, CYP2D6, CYP3A, NAT2, and XO with the "Cooperstown Cocktail". *Clin Pharmacol Ther.* 2000: 375-383.
15. **Abdel-Rahman SM, Leeder JS**, Wilson JT, **Gaedigk A, Gotschall RR**, Medve R, Liao S, Spielberg SP, **Kearns GL**. Concordance between tramadol and dextromethorphan parent/metabolite ratios: the influence of CYP2D6 and non-CYP2D6 pathways on biotransformation. *J Clin Pharmacol.* 2002; 42: 24-29.
16. Chainuvati S, Nafziger AN, **Leeder JS, Gaedigk A, Kearns GL**, Sellers E, Zhang Y, Kashuba Ad, Rowland E, Bertino JS Jr. Combined phenotypic assessment of cytochrome p450 1A2, 2C9, 2C19, 2D6, and 3A, N-acetyltransferase-2, and xanthine oxidase activities with the "Cooperstown 5+1 cocktail". *Clin Pharmacol Ther.* 2003; 74: 437-447.
17. Ma JD, Nafziger AN, Kashuba AD, Kim MJ, **Gaedigk A**, Rowland E, Kim JS, Bertino JS Jr. Limited sampling strategy of S-warfarin concentrations, but not warfarin S/R ratios, accurately predicts S-warfarin AUC during baseline and inhibition in CYP2C9 extensive metabolizers. *J Clin Pharmacol.* 2004; 44: 570-576.
18. Zineh I, Beitelshes AL, **Gaedigk A**, Walker JR, Pauly DF, Eberst K, **Leeder JS**, Phillips MS, Gelfand CA, Johnson JA. Pharmacokinetics and CYP2D6 genotypes do not predict metoprolol adverse events or efficacy in hypertension. *Clin. Pharmacol. Ther.* 2004; 76: 536-544.
19. Kim MJ, Nafziger AN, Kashuba AD, Kirchheiner J, Bauer S, **Gaedigk A**, Bertino JS Jr. Effects of fluvastatin and cigarette smoking on CYP2C9 activity measured using the probe S-warfarin. *Eur J Clin Pharmacol.* 2006; 62: 431-436.

20. Findling RL, Nucci G, Piergies AA, Gomeni R, Bartolic EI, Fong R, Carpenter DJ, **Leeder JS, Gaedigk A, Danoff TM**. Multiple-dose pharmacokinetics of paroxetine in children and adolescents with major depressive disorder or obsessive-compulsive disorder. *Neuropsychopharmacology* 2006;31:1274-1285

Pharmacogenomics of Disease Expression

1. **Kennedy MJ**, Scripture CD, Kashuba ADM, Scott CS, **Gotschall RR, Gaedigk A, Kearns GL**. Assessment of hepatic enzyme activity in children with cystic fibrosis using caffeine and dextromethorphan phenotyping. *Clinical Pharmacology & Therapeutics*. 2004; 75(3): 163-171.
2. Englund JA, Raskino C, Vavro C, Palumbo P, Ross LL, **McKinney RE**, Nikolic-Djokic D, Colgrove RC, Baker CJ. Mutations linked to drug resistance, human immunodeficiency type 1 biologic phenotype and their association with disease progression in children receiving nucleoside reverse transcriptase inhibitors. *Pediatric Infectious Disease Journal*. 2004; 23: 15-22.
3. Li D, Jiao L, Li Y, Doll MA, Hein DW, Bondy ML, Evans DB, Wolff RA, Lenzi R, Pisters PW, Abbruzzese JL, Hassan MM. Polymorphisms of cytochrome P4501A2 and N-acetyltransferase genes, smoking and risk of pancreatic cancer. *Carcinogenesis* 2006;27(1):103-11.
4. Darbari DS, Minniti C, Rana S, **van den Anker JN**. Pharmacogenetics of morphine: Potential implications in sickle cell disease. *Am J Hematol* 2007 Aug 23; [Epub ahead of print]
5. Darbari DS, van Schaik RH, Capparelli EV, Rana S, van der Werf, McCarter R, **van den Anker JN**. UGT2B7 promotor variant -840G>A contributes to variability in hepatic clearance of morphine in patients with sickle cell disease. *Am J Hematol* 2007 Aug 27; [Epub ahead of print]
6. **Gaedigk A, Gaedigk R, Abdel-Rahman SM**. Genetic Heterogeneity in the rRNA Gene Locus of *Trichophyton tonsurans*. *J Clin Microbiol*. 2003; 41: 5478-5487.
7. **Abdel-Rahman SM, Preuett B, Gaedigk A**. Multilocus genotyping identifies infections by multiple strains of *Trichophyton tonsurans*. *J Clin Microbiol*. 2007; 45: 1949-1953.
8. **Leeder JS, Lu X, Timsit Y, Gaedigk A**. Non-monoxygenase cytochromes P450 as potential human autoantigens in anticonvulsant hypersensitivity reactions. *Pharmacogenetics*, 1998; 8: 211-225.

9. Kim MJ, Bertino JS, Jr., **Gaedigk A**, Zhang Y, Sellers EM, Nafziger AN. Effect of sex and menstrual cycle phase on cytochrome P450 2C19 activity with omeprazole used as a biomarker. *Clin Pharmacol Ther.* 2002; 72: 192-199.
10. **Abdel-Rahman SM**, Simon S, **Wright KJ**, Ndjountche L, **Gaedigk A**. Tracking *Trichophyton tonsurans* through a large urban child care center: defining infection prevalence and transmission patterns by molecular strain typing. *Pediatrics.* 2006; 118: 2365-2373.
11. Bhatena A, **Gaedigk R**, **Abdel-Rahman SM**. Characterization of the ALP1 gene locus of *Trichophyton tonsurans*. *Mycopathologia.* 2005; 160: 265-272.

Studies Exploring Gene Frequency and/or Genotype / Phenotype Association

1. **Gaedigk A**, Simon SD, Pearce RE, Bradford LD, **Kennedy MJ**, **Leeder JS**. The CYP2D6 activity score: translating genotype information into a qualitative measure of phenotype. *Clin Pharmacol Ther* 2008;83: 234-242.
2. **Gaedigk A**, **Gotschall RR**, Forbes NS, Simon SD, **Kearns GL**, **Leeder JS**. Optimization of cytochrome P450 2D6 (CYP2D6) phenotype assignment using a genotyping algorithm based on allele frequency data. *Pharmacogenetics.* 1999; 9: 669-682.
3. Kovacs P, **Edwards DJ**, Lalka D, Scheiwe MW, Stoeckel K. High dose omeprazole: use of a multiple-dose study design to assess bioequivalence and accuracy of CYP2C19 phenotyping. *Therapeutic Drug Monitor.* 1999; 21: 526-531.
4. Evans WE, Hon YY, **Bomgaars L**, Coutre S, Holdsworth M, Janco R, Kalwinsky D, Keller F, Khatib Z, Margolin J, Murray J, Quinn J, Ravindranath Y, Ritchey K, Roberts W, Rogers ZR, Schiff D, Steuber C, Tucci F, Preponderance of thiopurine S-methyltransferase deficiency and heterozygosity among patients intolerant to mercaptopurine or azathioprine. *Journal of Clinical Oncology.* 2001; 19(8): 2293-2301.
5. **Abdel-Rahman SM**, Gotschall RR, **Kauffman RE**, **Leeder JS**, **Kearns GL**. Investigation of terbinafine as a CYP2D6 inhibitor in vivo. *Clinical Pharmacology & Therapeutics.* May 1999; 65(5): 465-472.
6. **Gaedigk A**, Casley WL, Tyndale RF, Sellers EM, Jurima-Romet M, **Leeder JS**. Cytochrome P4502C9 (CYP2C9) allele frequencies in Canadian Native Indian and Inuit populations. *Clinical Pharmacology & Therapeutics.* 2001; 79(10): 841-847.

7. Henne KR, **Gaedigk A**, Gupta G, **Leeder JS**, Rettie AE. Chiral phase analysis of warfarin enantiomers in patient plasma in relation to CYP2C9 genotype. *Journal of Chromatography B*. 1998; 710(1-2): 143-148.
8. **Gaedigk A**, Tyndale RF, Jurima-Romet M, Sellers EM, Grant DM, **Leeder JS**. NAD(P)H:quinone oxidoreductase: polymorphisms and allele frequencies in Caucasian, Chinese and Canadian Native Indian and Inuit populations. *Pharmacogenetics*. 1998; 8(4): 305-313.
9. Bradford LD, **Gaedigk A**, **Leeder JS**. High frequency of CYP2D6 poor and intermediate metabolizers in black populations: a review and preliminary data. *Psychopharmacology Bulletin*. 1998; 34(4): 797-804.
10. Van Schaik RHN, De Wildt SN, Van Iperen NM, Uitterlinden AG, **van den Anker JN**, Lindemans J. CYP3A4-V Polymorphism Detection by PCR-Restriction Fragment Length Polymorphism Analysis and its allelic frequency among 199 Dutch Caucasians. *Clin Chem* 2000; 46:1834-1836.
11. Van Schaik RH, de Wildt SN, Brosens R, van Fessem M, **van den Anker JN**, Lindemans J. The CYP3A4*3 allele: Is it really rare? *Clin Chem* 2001; 47:1104-6.
12. Van Schaik RH, van der Heiden I, **van den Anker JN**, Lindemans J. CYP3A5 variant alleles in Dutch Caucasians. *Clin Chem* 2002; 48(10):1668-1671.
13. Lam YWF, **Gaedigk A**, Ereshefsky L, Alfaro CL, Simpson J. CYP2D6 inhibition by SSRI: plasma concentration correlation and effect of CYP2D6 gene duplication. *Pharmacotherapy*. 2002: 1001-1006.
14. **Gaedigk A**, Tyndale RF, Jurima-Romet M, Sellers EM, Grant DM, **Leeder JS**. NAD(P)H:quinone oxidoreductase: polymorphisms and allele frequencies in Caucasian, Chinese and Canadian Native Indian and Inuit populations. *Pharmacogenetics*. 1998; 8: 305-313.
15. Griese EU, Zanger UM, Brudermanns U, **Gaedigk A**, Mikus G, Mörike K, Stüven T, Eichelbaum M. Assessment of the predictive power of genotypes for the in vivo catalytic function of CYP2D6 in a Caucasian population. *Pharmacogenetics*, 1998; 8: 15-26.
16. **Gaedigk A**, Bradford LD, Marcucci KA, **Leeder JS**. Unique CYP2D6 activity distribution and genotype-phenotype discordance in African Americans. *Clin Pharmacol Ther*. 2002; 72: 76-89.
17. **Gaedigk A**, Bradford LD, **Alander SW**, **Leeder JS**. CYP2D6*36 gene arrangements within the cyp2d6 locus: association of CYP2D6*36 with poor metabolizer status. *Drug Metab Dispos*. 2006; 34: 563-569.

18. Bernard S, **Neville KA**, Nguyen AT, Flockhart D. Interethnic differences in genetic polymorphisms of CYP2D6 in the U.S. population: clinical implications. *Oncologist* 2006; 11: 126-135.

Discovery, Method Development/Validation, Method Application/Review Articles

1. **Kennedy MJ, Abel-Rahman SM**, Simon SD, **Leeder JS**. Comparison of various urine collection intervals for caffeine and dextromethorphan phenotyping in children. *Journal of Clinical Pharmacology*. 2004; 44: 708-714.
2. Luo HR, **Gaedigk A**, Aloumanis V, Poland RE, Lin KM, Wan YJY. Identification of CYP2D6 impaired functional alleles in Mexican Americans. *European Journal of Clinical Pharmacology*. 2005 Dec;61(11):797-802. Epub 2005 Nov 8.
3. de Wildt SN, Berns MJ, **van den Anker JN**. ¹³C-erythromycin breath test as a noninvasive measure of CYP3A activity in newborn infants: a pilot study. *Therapeutic Drug Monitoring*, 2007; 29(2):225-30.
4. de Wildt SN, **Kearns GL, Leeder JS, van den Anker JN**. Glucuronidation in humans. Pharmacogenetic and developmental aspects. *Clinical Pharmacokinetics*. 1999; 36(6): 439-452.
5. de Wildt SN, **Kearns GL, Leeder JS, van den Anker JN**. Cytochrome P450 3A: ontogeny and drug disposition. *Clinical Pharmacokinetics*. 1999; 37(6): 485-505.
6. **Abdel-Rahman SM**, Marcucci K, Boge T, **Gotschall RR, Kearns GL, Leeder JS**. Inhibition of CYP2D6 mediated dextromethorphan o-demethylation by terbinafine. *Drug Metabolism and Disposition*. 1999; 27: 770-775.
7. Van Schaik RH, DeWildt SN, Van Iperen NM, Uitterlinden AG, **van den Anker JN**, Lindemans J. CYP3A4-V polymorphism detection by PCR restriction fragment length polymorphism analysis and its allelic frequency among 199 Dutch caucasians. *Clinical Chemistry*. 2000; 46: 1834-1836.
8. Pearce RE, **Gotschall RR, Kearns GL, Leeder JS**. Cytochrome P450 Involvement in the biotransformation of cisapride and racemic norcisapride in vitro: Differential activity of individual human CYP3A isoforms. *Drug Metabolism and Disposition*. 2001; 29(12):1548-54.
9. Svojanovsky S, **Leeder S**, Rogan PK. Information analysis of CYP2D6 and CYP2C19 splicing mutations. *Pharmacogenetics*. 2003; 13(4): 207-18.
10. Ibrahim RB, Wilson JG, Thorsby ME, **Edwards DJ**. Effect of buprenorphine on CYP3A activity in rat and human liver microsomes. *Life Science*. 2000; 66: 1293-1298.

11. **Gaedigk A, Leeder JS**, Grant DM. Tissue-specific expression and alternative splicing of human microsomal epoxide hydrolase. *DNA and Cell Biology*. 1997; 16(11): 1257-1266.
12. Wiersma HE, Koopmans RP, Bos AP, van den Berg H, van Aalderen WM, van Schaik RH, **van den Anker JN**. The right medicine for the right patient: pharmacogenetics in the pediatric clinical practice. *Tijdschr Kindergeneeskunde* 2004; 72:190-197.
13. Krekels HJ, **van den Anker JN**, Baiardi P, et al. Pharmacogenetics and paediatric drug development: issues and consequences to labelling and dosing recommendations. *Exp Opin Pharmacother* 2007;8:1787-1799.
14. **Van den Anker JN**. Do we need to incorporate pharmacogenetics in randomized controlled trials of frequently used medicines? *Pediatrics* 2007;120:237-238.
15. Bidwell LM, McManus ME, **Gaedigk A**, Kakuta Y, Negishi M, Pedersen L, Martin JL. Crystal structure of human catecholamine sulfotransferase and comparison with mouse estrogen and human heparan sulfotransferases suggests disorder-order transition upon ligand binding. *J Mol Bio*. 1999: 521-530.
16. Birx L, Duggleby RG, **Gaedigk A**, McManus M. Structural and functional analysis of human aryl sulfotransferase. *Biochem J*. 1999: 337-343.
17. Windmill KF, **Gaedigk A**, De La Hall P, Samaratunga H, Grant DM, Mcmanus ME. Localisation of N-acetyltransferase in human tissues. *Toxicol Sci*. 2000: 19-29.
18. **Pearce RE**, Vakkalagadda GR, **Leeder JS**. Pathways of carbamazepine bioactivation in vitro I. Characterization of human cytochromes P450 responsible for the formation of 2- and 3-hydroxylated metabolites. *Drug Metab Dispos*. 2002; 30: 1170-1179.
19. Gadiraju S, **Vyhlidal CA**, **Leeder JS**, Rogan PK. Genome-wide prediction, display and refinement of binding sites with information theory-based models. *BMC Bioinformatics*. 2003; 4: 38.
20. Rogan PK, Svojanovsky S, **Leeder JS**. Information theory-based analysis of CYP2C19, CYP2D6 and CYP3A5 splicing mutations. *Pharmacogenetics*. 2003; 13: 207-218.
21. **Vyhlidal CA**, **Rogan PK**, **Leeder JS**. Development and refinement of pregnane X receptor (PXR) DNA binding site model using information theory: insights into PXR-mediated gene regulation. *J Biol Chem*. 2004; 279: 46779-46786.

22. **Gaedigk A, Gaedigk R, Leeder JS.** CYP2D7 splice variants in human liver and brain: Does CYP2D7 encode functional protein? *Biochem Biophys Res Comm.* 2005; 336: 1241-1250.
23. **Gaedigk A, Ndjountche L, Leeder JS, Bradford LD.** Limited association of the 2988g > a single nucleotide polymorphism with CYP2D641 in black subjects. *Clin Pharmacol Ther.* 2005; 77: 228-230; author reply 230-221.
24. Kang P, Liao M, Wester MR, **Leeder JS, Pearce RE, Correia MA.** Cyp3a4-mediated carbamazepine (CBZ) metabolism: formation of a covalent CBZ-CYP3A4 adduct and alteration of the enzyme kinetic profile. *Drug Metab Dispos.* Dec 20 2007.
25. **Leeder JS, Gaedigk A, Lu X, Cook VA.** Epitope mapping studies with human anti-cytochrome P450 3A antibodies. *Mol Pharmacol.* 1996; 49: 234-243.
26. Marcucci KA, **Pearce RE, Crespi C, Steimel DT, Leeder JS, Gaedigk A.** Characterization of cytochrome P450 2D6.1 (CYP2D6.1), CYP2D6.2, and CYP2D6.17 activities toward model CYP2D6 substrates dextromethorphan, bufuralol, and debrisoquine. *Drug Metab Dispos.* 2002; 30: 595-601.
27. **Gaedigk A, Ndjountsche L, Gaedigk R, Bradford LD, Leeder JS.** Discovery of a novel non-functional cytochrome P4502D6 allele, CYP2D6*42, in African Americans. *Clin. Pharmacol. Ther.* 2003; 73: 575-576.
28. **Gaedigk A, Ryder DL, Bradford LD, Leeder JS.** CYP2D6 poor metabolizer status can be ruled out by a single genotyping assay testing for the -1584G promoter polymorphism. *Clin. Chem.* 2003; 49: 1008-1011.
29. **Gaedigk A, Bhatena A, Ndjountche L, Pearce RE, Abdel-Rahman SM, Alander SW, Bradford LD, Rogan PK, Leeder JS.** Identification and characterization of novel sequence variations in the cytochrome P4502D6 (CYP2D6) gene in African Americans. *Pharmacogenomics J.* 2005; 5: 173-182.
30. **Lowry JA, Kearns GL, Abdel-Rahman SM, Nafziger AN, Khan IS, Kashuba AD, Schuetz EG, Bertino JS Jr, van den Anker JN, Leeder JS.** Cisapride: a potential model substrate to assess cytochrome P4503A4 activity in vivo. *Clin Pharmacol Ther.* 2003; 73: 209-222.
31. Koren G, Cairns J, Chitayat D, **Gaedigk A, Leeder SJ.** Pharmacogenetics of morphine poisoning in a breastfed neonate of a codeine-prescribed mother. *Lancet.* 2006; 368: 704.
32. **Gaedigk A, Eklund JD, Pearce RE, Leeder JS, Alander SW, Phillips MS, Bradford LD, Kennedy MJ.** Identification and characterization of CYP2D6*56B, an allele associated with the poor metabolizer phenotype. *Clin Pharmacol Ther.* 2007; 81: 817-820.

33. **Gaedigk A**, Ndjountché L, Divakaran K, Bradford LD, Zineh I, Oberlander TF, Brousseau DC, McCarver DG, Johnson JA, **Alander SW**, Wayne Riggs K, **Leeder JS**. Cytochrome P4502D6 (CYP2D6) gene locus heterogeneity: characterization of gene duplication events. *Clin Pharmacol Ther.* 2007; 81: 242-251.
34. Sugamori KS, Wong S, **Gaedigk A**, Yu V, Abramovici H, Rozmahel R, Grant DM. Generation and functional characterization of arylamine N-acetyltransferase NAT1/NAT2 double knockout mice. *Mol Pharmacol.* 2003: 170-179
35. **Gaedigk A**. Interethnic differences of drug metabolizing enzymes. *Int. J. Clin. Pharmacol. Ther.* 2000; 38: 61-68.
36. **Leeder JS**. Pharmacogenetics and pharmacogenomics. *Pediatr Clin North Am.* 2001; 48: 765-781.
37. **Leeder JS, Kearns GL**. The challenges of delivering pharmacogenomics into clinical pediatrics. *Pharmacogenomics J.* 2002; 2: 141-143.
38. Seefelder C, **Leeder JS**. Cytochrome P450 pharmacogenetics and anaesthesia. *Paediatr Anaesth.* 2002; 12: 810-811.
39. **Leeder JS**. Developmental and pediatric pharmacogenomics. *Pharmacogenomics.* 2003; 4: 331-341.
40. **Leeder JS, Mitchell AA**. Application of pharmacogenomic strategies to the study of drug-induced birth defects. *Clin Pharmacol Ther.* 2007; 81: 595-599.

Appendix F

PPRU Data Repository White Paper

PPRU Clinical Data Repository (PeDaR)

SUMMARY

The development of a process and environment to capture, store and visualize PPRU-generated data is being pursued by a sub-team of the PPRU Network with the intention of developing a strategy and proposal for broader dissemination, feedback and eventual acceptance. In conjunction with the NIH Roadmap Initiative as well as NIH's data sharing policy, this effort aims to provide a standardized, secure environment to house data generated within the PPRU. While the primary focus of the effort will be constructed around ongoing and future trials, there will be a strategy to accumulate historical data as well. The proposed PPRU Clinical Data Repository (PeDaR) will provide a single secure location for the storage of all investigator initiated study data to promote data sharing and meta data analysis. The foundation of the PeDaR is built upon existing and widely adopted standards such as CDISC and BRIDG models. In addition, the PPRU Repository PK module potential to provide additional analysis capabilities is also discussed along with the potential for linking to additional data stores (e.g., non-PPRU data). The purpose of this document is to garner feedback from the PPRU investigators so that a more definitive path forward can be defined and that an agreement with the various stakeholders can be pursued.

BACKGROUND

In 1994, NICHD formed the Pediatric Pharmacology Research Units (PPRU) Network to address the information gaps regarding the safety and efficacy of pediatric drugs and the Pediatric Plan published by FDA's Center for Drug Evaluation and Research (CDER). The PPRU mission is to develop and disseminate new information that facilitates drug development and improves drug therapy for children. The Network has evolved over the 13 years since its inception and currently its focus reflects the increasing biological complexity in research.

Early drug oriented therapeutics focused on pharmacokinetic (PK) and labeling studies and understanding drug response and drug disposition. The focus evolved to exploring disease oriented therapeutics and increasingly is directed to understanding patient oriented therapeutics and the molecular determinants of drug responsiveness to explain pharmacokinetics, pharmacogenetics (PG), drug toxicity, genomics, proteomics, modeling, and lack of efficacy. To address these research areas, the PPRU performs PK studies (Phase I-II), PK/PD investigations and translation science integrating drug metabolism and PG and proteomics. Innovative approaches to trial design and execution enable the Network to explore the effects of childhood development on the pharmacokinetics of drugs, the influence of age-specific changes in drug disposition and pharmacodynamics, and the interplay between disease states and stage of development. The PPRU Network sites are conducting clinical studies in a wide array of therapeutic areas. Interventions for common disorders, such as allergies, asthma, and upper respiratory infections, as well as less common disorders, such as cystic fibrosis, severe infections, AIDS, sickle cell anemia, cancer, and childhood depression have been studied

by the Network.

The PPRU has been extremely productive during its existence and its output can be measured in patient experience. From 1994 through June of 2007, 9292 children have been enrolled in 264 studies (161 designed/co-designed by industry sponsor and 103 designed by investigator). While much of these data have been used in various publications, submitted to NIH and/or FDA and presented in various scientific forums, the location of the actual source data may be unknown. While there have been efforts to pool data for various meta analyses, these have been typically pursued on a project by project basis without any attempt to do this for a network wide objective. Some data pooling projects have also occurred without an exhaustive effort to ensure that all data available was included in the meta analysis. More importantly, there is no insurance that the data are being maintained in a reasonable electronic format beyond the time they are reported. The data are a valuable resource. The utility of such data beyond their original intended purpose is being appreciated particularly in the design of subsequent, prospective studies in similar populations. In addition, much of the PPRU-generated data are embedded in product labels or drug monographs. Such data are often used to drive dosing guidance, warnings and/or contraindications. Likewise, a more comprehensive strategy to house, maintain and provide access to this data is warranted.

This white paper discusses the project scope and functional requirements for a PPRU Clinical Data Repository (PeDaR). The repository will consist of a data warehouse maintained by the Network Coordinating Center (CC) with a user interface for downloading into analytic platforms. One such platform, iClinical, is designed for member access to data once compliance/permissions are established. PeDaR will contain not only PK data but will also house data generated from Network-affiliated studies regardless of study design or objectives. Thus, the repository can be used to:

- house study-related data from PPRU-affiliated trials
- index and join PK, PD, PK/PD and relevant PG data for across agent, therapeutic class and patient population
- create a data mart of PK, PD, PK/PD and relevant PG data that can be accessed and queried by PPRU CDR members
- index and join demographic and physiologic parameters for patients participating in PPRU trials
- create a data mart of demographic and physiologic parameter data that can be accessed and queried by PPRU PeDaR members

Other uses will certainly be defined and should be prioritized as they will impact the final functional requirements that define the IT effort.

PROJECT SCOPE

The project scope will address the following:

- Define and adopt standard data dictionaries for the definition of clinical, PK, PK/PD data, protocol/study elements etc to be stored in the PPRU data repository
- Define the process for identifying data to be collected and stored by CC into the PeDaR.
- Define the process for assigning rules / permissions on data access, within and across studies in the PPRU repository.
- Define requirements for the analytical interface to allow investigators to view, select and abstract data from the repository.

FUNCTIONAL REQUIREMENTS

Assuming the PPRU investigators support and agree with the PeDaR, the development of formal project requirements will proceed. Requirements will focus on the development of procedures to ensure the seamless registration of studies to the PeDaR and the details of accessibility and governance.

Development of standard data dictionaries is underway as is the development of common data collection forms. These are essential first steps in the workflow to be formalized upon broader acceptance of this proposal.

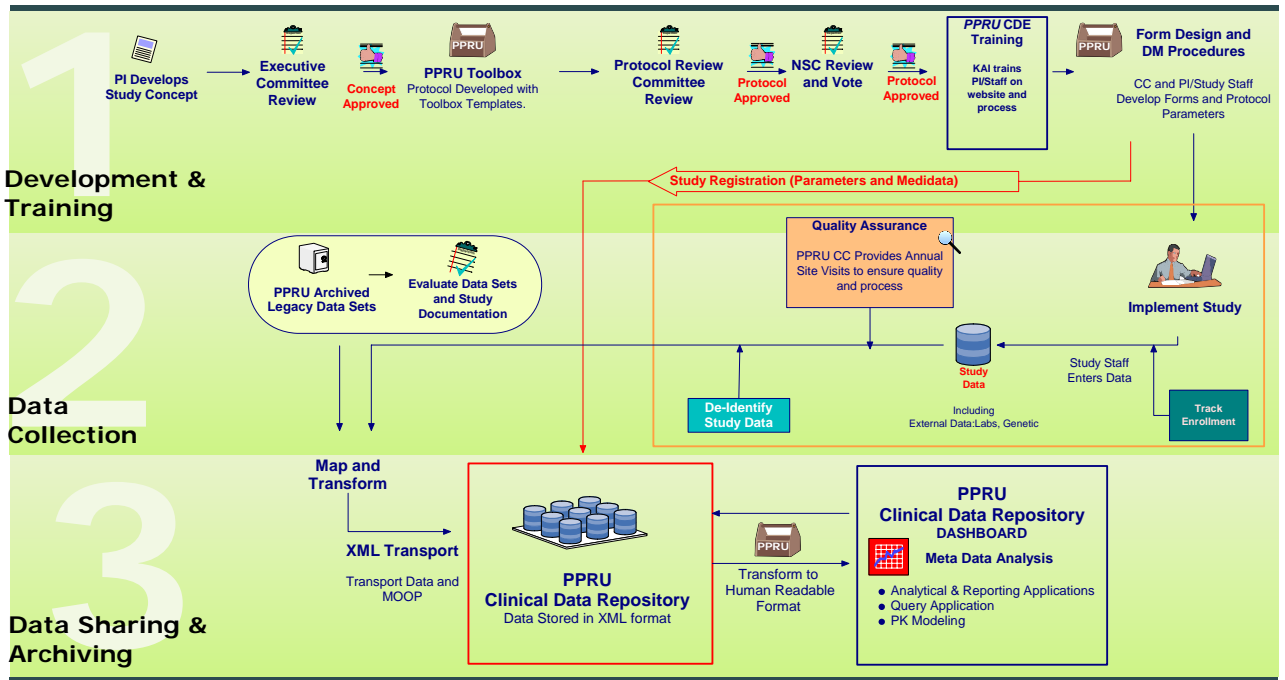
ACCESS and GOVERNANCE

Given the previous concerns around privacy, intellectual property and industry consent, much of the initial effort for the PeDaR project will be focused on detailing proposals for access and governance. As the initial effort will be focused on current and future studies, it is proposed that the PPRU craft language around the requirements of PeDaR to fulfill its commitment to the NIH data sharing policy and communicate this prospectively when dealing with industrial sponsors. Likewise, initially PeDaR will reflect the current PPRU data stakeholders so language on the privileges, access and accountability extended to PPRU sites and investigators will be defined in an agreement to be signed by those participating in the PeDaR creation. It should be appreciated by all that this may be a requirement in future RFPs of the PPRU.

Once the protocol is approved, the Coordinating Center will define the study template for the data warehouse. After study completion, access rights to the data will be determined and assigned.

Based on each investigator's profile and the definition of study stakeholder status and privileges, access to data will be provided. Likewise, access to completed and /or historical data can be petitioned to the PPRU CDR Committee (to be designated) so that meta-data can be assembled for further analysis. These details will be captured in the PeDaR agreement that all participants would ultimately agree to and sign.

PPRU Clinical Data Repository (CDR) Pathway



APPENDIX A: Timeline

Activity	Start Date	End Date
PPRU Meeting - White Paper, Proposed, Review and Comment	1/25/2008	2/1/2008
Discuss "Users" for iClinical development	1/25/2008	2/28/2008
Demo of iClinical for Pharmacometrics	2/1/2008	2/8/2008
Develop Governance and Data Sharing Policies	2/1/2008	3/30/2008
Establish Subcommittee and Develop Policy	1/25/2008	2/28/2008
Circulate and Revise Policies	3/1/2008	4/1/2008
Core Forms & Commons; Data Elements Finalized	11/1/2007	2/28/2008
Documents Finalized	4/2/2008	4/30/2008

Appendix G

List of Patient Oriented Publications

Patient-Oriented Therapeutics Publications

Abdel-Rahman SM, Benziger DP, Jacobs RF, **Jafri HS**, Fischer-Hong E, **Kearns GL**. Single-dose pharmacokinetics of daptomycin in children with suspected or proved Gram-positive infections. *Pediatr Infect Dis J* 2008 (April).

Abdel-Rahman SM, Jacobs RF, Massarella J, Kauffman RE, Bradley JS, Kimko HC, **Kearns GL**, Shalayda K, Curtin C, Maldonado SD, **Blumer JL**. Single-Dose Pharmacokinetics of Intravenous Itraconazole and Hydroxypropyl- β -Cyclodextrin in Infants, Children and Adolescents. *Antimicrobial Agents and Chemotherapy*, 2007 May 21.

Acosta EP, Brundage RC, King JR, **Sanchez PJ**, Sood S, Agrawal V, Homans J, Jacobs RF, Lang D, Romero JR, Griffin J, Cloud G, Whitley R, Kimberlin DW. Ganciclovir population pharmacokinetics in neonates following intravenous administration of ganciclovir and oral administration of a liquid valganciclovir formulation. *Clinical Pharmacology and Therapeutics*, 2007 Jun; 81(6):867-72.

Allegaert K, van Schaik RH, Vermeersch S, Verbesselt R, Cossey V, Vanhole C, van Fessem M, de Hoon J, **van den Anker JN**. Postmenstrual age and CYP2D6 polymorphisms determine tramadol O-demethylation in critically ill neonates and infants. *Pediatr Res* 2008: accepted for publication.

Ambat MT, Ostrea EM Jr, Aranda, JV. Effect of ibuprofen L-lysinate on bilirubin binding to albumin as measured by saturation index and horseradish peroxidase assays. *Journal of Perinatology*. January 17, 2008

Aman MG, **Vinks AA**, Remmerie, B, Mannaert E, Ramadan Y, Masty, J, Lindsay RL, Malone K. Plasma pharmacokinetics of risperidone and their relationship to saliva concentrations in children with psychiatric or neurodevelopmental disorders. *Clinical Therapeutics*, 2007, 29 (7): 1476-1486

Benjamin Jr DK, Schelonka R, White R, et al. A blinded, randomized, multicenter study of an intravenous Staphylococcus aureus immunoglobulin. *J Perinatol* 2006;26:290-295

Benjamin Jr DK, Smith PB, Murphy D, et al. Peer-reviewed publication of clinical trials completed for pediatric exclusivity. *JAMA* 2006;296:1266-1273.

Weimert NA, DeRotte M, Alloway RR, Woodle ES, **Vinks AA**. Monitoring of Inosine Monophosphate Dehydrogenase Activity as a Biomarker for Mycophenolic Acid Effect: Potential Clinical Implications. *Ther Drug Monit*, 2007 29(2): 141-149

Berul, Charles I.; **Ward, Robert M.**; **Kearns, Gregory L.**; Kerstens, Rene; Robinson, Patricia K.; Van Den Ouweland, Frank A. Electrocardiographic observations in premature and term infants on cisapride therapy. *Paediatric and Perinatal Drug Therapy*, 2006 July; 7(2): 77-88.

Blake MJ, Abdel-Rahman SM, Pearce RE, Leeder JS, **Kearns GL**. Effect of diet on the development of drug metabolism by cytochrome P-450 enzymes in healthy infants. *Pediatr Res* 2006; 60(6): 717-23.

Blake MJ, **Gaedigk A**, Pearce RE, Bomgaars LR, Christensen ML, Stowe C, James LP, Wilson JT, **Kearns GL**, **Leeder JS**. Ontogeny of dextromethorphan O- and N-demethylation in the first year of life. *Clin Pharmacol Ther* 2007; 81(4): 510-6.

Bomgaars LR, Geyer JR, Franklin J, Dahl G, Park J, Winick NJ, Klenke R, Berg SL, **Blaney SM**. Phase I trial of Intrathecal Liposomal Cytarabine in Children with Neoplastic Meningitis. *Journal of Clinical Oncology*. 2004; 22: 3916-3921.

Bomgaars L, Berg S, Kerr J, Klenke R, Kline N, **Blaney S**. Phase 1 clinical and pharmacokinetic trial of irinotecan administered weekly x 4, every 6 weeks in children with refractory cancer. *Pediatric Blood and Cancer*. 2006;46(1): 50-55.

Burns JC, Best BM, Mejjias A, Mahoney L, Melish ME, Jackson MA, Asmar B, Lange D, Connor JD, Keenan G, Ramilo O. Infliximab treatment of IVIG-resistant Kawasaki disease – submitted to *J Peds*. PPRU Protocol #10688

Capparelli E, **Reed MD**, Bradley JS, **Kearns GL**, Jacobs RF, Damle BD, **Blumer JL**, Grasela DM. Pharmacokinetics of gatifloxacin in infants and children. *Antimicrobial Agents and Chemotherapy*. 2005; 49(3):1106-1112. PPRU **Protocol # 10252**.

Capparelli EV, **van den Anker J**, Brown K, Baren J, Mahajan P, Vance C, Lillis K, Stanley R, Davis D, Singh T, **Blumer J**, Chamberlain J, and the PPRU and PECARN Networks. Lorazepam pharmacokinetics in Children with status epilepticus. PAS-SPR 2007, Toronto CA. **PPRU Protocol #10788**.

Capparelli E, Lane J for the Lorazepam Pediatric Sedation Study Group. Population Pharmacokinetics and Pharmacodynamics of Lorazepam for Sedation of Mechanically Ventilated Infants and Children. Accepted for presentation at PAS Meeting, Honolulu 5/2008. **PPRU Protocol #10774**.

Chien S, **Wells TG**, **Blumer JL**, Kearns GL, Bradley JS, Bocchini JA, Natarajan J, Maldonado S, Noel GJ. Levofloxacin pharmacokinetics in children. *Journal of Clinical Pharmacology*. 2005; 45: 153-160. **PPRU Protocol # 10336/10340**.

Chintagumpala M, **Blaney SM**, **Bomgaars LR**, Aleksic A, Kuttesch JF, Klenke RA, Berg SL. Phase I and pharmacokinetic study of thalidomide with Carboplatin in children with cancer. *Journal of Clinical Oncology*. Nov 2004; 22(21): 4394-4400.

Edwards DJ, Chugani DC, Chugani HT, Chehab J, Malian M, Aranda JV. Pharmacokinetics of buspirone in autistic children. *Journal of Clinical Pharmacology*. May 2006; 46(5): 508-14. PPRU Protocol # 10658S.

Findling RL, **Reed MD**, O'Riordan MA, Demeter CA, Stansbrey RJ, McNamara NK. A 26-week open-label study of quetiapine in children with conduct disorder. *Journal of Child and Adolescent Psychopharmacology*, 2007 Feb; 17(1):1-9.

Finkel JC, Pestieau SR, Quezado ZM. Ketamine as an Adjuvant for Treatment of Cancer Pain in Children and Adolescents. *The Journal of Pain: Official Journal of the American Pain Society*, 2007 Jun; 8(6):515-521.

Gaedigk A, Eklund JD, Pearce RE, **Leeder JS**, Alander SW, Bradford LD, **Kennedy MJ**. Identification and characterization of CYP2D6*56B, an allele associated with the poor metabolizer phenotype. *Clin Pharmacol Ther* 2007;81(6):817-820.

Gaedigk A, Simon SD, Pearce RE, Bradford LD, Kennedy MJ, **Leeder JS**. The CYP2D6 activity score: translating genotype information into a qualitative measure of phenotype. *Clin Pharmacol Ther* 2008;83: 234-242.

Heresi GP, Gerstmann DR, **Reed MD**, **van den Anker JN**, **Blumer JL**, Kovanda L, Keirns JJ, Buell DN, **Kearns GL**. The pharmacokinetics and safety of micafungin, a novel echinocandin, in premature infants. *Pediatric Infectious Disease Journal*, 2006 Dec; 25(12):1110-5.

Hogg RJ, Delucchi A, Sakihara G, **Wells TG**, Tenney F, Batsky DL, **Blumer JL**, Vogt BA, Lo MW, Hand E, Panebianco D, Rippley R, Shaw W, Shahinfar S., A multicenter study of the pharmacokinetics of lisinopril in pediatric patients with hypertension. *Pediatric Nephrology*, 2007 May; 22(5):695-701.

James LP, Simpson PM, Farrar HC, **Kearns GL**, Wasserman GS, **Blumer J**, **Reed MD**, **Sullivan JE**, Hinson JA, (The Pediatric Pharmacology Research Unit Network, NICHD) Cytokines and toxicity in acetaminophen overdose. *J Clin Pharmacol*, 2005;45: (10): 1165-1171.

Jeha S, Gaynon PS, Razzouk BI, Franklin J, Kadota R, Shen V, Luchtman-Jones L, Rytting M, **Bomgaars LR**, Rheingold S, Ritchey K, Albano E, Arceci RJ, Goldman S, Griffin T, Altman A, Gordon B, Steinherz L, Weitman S, Phase II study of clofarabine in pediatric patients with refractory or relapsed acute lymphoblastic leukemia. *Journal of Clinical Oncology*. April 2006; 24(12): 1917-1923. **PPRU Protocol # 10614, 10612.**

Kennedy MJ, Davis DA, Smith NB, Pierce WM, Pearce RE, **Gaedigk A**, **Kearns GL**. Growth Hormone Has No Effect on Activities of CYP1A2, N-acetyltransferase 2, Xanthine Oxidase or CYP2D6 in Children with Idiopathic Growth Hormone Deficiency. Submitted for publication

Kennedy MJ, Griffin AR, Su R, Merchant M., Klein JB. Urine collected from diapers can be used for proteomic profiling in infants and young children. Submitted for publication

Muller AE, de Jongh J, Bult Y, Goessens WH, Mouton JW, Danhof M, **van den Anker JN**. Pharmacokinetics of penicillin G in infants with a gestational age of less than 32 weeks. *Antimicrob Agents Chemother* 2007 Oct; 51(10):3720-5. Epub 2007 Jul 23.

Rakhmanina NY, Capparelli E, van den Anker JN, et al. Nevirapine concentration in non-stimulated saliva: an excellent substitute for plasma sampling in children with HIV-I infection. *Ther Drug Monitor* 2007;29:110-117.

Saez_Llorens X, Moreno MT, Ramilo O, **Sanchez PJ**, Top FH, Connor EM. Safety and pharmacokinetics of palivizumab therapy in children hospitalized with respiratory syncytial virus infection. *Pediatric Infectious Disease Journal*. 2004; 23: 707-712.

Sood BG, Delaney-Black V, Glibetic M, Aranda JV, Chen X, Shankaran S. PGE2/TXB2 imbalance in neonatal hypoxemic respiratory failure. *Acta Paediatrica*, 2007 May;96(5):669-73.

Toltzis P, Dul M, O'Riordan MA, Toltzis H, **Blumer JL**. Comparative effects of single-dose ceftriaxone versus three oral antibiotic regimens on stool colonization by resistant bacilli in children. *Pediatric Infectious Disease Journal*, 2007 Jan; 26(1):25-30.

Tutag Lehr V, Cepeda E, Frattarelli DAC, Thomas R, Whitty JE, Aranda JV. Lidocaine 4% cream (L.M.X.4) for anesthesia during newborn circumcision. *Obstetrics & Gynecology*. 2004; 103(4): S37. PPRU Protocol # 10522.

Walsh TJ, **Adamson PC**, Seibel NL, Flynn PM, Neely MN, Schwartz C, Shad A, Kaplan SL, Roden MM, Stone JA, Miller A, Bradshaw SK, Li SX, Sable CA, Kartsonis NA. An open-label, sequential dose-escalation study to investigate the pharmacokinetics, safety, and tolerability of Caspofungin in children and adolescents. *Antimicrobial Agents and Chemotherapy*. 2005 Nov; 49(11):4536-45.

Walsh TJ, Karlsson MO, Driscoll T, Arguedas AG, **Adamson P**, Saez-Llorens X, Vora AJ, Arrieta AC, **Blumer J**, Luster I, Milligan P, Wood N. Pharmacokinetics and safety of intravenous voriconazole in children after single or multiple-dose administration. *Antimicrobial Agents and Chemotherapy*. 2004; 48(6): 2166-2172.

Ward RM, Benitz WE, **Benjamin DK Jr**, Blackmon L, Giacoia GP, Hudak M, Lasky T, Rodriguez W, Selen A. Criteria supporting the study of drugs in the newborn. *Clinical therapeutics*, 2006 Sep;28(9):1385-98.

Ward RM, Kauffman R. Future of pediatric therapeutics: reauthorization of BPCA and PREA. *Clin Pharmacol Ther*, 2007 Apr;81(4):477-9.

Wenning LA, Murphy GM, James LP, Blumer JL, Marshall JD, Baier J, Scheimann AO, Panebianco DL, Zhong L, Eisenhandler R, Yeh KC, **Kearns GL**. Pharmacokinetics of famotidine in infants. *Clin Pharmacokinet* 2005; 44(3): 395-406.

Zuppa AF, Nicolson SC, **Adamson PC**, Wernovsky G, Mondick JT, Burnham N, Hoffman TM, Gaynor JW, Davis LA, Greeley WJ, Spray TL, **Barrett JS**. Population pharmacokinetics of milrinone in neonates with hypoplastic left heart syndrome undergoing stage I reconstruction. *Anesthesia and Analgesia*. April 2006; 102(4): 1062-1069. **PPRU Protocol # MSCIDA.**

Zuppa AF, Nadkarni V, Davis L, **Adamson PC**, Helfaer MA, Elliott MR, Abrams J, Durbin D. The effect of a thyroid hormone infusion on vasopressor support in critically ill children with cessation of neurologic function. *Critical Care Medicine*. 2004; 32(11): 2318-2322.

Appendix H

List of Publications in Neonatology

PPRU Network Publications Involving Neonatology 1994 to 2008

Neonatal Publications 1994-1998

Belsha CW, **Wells TG**, McNiece KL, et al. Pharmacokinetics and Pharmacodynamics of ranitidine in neonates treated with ECMO. *American Journal of Hypertension* 1998; 11:410-417

Kearns GL, van den Anker JN, Reed MD, Blumer JL. Pharmacokinetics of metoclopramide in neonates. *J Clin Pharmacol* 1998; 37:122-128

Mirochnick M, **Capparelli E**, Dankner W, et al. Zidovudine pharmacokinetics in premature infants exposed to HIV, *Antimicrob Agents and Chemother* 1998;42:808-812.

Neonatal Publications 1999-2003

Capparelli EV, Lane JR, Romanowski GL, et al. The influences of renal function and maturation on vancomycin elimination in newborns and infants. *Journal of Clin Pharmacol* 2001; 41:927-934.

Capparelli EV, Mirochnick M, Dankner W, et al. Pharmacokinetics and tolerance of zidovudine in preterm infants. *Journal of Pediatrics* 2002; 47-52.

De Hoog M, Mouton JW, Schoemaker RC, Verduin CM, **van den Anker JN**. Extended interval dosing of tobramycin in neonates; implications for therapeutic drug monitoring. *Clin Pharmacol & Therapeutics* 2002; 71(5):349-358.

De Hoog M, Schoemaker RC, Mouton JW, **van den Anker JN**. Vancomycin population pharmacokinetics in neonates. *Clin Pharmacol & Therapeutics* 2000; 67:360-367.

De Wildt SN, **Kearns GL, Leeder JS, van den Anker JN**. Glucuronidation in humans. Pharmacogenetic and developmental aspects. *Clin Pharmacokinet* 1999; 36(6):439-452

De Wildt SN, **Kearns GL, Leeder JS, van den Anker JN**. Cytochrome P450 3A: ontogeny and drug disposition. *Clin Pharmacokinet* 1999; 37(6):485-505

De Wildt SN, Kerkvliet CT, Wezenberg MG, Ottink S, Hop WC, Vulto AG, **van den Anker JN**. Use of saliva in therapeutic drug monitoring of caffeine in preterm infants. *Therapeutic Drug Monitor* 2001; 23(3):250-254.

De Wildt SN, **Kearns GL**. Hop WC, Murry DJ, Abdel-Rahman SM, **van den Anker JN**. Pharmacokinetics and metabolism of intravenous midazolam in preterm infants. *Clin Pharmacol & Therapeutics* 2001; 70(6):525-531.

De Wildt SN, **Kearns GL**, Hop WC, Murry DJ, Abdel-Rahman SM, **van den Anker JN**. Pharmacokinetics and metabolism of oral midazolam in preterm infants. *British Journal of Clin Pharmacol* 2002; 53(4):390-392.

Helms RA, Storm MC, Stuck KL, et al. A Phase I open-label study of the safety and pharmacokinetics of repeated-dose micafungin in neonates. *Journal of Pediatrics* 1999; 134(3):358-361.

Kearns GL, Bradley JS, Jacobs RF, et al. Single dose pharmacokinetics of pleconaril in neonates. *Ped Infect Dis J* 2000; 19:833-839.

Kearns GL, Jungbluth GL, Abdel-Rahman SM, Hopkins NK, Welshman IR, Grzebyk RP, Bruss JB, **van den Anker JN**. Impact of ontogeny on linezolid disposition in neonates and infants. *Clin Pharmacol Ther* 2003; 74(5):413-422.

Kearns GL, Robinson PK, Wilson JT, Costello D, Ward RM, **van den Anker JN**. Cisapride disposition in neonates and infants: in vivo relection of cytochrome P450 3A4 ontogeny. *Clin Pharmacol Ther* 2003; 74(4):312-325.

Monin P, **Aranda J**, Bansal K, Trippenbach T. Effect of increased GABA concentrations on breathing in unanesthetized newborn rabbits. *Biology of the Neonate* 1999; 76(3):168-180.

Van Overmeire B, Touw D, Schepens PJ, **Kearns GL**, **van den Anker JN**. Ibuprofen pharmacokinetics in preterm infants with patent ductus arteriosus. *Clin Pharmacol & Therapeutics* 2001; 70:336-343.

Neonatal Publications 2004-Present

Acosta EP, Brundage RC, King JR, **Sanchez PJ**, et al. Ganciclovir population pharmacokinetics in neonates following intravenous administration of ganciclovir and oral administration of a liquid valganciclovir formulation. *Clin Pharmacol & Therapeutics* 2007; 81(6):867-872.

Allegaert K, Anderson BJ, **van den Anker JN**, et al. Renal drug clearance in preterm neonates: relation to prenatal growth. *Therapeutic Drug Monitoring* 2007;29(3):284-291.

Allegaert K, van Schaik RH, Vermeersch S, Verbesselt R, Cossey V, Vanhole C, van Fessem M, de Hoon J, **van den Anker JN**. Postmenstrual age and CYP2D6 polymorphisms determine tramadol O-demethylation in critically ill neonates and infants. *Pediatric Research* 2008.

Anderson BJ, Allegaert K, **van den Anker JN**, et al. Vancomycin pharmacokinetics in preterm neonates and the prediction of adult clearance. *British J Clin Pharmacol* 2007; 63(1):75-84.

Aranda JV, Cataldi L, Fanos V. Clinical pharmacology of antimicrobials for urinary tract infections in newborns and young infants. *J Chemother* 2006; 18(3):14-15.

Frattarelli DA, Ergun H, Lulic-Botica M, **Aranda JV**. Vancomycin elimination in human infants with intrauterine growth retardation. *Pediatr Infect Dis J* 2005; 24(11):979-983.

Beharry KD, Modanlou HD, **Hasan J**, et al. Comparative effects of early postnatal ibuprofen and indomethacin on VEGF, IGF-1, and GH during rat ocular development. *Invest Ophthalmol* 2006; 47(7):3036-3043.

Blake MJ, Abdel-Rahman SM, Pearce RE, Leeder JS, **Kearns GL**. Effect of diet on the development of drug metabolism by cytochrome P-450 enzymes in healthy infants. *Pediatr Res* 2006; 60(6):717-723.

Blake MJ, Gaedigk A, Pearce RE, Bomgaars LR, Christensen ML, Stowe C, James LP, Wilson JT, **Kearns GL**, Leeder JS. Ontogeny of dextromethorphan O- and N-demethylation in the first year of life. *Clin Pharmacol & Therapeutics* 2007; 81(4):510-516.

Capparelli E, Hochwald C, Rasmussen M, et al. Population pharmacokinetics of cefepime in the neonate. *Antimicrob Agents & Chemother* 2005; 49:2760-2766.

De Wildt SN, Berns MJ, **van den Anker JN**. ¹³C-erythromycin breath test as a noninvasive measure of CYP3A activity in newborn infants: a pilot study. *Therapeutic Drug Monitoring* 2007; 29(2):225-230.

Finkel JC, Quezado ZM. Hypothermia-induced bradycardia in a neonate receiving dexmedetomidine. *J Clin Anesth* 2007; 19(4):290-292.

Finkel JC. Use of nonsteroidal anti inflammatory drugs in preterm, term neonates and infants: analgesia by consensus? *Paed Anesth* 2007; 17(10):915-917.

Galinkin JL, Kurth CD, Shi H, Priestly MA, Loepke AW, **Adamson PC**. The plasma pharmacokinetics and cerebral spinal fluid penetration of intravenous topiramate in newborn pigs. *Biopharm Drug Dispos* 2004; 25(6):265-271.

Keller RL, Tacy TA, Fields S, Ofenstein JP, **Aranda JV**, Clyman RI. Combined treatment with a nonselective nitric oxide synthase inhibitor (l-NMMA) and indomethacin increases ductus constriction in extremely premature newborns. *Pediatr Res* 2005; 58(6):1216-1221.

Kovacs A, Cowles MK, Britto P, **Capparelli E**, et al. Pharmacokinetics of didanosine and drug resistance mutations in infants exposed to ZDV during gestation or postnatally and treated with didanosine and zidovudine in the first three months of life. *Ped Infect Dis J* 2005; 24:503-509.

Heresi GP, Gerstmann DR, **Reed MD, van den Anker JN, Blumer JL**, Kovanda L, Keirns JJ, Buell DN, **Kearns GL**. The pharmacokinetics and safety of micafungin, a novel echinocandin, in premature infants. *Ped Infect Dis J* 2006; 25(12):1110-1115.

Lehr VT, Cepeda E, Frattarelli DA, Thomas R, LaMothe J, **Aranda JV**. Lidocaine 4% cream compared with lidocaine 2.5% and prilocaine 2.5% or dorsal penile block for circumcision. *Am J Perinatol* 2005; 22(5):231-237.

Lehr VT, Zeskind PS, Ofenstein JP, Cepeda E, Warriar I, **Aranda JV**. Neonatal facial coding system scores and spectral characteristics of infant crying during newborn circumcision. *Clin J Pain* 2007; 23(5):417-424.

Lugo RA, Ballard J. Albuterol delivery from MDI and spacer is reduced following short duration manual ventilation in a neonatal ventilator-lung model. *Respiratory Care* 2004; 49(9):1029-1034.

Madadi P, Koren G, Cairns J, Chitayat D, Gaedigk A, **Leeder JS**, et al. Safety of codeine during breastfeeding: fatal morphine poisoning in the breastfed neonate of a mother prescribed codeine. *Can Fam Physician* 2007; 53(6):33-35.

Mirochnick M, Stek A, Acevedo M, Keller M, Holland D, **Capparelli E**, et al. Safety and pharmacokinetics of nelfinavir co-administered with zidovudine and lamivudine in infants during the first 6 weeks of life. *J Acquired Immune Deficiency Syndromes* 2005; 39:189-194.

Muller Ae, De Jongh J, Bult Y, Goessens WH, Mouton JW, Danhof M, **van den Anker JN**. Pharmacokinetics of penicillin G in infants with a gestational age of less than 32 weeks. *Antimicrob Agents & Chemother* 2007; 51(10):3720-3725.

Shapiro R, Holland D, **Capparelli E**, et al. HIV inhibitory serum concentrations of antiretrovirals detected in breastfeeding infants of women receiving antiretroviral treatment in Botswana. *JID* 2005; 192:720-727.

Shellhaas R, **Clancy R**. Contemporary characterization of neonatal seizures by full array and single channel EEGs. *J Clin Neurophysiol* 2007; 118:2156-2161.

Shellhaas R, Soaita A, **Clancy RR**. The sensitivity of amplitude-EEG in neonatal seizure detection. *Pediatrics* 2007; 120:770-777.

Sood BG, Glibetic B, **Aranda JV**, et al. Systemic levels following PGE1 inhalation in neonatal hypoxemic respiratory failure. *Acta Paediatr* 2006; 95(9):1093-1098.

Van Woerkom R, Beharry KD, Mondanlou HD, Parker J, Rajan V, Akmal Y, **Aranda JV**. Influence of morphine and naloxone on endothelin and its receptors in newborn piglet brain vascular endothelial cells: clinical implications in neonatal care. *Pediatr Res* 2004; 55(1):147-151.

Appendix I

Trainee Publications and Career Progression

Trainee Publications and Career Progression (all trainees are in bold)

1995

Wu LR, Capparelli EV, Connor JD. Therapy of pediatric AIDS. *Curr Opin Pediatr* 1995; 7:214-9.

1996

James LP, Marshall JD, Heulitt MJ, Wells TG, Letzig L, Kearns GL. Pharmacokinetics and pharmacodynamics of famotidine in children. *Journal of Clinical Pharmacology* 1996; 36:48-54.

1998

James LP, Farrar HC, Komoroski EM, Wood WR, Graham CJ, Bornemeier RA, Valentine JL. Sympathomimetic drug use in adolescents presenting to a pediatric emergency department with chest pain. *Clinical Toxicology* 1998; 36(4):321-328.

James LP, Marotti T, Stowe CD, Farrar HC, Taylor BJ, Kearns GL. Pharmacokinetics and pharmacodynamics of famotidine in infants. *Journal of Clinical Pharmacology* 1998; 38:1089-1095.

Mirochnick M, Capparelli E, Dankner W, Sperling RS, Van Dyke R, Spector S. Zidovudine pharmacokinetics in premature infants exposed to HIV. *Antimicrob Agent Chemother* 1998; 42:808-812.

Schexnayder S, **James LP**, Kearns GL, Farrar HC. The pharmacokinetics of continuous infusion pralidoxime in children with organophosphate poisoning. *Clinical Toxicology* 1998; 36(6):459-555.

1999

Farrar HC, **James LP**. Characteristics of pediatric admissions for cyclic antidepressant poisoning. *American Journal of Emergency Medicine* 1999; 17(5):495-496.

James LP, Stowe CD, Farrar HC, Menendez AA, Argao EA. The pharmacokinetics of oral ranitidine in children and adolescents with cystic fibrosis. *Journal of Clinical Pharmacology* 1999; 39:1242-1247.

Kearns GL, Abdel-Rahman SM, **James LP**, Blowey DL, **Marshall JD**, Wells TG, Jacobs RF and the Pediatric Pharmacology Research Unit Network. Single-dose pharmacokinetics of a pleconaril (VP63843) oral solution in children and adolescents. *Antimicrobial Agents and Chemotherapy*, 1999; 43(3):634-638.

Marshall JD, Kearns GL. Developmental pharmacodynamics of cyclosporine. *Clin Pharm Ther* 1999; 66:66-75.

Mirochnick M, **Capparelli EV**, **Connor JD**. **Pharmacokinetics of zidovudine in infants: a population analysis across studies. Clin Pharmacol Therap 1999; 66:16-24.**

2000

Alander SW, Dowd MD, Bratton SL, Kearns GL. Pediatric acetaminophen overdose: risk factors associated with hepatocellular injury. *Arch Pediatr Adolesc Med*. 2000; 154: 346-350.

Glauser TA, Nigro M, Sachdeo R, Pasteris LA, Weinstein S, Abou-Khalil B, et al. Adjunctive therapy with oxcarbazepine in children with partial seizures. The Oxcarbazepine Pediatric Study Group. *Neurology* 2000; 54(12):2237-44.

Glauser TA, Pippenger CE. Controversies in blood-level monitoring: reexamining its role in the treatment of epilepsy. *Epilepsia* 2000; 41 Suppl 8:S6-15.

Glauser TA. Topiramate in the catastrophic epilepsies of childhood. *J Child Neurol* 2000; 15 Suppl 1:S14-21.

Schutze GE, **Lowry JA**, Kearns GL. Monitoring of aminoglycoside serum concentrations. *Pediatr Infect Dis J*. 2000; May: 489-490.

Williams KM, Kearns GL. Lipid amphotericin preparations. *Pediatr Infect Dis J*. 2000; 19: 567-569.

2001

Behm MO, Kearns GL. Treatment of pain with gabapentin in a neonate. *Pediatrics*. 2001; 108: 482-484.

Berg S, Serabe B, Aleksic A, **Bomgaars L**, McGuffey L, Dauser R, Durfee J, Nuchtern J, Blaney S. Pharmacokinetics and cerebrospinal fluid penetration of phenylacetate and phenylbutyrate in the nonhuman primate. *Cancer Chemotherapy and Pharmacology*. May 2001; 47(5): 385-390.

Evans WE, Hon YY, **Bomgaars L**, Coutre S, Holdsworth M, Janco R, Johnson R, Kalwinsky D, Keller F, Khatib Z, Margolin J, Murray J, Quinn J, Ravindranath Y, Ritchey K, Roberts W, Rogers Z, Schiff D, Steuber C, Tucci F, Kornegay N, Krynetski EY, Relling M. Preponderance of thiopurine S-methyltransferase deficiency and heterozygosity among patients intolerant to mercaptopurine or azathioprine. *J. Clin. Oncology*. April 2001; 19(8): 2293-2301.

Lowry JA, Jarrett RV, Wasserman G, Pettett G, Kauffman RE. Theophylline toxicokinetics in premature newborns. *Archives of Pediatrics and Adolescent Medicine*. 2001: 934-939.

Lowry JA, Corry A, Fitzmaurice L, Jackson MA, Kearns GL. Coadministration of mefloquine and chloroquine: use of a pharmacokinetic based approach to reduce toxicity. *Pediatric Infectious Disease Journal*. 2001; 20: 223-224.

2002

Aravind MK, **Precilla R**, Ofenstein JP. A rapid and sensitive high-performance liquid chromatography assay of rofecoxib in human serum. *Journal of Chromatographic Science*. 2002 Jan; 40(1):26-8. **PPRU Protocol # 10300**.

Glauser TA, Pellock JM. Zonisamide in pediatric epilepsy: review of the Japanese experience. *J Child Neurol* 2002; 17(2):87-96.

Lacayo NJ, Lum BL, Becton DL, Weinstein H, Ravindranath Y, Chang MN, **Bomgaars LR**, Lauer SJ, Sikic BI, Dahl GV. Pharmacokinetic interactions of cyclosporine with etoposide and mitoxantrone in children with acute myeloid leukemia. *Leukemia* 2002; 16(5): 920-927.

Ostrea EM, Morales V, Ngoumgna E, **Precilla R**, Tan E, Hernandez E, Ramirez GB, Cifra HL, Manlapaz ML. Prevalence of fetal exposure to environmental toxins as determined by meconium analysis. *Neurotoxicology*. 2002 Sep; 23(3):329-39.

2003

Behm MO, Kearns GL. Crotaline Fab antivenom for treatment of children with rattlesnake envenomation. *Pediatrics*. 2003; 112: 1458-1459; author reply 1458-1459.

Best BM, Burns JC, DeVincenzo J, Phelps SJ, Blumer JL, Wilson JT, Capparelli EV, Connor JD and the Pediatric Pharmacology Research Unit Network Pharmacokinetic Safety Evaluation of a Pediatric Oral Formulation of Pentoxifylline in Kawasaki Disease. *Curr Ther Res Clin Exp*. 2003; 64:96-115.

Kearns GL, Abdel-Rahman SM, **Alander SW**, Blowey DL, Leeder JS, Kauffman RE. Developmental pharmacology--drug disposition, action, and therapy in infants and children. *N Engl J Med*. 2003; 349: 1157-1167.

Kearns GL, Heacock J, Daly SJ, Singh H, **Alander SW**, Qu S. Percutaneous lidocaine administration via a new iontophoresis system in children: tolerability and absence of systemic bioavailability. *Pediatrics*. 2003; 112: 578-582.

Lowry JA, Kearns GL, Abdel-Rahman SM, Nafziger AN, Khan IS, Kashuba AD, Schuetz EG, Bertino JS Jr, van den Anker JN, Leeder JS. Cisapride: a potential model substrate to assess cytochrome P4503A4 activity in vivo. *Clin Pharmacol Ther*. 2003; 73: 209-222.

Lulic M, **Ergun H**, **Frattarelli DAC**, Tutag Lehr V, Aranda JV. Vancomycin Elimination in Intrauterine Growth Retardation. *Pediatric Research*. 2003; 53(4): 317A.

Maples HD, Stowe CD, Saccente SL, Jacobs RF. Voriconazole serum concentration in an infant treated for *Trichosporon beigeli* infection. *Pediatric Infectious Disease Journal*. 2003; 22(11)1022-4.

Maples HD, James LP, Stowe CD, Jones DP, Hak EB, Blumer JL, Vogt B, Wilson JT, Kearns GL, Wells TG. Famotidine Disposition in Children and Adolescents with Chronic Renal Insufficiency. *Journal of Clinical Pharmacology* 2003; 43(1):7-14.

Sandhu RS, **Precilla RP**, Simonelli TM, Edwards DJ. Influence of goldenseal root on the pharmacokinetics of indinavir. *Journal of Clinical Pharmacology*. 2003; 43: 1283-1288

Thompson P, Balis F, Serabe BM, Berg S, Adamson P, Klenke R, Aiken A, Packer R, Murry DJ, Jakacki R, Blaney SM. Pharmacokinetics of phenylacetate administered as a 30-min infusion in children with refractory cancer. *Cancer Chemotherapy and Pharmacology*. Nov. 2003; 52(5): 417-423.

2004

Abdel-Rahman SM, Penny J, **Alander SW**. Trichophyton rubrum tinea capitis in a young child. *Pediatr Dermatol*. 2004; 21: 63-65.

Bomgaars LR, Geyer JR, Franklin J, Dahl G, Park J, Winick NJ, Klenke R, Berg SL, Blaney SM. Phase I trial of Intrathecal Liposomal Cytarabine in Children with Neoplastic Meningitis. *Journal of Clinical Oncology*. 2004; 22: 3916-3921.

Chintagumpala M, Blaney SM, **Bomgaars LR**, Aleksic A, Kuttesch JF, Klenke RA, Berg SL. Phase I and pharmacokinetic study of thalidomide with Carboplatin in children with cancer. *Journal of Clinical Oncology*. Nov 2004; 22(21): 4394-4400.

Cohen IT, **Finkel JC**, Hannallah RS, Goodale DB. Clinical and biochemical effects of propofol versus sevoflurane in healthy infants and young children. *Paediatric Anaesthesia* 2004; 14:135-42.

Ergun H, Frattarelli DA, Aranda JV. Characterization of the role of physiochemical factors on the hydrolysis of dipyrrone. *Journal of Pharmaceutical and Biomedical Analysis*. May 2004; 35(3): 479-487.

Finkel JC, Elrefai A. The use of dexmedetomidine to facilitate opioid and benzodiazepine detoxification in an infant. *Anes & Analg* 2004; 98:1658-1659.

Fraaij PL, **Rakhmanina N**, Burger DM, De Groot R. Therapeutic drug monitoring in children with HIV/AIDS. *Ther Drug Monitor* 2004; 26(2):122-6.

Karen Dineen Wagner, **Adelaide S. Robb**, Robert L. Findling, Jianqing Jin, Marcelo M. Gutierrez, and William E. Heydorn. A Randomized, Placebo-Controlled Trial of Citalopram for the Treatment of Major Depression in Children and Adolescents *Am J Psychiatry*, Jun 2004; 161: 1079 - 1083.

Kennedy MJ, Scripture CD, Kashuba ADM, Scott CS, Gotschall RR, Gaedigk A, Kearns GL. Assessment of hepatic enzyme activity in children with cystic fibrosis using caffeine and dextromethorphan phenotyping. *Clinical Pharmacology & Therapeutics*. 2004; 75: 163-171.

Kennedy MJ, Abel-Rahman SM, Simon SD, Leeder JS. Comparison of various urine collection intervals for caffeine and dextromethorphan phenotyping in children. *Journal of Clinical Pharmacology*. 2004; 44: 708-714.

Kennedy MJ, Jackson MA, Myers AL, Williams KM, Kearns GL. Sub-optimal antimicrobial exposure as a potential cause of treatment failure following single-dose amoxicillin prophylaxis in a child. *Clinical Pediatrics*. 2004; 43: 773-776.

Kennedy MJ, Abdel-Rahman SM, Kearns GL, Jungbluth GL. Evaluating pharmacodynamic surrogates in response to the treatment of skin and skin structure infections in children. *Paediatric and Perinatal Pharmacology*. 2004; 6: 32-37.

Lee WE, Lugo RA, Rusho WJ, MacKay M. Stability of extemporaneously prepared lorazepam suspension at two temperatures. *J Pediatr Pharmacol Ther* 2004; 9:254-258.
trainee

Neville K, Blaney S, Bernstein M, **Thompson P**, Adams D, Aleksic A, Berg S. Pharmacokinetics of O-6-benzylguanine (O-6BG) in pediatric patients with central nervous systems tumors: a Pediatric Oncology Group Study. *Clinical Cancer Research*. Aug 2004; 10(15): 5072-5075.

Neville K, Thompson P, Parise RA, Aleksic A, Egorin M, Balis F, McGuffey L, McCully C, Berg S, Blaney S. Plasma and CSF pharmacokinetics of imatinib after intravenous and oral administration in nonhuman primates. *Clinical Cancer Research*. 2004; 10(7): 2525-2529.

Prescilla RP, Frattarelli DA, Haritos D, Aranda JV, Edwards DJ. Pharmacokinetics of Rofecoxib in Children With Sickel Cell Hemoglobinopathy. *Journal of Pediatric Hematology and Oncology*. October 2004; 26(10): 661-664. **PPRU Protocol # 10300.**

Rakhmanina N, van den Anker JN, Soldin S. Safety and pharmacokinetics of antiretroviral therapy during pregnancy. *Ther Drug Monitor* 2004; 26(2):110-5.

Silber TJ, **Robb AS**, Orrell-Valente JK, Ellis N, Valadez-Meltzer A, Dadson MJ. Nocturnal nasogastric refeeding for hospitalized adolescent boys with anorexia nervosa. *J Dev Behav Pediatr*. 2004 Dec; 25(6):415-8.

Thompson PA, Berg SL, Aleksic A, Kerr JZ, McGuffey L, Dauser R, Nuchtern JG, Hausheer F, Blaney SM. Plasma and cerebrospinal fluid pharmacokinetic study of BNP 1350 in nonhuman primates. *Cancer Chemotherapy and Pharmacology*. 2004; 53: 527-532.

Tutag Lehr V, Cepeda E, **Frattarelli DAC**, Thomas R, Whitty JE, Aranda JV. Lidocaine 4% cream (L.M.X.4) for anesthesia during newborn circumcision. *Obstetrics & Gynecology*. 2004; 103(4): S37. **PPRU Protocol # 10522.**

Vyhldal CA, Rogan PK, Leeder JS. Development and refinement of pregnane X receptor (PXR) DNA binding site model using information theory: insights into PXR-mediated gene regulation. *J Biol Chem*. 2004; 279: 46779-46786.

Wagner KD, **Robb AS**, Findling RL, Jin J, Gutierrez MM, Heydorn WE. A randomized, placebo-controlled trial of citalopram for the treatment of major depression in children and adolescents. *Am J Psychiatry*. 2004 Jun; 161(6):1079-83.

Zuppa AF, Adamson PC, Barrett JS. Letter to the Editor, Pediatric drug labeling: improving the safety and efficacy of pediatric therapies, *J Pediatr. Pharmacol Ther* 9(1): 70-71, 2004.

2005

Bhathena A, Gaedigk R, Abdel-Rahman SM. Characterization of the ALP1 gene locus of *Trichophyton tonsurans*. *Mycopathologia*. 2005; 160: 265-272.

Blake MJ, Castro L, Leeder JS, Kearns GL. Ontogeny of drug metabolizing enzymes in the neonate. *Semin Fetal Neonatal Med*. 2005; 10: 123-138.

Carlsson KC, Hoem NO, **Glauser TA**, Vinks AA. Development of a population

pharmacokinetic model for carbamazepine based on sparse therapeutic monitoring data from pediatric patients with epilepsy. *Clinical Therapeutics*. 2005; 27(5): 618-626.

Finkel, JC, Johnson, YJ, Quezado, ZMN. The Use of Dexmedetomidine to Facilitate Acute Discontinuation of Opioids after Cardiac Transplantation in Children. *Critical Care Med*. 2005; 33:2110-2.

Finkel, J. Finley, A. Greco, C. Weisman, S. Zeltzer, L. Transdermal Fentanyl in the Management of Children with Chronic Severe Pain: Results from an International Study. *Cancer*. 2005; 104:2847-57.

Frattarelli DA, Ergun H, Lulic-Botica M, Aranda JV. Vancomycin elimination in human infants with intrauterine growth retardation. *Pediatric Infectious Disease Journal*. Nov 2005; 24(11): 979-83

Gaedigk A, **Bhathena A,** Ndjountche L, Pearce RE, Abdel-Rahman SM, **Alander SW,** Bradford LD, Rogan PK, Leeder JS. Identification and characterization of novel sequence variations in the cytochrome P4502D6 (CYP2D6) gene in African Americans. *Pharmacogenomics J*. 2005; 5: 173-182.

Horton TM, Blaney SM, Langevin AM, Kuhn J, Kamen B, Berg SL, Bernstein M, Weitman S. Phase I trial and pharmacokinetic study of raltitrexed in children with recurrent or refractory leukemia: a Pediatric Oncology Group study. *Clinical Cancer Research*. 2005; 11: 1884-1889.

Lee DP, Skolnik JM, Adamson PC. Pediatric phase I trials in oncology: an analysis of study conduct efficiency. *J Clin Oncol*. 2005; 23(33):8431-41.

Leeder JS, Gaedigk R, Marcucci KA, Gaedigk A, **Vyhlidal CA,** Schindel BP, Pearce RE. Variability of CYP3A7 expression in human fetal liver. *J Pharmacol Exp Ther*. 2005; 314: 626-635.

Lowry JA, Vandover JC, Degreiff J, Scalzo AJ. Unusual presentation of iatrogenic phenytoin toxicity in a newborn. *J Med Toxicol*. 2005; Dec: 26-29.

Lugo RA, **Satterfield KL,** Kern SE. The pharmacokinetics of methadone. *J Pain Palliat Care Pharmacother*. 2005; 19:13-24. trainee

Patel P, Best B, Capparelli EV. Pediatric Antiretroviral Pharmacology. *South African Journal of HIV Medicine* 2005; 21:8-14.

Rosner GL, Muller P, Lunagomez S, **Thompson PA.** Pharmacokinetics in clinical oncology: statistical issues. In *Statistical Issues in Clinical Oncology*, 2nd Edition, October 2005, Marcel Dekker, Inc.

Rosser T, **Finkel J,** Vezina G, Majd M. Postural Headache in a Child with Marfan Syndrome: Case Report and Review of the Literature. *J of Child Neurology*. 2005; 20:153-5.

Stein MA, Waldman ID, Sarampote CS, Seymour KE, **Robb AS**, Conlon C, Kim SJ, Cook EH. Dopamine transporter genotype and methylphenidate dose response in children with ADHD. *Neuropsychopharmacology*. 2005 Jul; 30(7):1374-82.

Zuppa AF, Mondick J, Davis LA, Maka D, Tsang B, Narayan M, Nicholson C, Patel D, Collison KR, Adamson PC, Barrett JS. Drug Utilization in the Pediatric Intensive Care Unit: Monitoring Prescribing Trends and Establishing Prioritization of Pharmacotherapeutic Evaluation of Critically-ill Children. *J. Clin. Pharmacol.* 45: 1305-1312, 2005.

2006

Blake MJ, Abdel-Rahman SM, Jacobs RF, Lowery NK, Sterling TR, Kearns GL. Pharmacokinetics of rifapentine in children. *Pediatric Infectious Disease Journal*. 2006; 25: 405-409.

Blake MJ, Abdel-Rahman SM, Pearce RE, Leeder JS, Kearns GL. Effect of diet on the development of drug metabolism by cytochrome P-450 enzymes in healthy infants. *Pediatric Research*, 2006; 60: 717-23.

Bomgaars L, Berg S, Kerr J, Klenke R, Kline N, Blaney S. Phase 1 clinical and pharmacokinetic trial of irinotecan administered weekly x 4, every 6 weeks in children with refractory cancer. *Pediatric Blood and Cancer*. 2006; 46(1): 50-55.

Du W, **Warrier I**, Tutag Lehr V, Salari V, Ostrea E, Aranda JV. Changing patterns of drug utilization in a neonatal intensive care population *Am J Perinatol*. 2006 Jul; 23(5):279-85. Epub 2006 Jun 23

Finkel JC, Besch VG, Hergen A, Kakareka J, Pohida T, Melzer JM, Koziol D, Wesley R, Quezado ZMN. Effects of Aging on Current Vocalization Threshold in Mice Measured by a Novel Nociception Assay. *Anesthesiology*. 2006 Aug; 105:360-9.

Gaedigk A, Baker DW, Totah RA, Gaedigk R, Pearce RE, **Vyhlidal CA**, Zeldin DC, Leeder JS. Variability of CYP2J2 expression in human fetal tissues. *J Pharmacol Exp Ther*. 2006; 319: 523-532.

Gaedigk A, Bradford LD, **Alander SW**, Leeder JS. CYP2D6*36 gene arrangements within the cyp2d6 locus: association of CYP2D6*36 with poor metabolizer status. *Drug Metab Dispos*. 2006; 34: 563-569.

Glauser TA, Ayala R, Elterman RD, Mitchell WG, Van Orman CB, Gauer LJ, et al. Double-blind placebo-controlled trial of adjunctive levetiracetam in pediatric partial seizures. *Neurology* 2006; 66(11):1654-60.

Gore TM, Garg U, Kearns GL. Haloperidol decanoate overdose in an adolescent. *Paediatr Perinatal Drug Ther*. 2006; 7: 19-22.

Horton TM, Gannavarapu A, Blaney SM, D'Argenio DZ, Plon SE, Berg SL. Bortezomib interactions with chemotherapy agents in acute leukemia in vitro. *Cancer Chemotherapy and Pharmacology*. July 2006; 58(1): 13-23.

Horton TM, Thompson PA, Bomgaars LR, Krialo M, Adamson PC, Blaney SM. A phase I study of borteomib (PS-3411, Velcade) in pediatric patients with relapsed or refractory leukemia: a Children's Oncology Group Study. *Proc. Am. Soc. Clin. Oncol.* 2006. 24:9021.

Horton TM, Plon SE, Gannavarapu A, Blaney SM, D'Argenio D, Berg SL. Bortezomib potentiation of chemotherapy agents in acute leukemia in vitro. *Cancer Chemotherapy and Pharmacology*. 2006; 58: 13-23.

Johnson YJ, Finkel JC. Sedation for procedures and mechanical ventilation in children with critical illness. In: Slonim A, Pollack M, eds. *Pediatric Critical Care Medicine*. Philadelphia: Lippincott Williams & Wilkins 2006.

Mehta P, Vinks A, Filipovich A, Vaughn G, Fearing D, Sper C, et al. High-dose weekly AmBisome antifungal prophylaxis in pediatric patients undergoing hematopoietic stem cell transplantation: a pharmacokinetic study. *Biol Blood Marrow Transplant* 2006; 12(2):235-40.

Myers AB, Sullivan JE, Koller DM, Godambe SA, Kennedy MJ. Correlation of CYP2D6 genotype with response to oxycodone in orthopedic injury related pain. *Clinical Pharmacology & Therapeutics*. 2006; 79(2): P18.

Rakhmanina NY, van den Anker JN. Pharmacological research in pediatrics: from neonates in adolescents. *Adv Drug Deliv Res* 2006; 58(1):4-14.

Riviello JJ Jr, Ashwal S, Hirtz D, **Glauser T**, Ballaban-Gil K, Kelley K, Morton LD, Phillips S, Sloan E, Shinnar S; American Academy of Neurology Subcommittee; Practice Committee of the Child Neurology Society. Practice parameter: diagnostic assessment of the child with status epilepticus (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology and the Practice Committee of the Child Neurology Society. *Neurology*. 2006 Nov 14; 67(9):1542-50.

Sharp FR, Xu H, Lit L, Walker W, Apperson M, Gilbert DL, Glauser TA, Wong B, Hershey A, Liu DZ, Pinter J, Zhan X, Liu X, Ran R. The future of genomic profiling of neurological diseases using blood. *Arch Neurol*. 2006 Nov; 63(11):1529-36.

Skolnik J, Barrett JS, Shi H, Adamson PC. A liquid chromatography-tandem mass spectrometry method for the simultaneous quantification of actinomycin-D and vincristine in children with cancer. *Cancer Chemother Pharmacol*. 57(4):458-64, 2006.

Vyhlidal CA, Gaedigk R, Leeder JS. Nuclear receptor expression in fetal and pediatric liver: correlation with CYP3A expression. *Drug Metab Dispos*. 2006; 34: 131-137.

Zuppa AF, Nicolson SC, Adamson PC, Wernovsky G, **Mondick JT**, Burnham N, Hoffman TM, Gaynor WJ, Davis LA, Greeley WJ, Spray TL, Barrett JS. Population Pharmacokinetics of Milrinone in Neonates with Hypoplastic Left Heart Syndrome Undergoing Stage 1 Reconstruction, *Anesthesia & Analgesia* 102(4):1062-9, 2006.

2007

Barrett JS, **Gupta M**, **Mondick JT**. Model-based Drug Development for Oncology Agents. *Expert Opinion on Drug Discovery* 2(2): 185-209, 2007.

Blake MJ, Gaedigk A, Pearce RE, Bomgaars LR, Christensen ML, Stowe C, James LP, Wilson JT, Kearns GL, Leeder JS. Ontogeny of dextromethorphan O- and N-demethylation in the first year of life. *Clinical Pharmacology and Therapeutics*, 2007; 81: 510-516.

Burger DM, Verweel G, **Rakhmanina N**, et al. Age-dependent pharmacokinetics of lamivudine in HIV-infected children. *Clin Pharmacol Ther* 2007; 81(4):517-20.

Bernardi RJ, Lowery AR, **Thompson PA**, Blaney SM, West JL. Immunonanoshells for targeted photothermal ablation in medulloblastoma and glioma: An in vitro evaluation using human cell lines. *J Neurooncol*. September 2007;

Best BM, Goicoechea M, Witt MD, Miller L, Daar ES, Diamond C, Tilles JG, Kemper CA, Larsen R, Holland DT, Sun S, Jain S, Wagner G, Capparelli EV, McCutchan JA, Haubrich RH; California Collaborative Treatment Group 578 Study Team. A randomized controlled trial of therapeutic drug monitoring in treatment-naïve and -experienced HIV-1-infected patients. *J Acquir Immune Defic Syndr*. 2007; 46(4):433-42.

Cohen-Wolkowicz M, Benjamin DK Jr, Fowler VG Jr, Wade KC, Alexander BD, Worley G, Goldstein RF, Smith PB. Mortality and neurodevelopmental outcome after Staphylococcus aureus bacteremia in infants. *Pediatr Infect Dis J*. 2007; 26:1159-1161

Curry, S, **Finkel, JC**. Use of the Synera Patch for Local Anesthesia before Vascular Access Procedures: A Randomized, Double-Blind, Placebo-Controlled Study. *Pain Medicine* 2007; 8(6):497-502.

Delgado SV, **Saldana SN**, Barzman DH, Coffey B. Response to duloxetine in a depressed, treatment-resistant adolescent female. *J Child Adolesc Psychopharmacol* 2007; 17(6):889-94.

Finkel JC, Quezado ZMN. Hypothermia Induced Bradycardia in a Neonate Receiving Dexmedetomidine. *Journal of Clinical Anesthesia*, 2007 Jun; 19(4):290-2.

Finkel JC, Pestieau S, Quezado ZMN. Ketamine as an Adjuvant for Treatment of Cancer Pain in Children and Adolescents. *The Journal of Pain*, 2007 Jun; 8(6):515-521.

Finkel JC. (Invited Editorial). Use of Nonsteroidal Anti-inflammatory Drugs in Preterm, Term Neonates and Infants: Analgesia by Consensus? *Pediatric Anesthesia* 2007; 17(10):015-7.

Fung EB, Harmatz P, Milet M, Ballas SK, De Castro L, Hagar W, Owen W, Olivieri N, Smith-Whitley K, **Darbari D**, Wang W, Vichinsky E. Morbidity and Mortality in chronically transfused subjects with thalassemia and sickle cell disease: a report from the multi-center study of iron overload. *Am J Hematol* 2007; 82(4):255-65.

Gaedigk A, Eklund JD, Pearce RE, Leeder JS, **Alander SW**, Phillips MS, Bradford LD, **Kennedy MJ**. Identification and characterization of CYP2D6*56B, an allele associated with the poor metabolizer phenotype. *Clin Pharmacol Ther.* 2007; 81: 817-820.

Gaedigk A, Ndjountché L, Divakaran K, Bradford LD, Zineh I, Oberlander TF, Brousseau DC, McCarver DG, Johnson JA, **Alander SW**, Wayne Riggs K, Leeder JS. Cytochrome P4502D6 (CYP2D6) gene locus heterogeneity: characterization of gene duplication events. *Clin Pharmacol Ther.* 2007; 81: 242-251.

Glauser TA. Monitoring gene changes during antiepileptic drug therapy to widen the safety window and reduce pharmacoresistance. *Epilepsia.* 2007; 48 Suppl 1:19-25.

Glauser TA. Designing practical evidence-based treatment plans for children with prolonged seizures and status epilepticus. *J Child Neurol.* 2007 May; 22(5 Suppl):38S-46S.

Glauser TA, Mitchell WG, Weinstock A, Bebin M, Chen D, Coupez R, Stockis A, Lu ZS. Pharmacokinetics of levetiracetam in infants and young children with epilepsy. *Epilepsia.* 2007 Jun; 48(6):1117-22. Epub 2007 Apr 18.

Glauser TA, Dlugos DJ, Dodson WE, Grinspan A, Wang S, Wu SC; EPMN-106/INT-28 Investigators. Topiramate monotherapy in newly diagnosed epilepsy in children and adolescents. *J Child Neurol.* 2007 Jun; 22(6):693-9.

Holland KD, **Glauser TA.** Response to carbamazepine in children with newly diagnosed partial onset epilepsy. *Neurology* 2007; 69(6):596-9.

Horton TM, Thompson PA, Aleksic AA, Berg SL, Adamson PC, Ingle AM, Dolan ME, Delaney SM, Hedgi M, Weiss HL, Wu MF, Plon SE, Blaney SM. A phase 1, pharmacokinetic and pharmacodynamic study of temozolomide in pediatric patients with refractory/recurrent leukemia: A Children's Oncology Group Study. *J. Clinical Oncology*, 2007 25(31):4922-8.

Horton TM, Pati D, Plon SE, **Thompson PA**, Bomgaars LR, Adamson PC, Ingle AM, Wright J, Brockman AH, Paton M, Blaney SM. A phase 1 study of the proteasome inhibitor bortezomib in pediatric patients with refractory leukemia: a Children's Oncology Group study. *Clinical Cancer Research*, 2007 Mar 1; 13(5):1516-22.

Stapleton SL, Reid JM, **Thompson PA**, Ames MM, McGovern RM, McGuffey L, Nuchtern J, Dauser R, Blaney SM. Plasma and cerebrospinal fluid pharmacokinetics of pemetrexed after intravenous administration in non-human primates. *Cancer Chemotherapy and Pharmacology*, 2007 Mar; 59(4):461-6.

Matei KE, **Vyhldal CA**, Le M, Klick D, Hines RN. Regulation of CYP3A4 Expression by PAR Transcription Factors. *FASEB J* 2007; 21: A1183-a.

Potter K, Ashok R, **Sullivan JE**. Argatroban for anticoagulation in pediatric patients with heparin-induced thrombocytopenia requiring extracorporeal life support. *Pediatr Hematol Oncol*, 2007; 29(4):265-268.

Lee JI, **Skolnik JM**, Barrett JS and Adamson PC. A sensitive and specific liquid chromatography-tandem mass spectrometry method for the simultaneous quantification of actinomycin-D and vincristine in children with cancer. *J Mass Spectrom* 42:761-770, 2007.

Lehr VT, Zeskind PS, Ofenstein JP, Cepeda E, **Warrier I**, Aranda JV. Neonatal facial coding system scores and spectral characteristics of infant crying during newborn circumcision. *Clinical Journal of Pain*. June 2007; 23(5): 417-424. PPRU Protocol # 10522.

Leibenluft E, Rich BA, Vinton DT, Nelson EE, Fromm SJ, Berghorst LH, Joshi P, **Robb A**, Schachar RJ, Dickstein DP, McClure EB, Pine DS. Neural circuitry engaged during unsuccessful motor inhibition in pediatric bipolar disorder. *Am J Psychiatry*. 2007 Jan; 164(1):52-60.

Lenfesty RW, **Smith PB**, Moody MA, Clark RH, Cotten CM, Seed PC, and Benjamin DK Jr. Predictive value of cerebrospinal fluid parameters in neonates with intraventricular drainage devices. *J Neurosurg*. 2007; 107(3 Suppl):209-212

Rakhmanina N, Capparelli EV, van den Anker JN, et al. Nevirapine concentration in nonstimulated saliva: an alternative to plasma sampling in children with human immunodeficiency virus infection. *Ther Drug Monitor* 2007; 29(1):110-7.

Saitoh A, **Sarles E**, Capparelli E, Aweeka F, Kovacs A, Burchett SK, Wiznia A, Nachman S, Fenton T, Spector SA. CYP2B6 Genetic Variants are Associated with Nevirapine Pharmacokinetics and Clinical Response in HIV-1 Infected Children. *AIDS* 2007 21:2191-2199.

Santos RP, Awa E, Anbar RD. Inhaled tobramycin solution-associated recurrent eosinophilia and severe persistent bronchospasm in a patient with cystic fibrosis: a case report *BMC Pediatrics* 2007, 7:11 (March 2, 2007) Available at: <http://www.biomedcentral.com/1471-2431/7/11>

Santos RP, Ramilo O, Barton T. Nevirapine-associated DRESS (Drug Rash with Eosinophilia and Systemic Symptoms) syndrome in an adolescent with HIV infection *Pediatr Infect Dis J* 2007;26: 1053–1056

Smith PB, Benjamin DK, Alexander B Jr., Johnson MD, Finkelman MD, Steinbach WA. Quantification of 1, 3-beta-D-glucan levels in children: Preliminary data for diagnostic use of the beta-glucan assay in a pediatric setting. *Clinical and vaccine immunology: CVI*. July 2007; 14(7): 924-925.

Smith PB, Steinbach WJ, Cotton CM, Schell WA, Perfect JR Walsh TJ, **and** Benjamin DK Jr. Caspofungin for the treatment of azole resistant candidemia in a premature infant *J Perinatol*. 2007; 27:127-129

Smith PB, Benjamin DK Jr., Alexander BD, Johnson MD, Finkelman MA, Steinbach WJ 1,3- β -D-Glucan Levels in Pediatric Patients: Preliminary Data for Use of the β -Glucan Diagnostic Assay in Children. *Clin Vaccine Immunol*. 2007; 14: 924-925

Soden S, **Lowry JA**, Garrison C, Wasserman GS, Kearns GL. 24-hour provoked urine excretion test for heavy metals in children with autism and typically developing controls, a pilot study. *Journal of Toxicology – Clinical Toxicology*. 2007: 476-481.

Stapleton SL, **Thompson PA**, Ou CN, Berg SL, McGuffey L, Gibson B, Blaney SM. Plasma and cerebrospinal fluid pharmacokinetics of valproic acid after oral administration in non-human primates. *Cancer Chemotherapy and Pharmacology*, 2007 May 31

Stapleton S, Reid JM, **Thompson PA**, Ames MM, McGovern M, McGuffey L, Nuchtern J, Dauser R, Blaney SM. Plasma and cerebrospinal fluid pharmacokinetics of pemetrexed after intravenous infusion in nonhuman primates. *Cancer Chemotherapy and Pharmacology*. 2007 Mar;59(4):461-6. July 2006; e-pub.

Thompson PA, Murry DJ, Rosner GL, Lunagomez S, Blaney SM, Berg SL, Camitta BM, Dreyer ZE, Bomgaars LR. Methotrexate pharmacokinetics in infants with acute lymphoblastic leukemia. *Cancer Chemotherapy and Pharmacology*, 2007 May; 59(6):847-53.

Thornburg CD, **Smith PB**, Smithwick ML, Cotten CM, and Benjamin DK Jr. Association between thrombosis and bloodstream infection in neonates with peripherally inserted catheters. *Thromb Res*. 2007

Tremoulet AH, Capparelli EV, Patel P, Acosta EP, Luzuriaga K, Bryson Y, Wara D, Zorrilla C, Holland D, Mirochnick M. the Pediatric AIDS Clinical Trials Group. Population Pharmacokinetics of Lamivudine in HIV Exposed and Infected Infants. *Antimicrob Agents Chemother* 2007, 51(12):4297-302

Veal K, **Lowry JA**, Belmont JM. The epidemiology of pediatric environmental exposures. *Pediatr Clin North Am*. Feb; 2007: 15-31.

Zuppa AF, Vijayakumar S, **Mondick JT**, Pavlo P, Jayaraman B, Patel D, Narayan M, Boneva T, Vijayakumar K, Adamson PC, Barrett JS. Design and implementation of a web-based hospital drug utilization system. *J Clin Pharmacol*: 47(9): 1172-1180, 2007.

2008

Barrett JS, Jayaraman B, Patel D, **Skolnik JM**. A SAS-based solution to evaluate study design efficiency of phase I pediatric oncology trials via discrete event simulation. *Computer Methods and Programs in Biomedicine* (*accepted, in press*)

Barrett JS, **Mondick JT**, Narayan M, Vijayakumar K, Vijayakumar S. Integration of Modeling and Simulation into Hospital-based Decision Support Systems Guiding Pediatric Pharmacotherapy. *BMC Medical Informatics and Decision Making* 8:6, 2008.

Benjamin DK Jr., **Smith PB**, Jadhav P, Gobburu JV, Dianne Murphy MD, Hasselblad V, Baker-Smith C, Califf RM, and Li JS Pediatric Antihypertensive Trial Failures: Analysis of Endpoints and Dose Range *Hypertension* (2008; 51 in press)

Bernardi RJ, Lowery AR, **Thompson PA**, Blaney SM, West JL. Immunonanoshells for targeted photothermal ablation in medulloblastoma and glioma. *J. Neurooncology* 2008 86(2) 165-172.

Bi C, Leeder JS, **Vyhldal CA**. A comparative study on computational two-block motif detection: algorithms and applications. *Mol Pharm.* 2008; 5: 3-16.

Cohen-Wolkowicz M, Smith PB, Benjamin DK Jr, Fowler VG Jr, Wade KC. Daptomycin use in infants: report of two cases with peak and trough drug concentrations. *J Perinatol.* 2008; 28: 233-234.

Darbari DS, van Schaik RH, Capparelli EV, Rana S, McCarter R, van den Anker J. UGT promoter variant -840G>A contributes to the variability in hepatic clearance of morphine in patients with sickle cell disease. *Am J Hematol* 2008; 83(3):200-2.

Darbari DS, Minniti CP, Rana S, van den Anker J. Pharmacogenetics of morphine: potential implications in sickle cell disease. *Am J Hematol* 2008; 83(3):233-6.

Davis WB, Patel NC, **Robb AS**, McDermott MP, Bukstein OG, Pelham WE Jr, Palumbo D, Harris P, Sallee FR. Clonidine for attention-deficit/hyperactivity disorder: II. ECG changes and adverse events analysis. *J Am Acad Child Adolesc Psychiatry.* 2008 Feb; 47(2):189-98.

Gaedigk A, Simon SD, Pearce RE, Bradford LD, **Kennedy MJ**, Leeder JS. The CYP2D6 activity score: Translating genotype information into a qualitative measure of phenotype. *Clin Pharmacol Ther.* 2008; 83: 234-242.

Gaedigk A, Simon SD, Pearce RE, Bradford LD, **Kennedy MJ**, Leeder JS. The CYP2D6 activity score: translating genotype information into a qualitative measure of phenotype. *Clin Pharmacol Ther.* 2008; 83: 234-242.

Hershey AD, Burdine D, Liu C, Nick TG, Gilbert DL, **Glauser TA**. Assessing quality and normalization of microarrays: case studies using neurological genomic data. *Acta Neurol Scand* 2008.

Holland KD, Kearney JA, **Glauser TA**, Buck G, Keddache M, Blankston JR, et al. Mutation of sodium channel SCN3A in a patient with cryptogenic pediatric partial epilepsy. *Neurosci Lett* 2008; 433(1):65-70.

Menon D, Mondick JT, Jayaraman B, Thompson PA, Blaney SM, Adamson PC, Barrett JS. Population Pharmacokinetics of Imatinib Mesylate and its Metabolite in Children and Young Adults. (*accepted, Cancer Chemother and Pharmacol*)

Modi AC, **Morita DA, Glauser TA**. One-Month Adherence in Children With New-Onset Epilepsy: White-Coat Compliance Does Not Occur. *Pediatrics* 2008.

Mondick JT, Oo C, Patel D, Fujitani T, Shimizu K, Zimmerman T, Barrett JS. Population Pharmacokinetics of the Selective Serotonin Receptor Partial Agonist Piclozotan in Healthy Subjects and Stroke Patients. (*accepted, Am J Therapeutics*)

Mondick JT, Gibiansky L, Gastonguay MR, Skolnik J, Veal GJ, Boddy A, Adamson PC, Barrett JS. Population Pharmacokinetics of Actinomycin-D in Children and Young Adults. *J Clin Pharmacol*: 48: 35-42, 2008

O'Brien CE, Harik N, James L, Seib P, Stowe CD. Cesium chloride induced QT prolongation in an adolescent. Submitted to *Pharmacotherapy In press*.

Robinson BW, Behling KC, **Gupta M**, Zhang AY, Moore JS, Bantly AD, Willman CL, Carroll AJ, Adamson PC, Barrett JS, Felix CA: Abundant anti-apoptotic BCL-2 is a molecular target in leukemias with t(4;11) translocation (*accepted, British J. Haematology*)

Santos RP, Mayo TW, Siegel JD Active Surveillance Cultures and Contact Precautions for Control of Multidrug-Resistant Organisms: Ethical Considerations *Clinical Infectious Diseases* Accepted for publication (3-19-08)

Skolnik JM and Barrett JS. Refining the Phase 1 Pediatric Trial. (*accepted, Pediatric Health*)

Skolnik JT, Barrett JS, Jayaraman B, Patel D, Adamson PC. Shortening the Timeline of Pediatric Phase 1 Trials: The Rolling Six Design. *J. Clin Oncol* 26(2): 190-5, 2008

Smith PB, Li JS, Murphy DM, Califf RM, and Benjamin DK Jr. Adverse Events in Placebo-controlled Pediatric Hypertension *Hypertension* (2008; 51 in press; [Epub ahead of print])

Thompson PA, Gupta M, Rosner GL, Barrett JS, Bernstein ML, Bomgaars LR, Blaney SM, Mondick J. A non-linear mixed effects population pharmacokinetic model of irinotecan and its metabolites in pediatric cancer patients. *Cancer Chemotherapy and Pharmacology*, Feb 16, 2008 (Epub ahead of print).

Thompson PA, Gupta M, Rosner GL, Yu A, Barrett JS, Bomgaars LM, Bernstein ML, Blaney SM, **Mondick JT**. Pharmacokinetics of Irinotecan and its Metabolites in Pediatric Cancer Patients: A report from the Children's Oncology Group. *Cancer Chemotherapy and Pharmacology* (*accepted, Cancer Chemother and Pharmacol*)

Robb AS, Lee RH, Cooper EB, Siedel JV, Nusrat N. Glycopyrrolate for treatment of clozapine-induced sialorrhea in three adolescents. *J Child Adolesc Psychopharmacol*. 2008 Feb; 18(1):99-107.

Pediatric Clinical Pharmacology Trainees at PPRU sites since 1994

Site	Name	Dates of training	Description of Training	Title or Position / Institution	Special honors/ recognition	Current Professional Leadership Roles in Clinical Pharmacology
Arkansas	Laura James, MD	1994-1996	Pediatric Clinical Pharmacology Fellow; Associate Clinical Pharmacologist	PI for the Arkansas PPRU.	R03, R01, STTR grant recipient, Diplomat ABCP	Associate Editor, Clinical Pharmacology and Therapeutics
Arkansas	Jim Marshall, MD	1994-1996	Pediatric Clinical Pharmacology Fellow; Associate Clinical Pharm	Cook Children's Hosp. TX	Diplomat ABCP	
Arkansas	Cindy Stowe, PharmD	1996-1998	Associate Clinical Pharmacologist	Associate Dean, UAMS School of Pharmacy		
Arkansas	Holly Maples, PharmD	2001-2003	Pediatric Clinical Pharmacology Fellow; Associate Clinical Pharm	UAMS School of Pharmacy; Arkansas Children's Hospital		
Arkansas	Brian Donahower	2004-2007	Pharmacology graduate student	Research associate, UAMS Cancer Institute		
Arkansas	Catherine O'Brian, PharmD	2008-Current	Associate Clinical Pharmacologist	Associate Clinical Pharmacologist		
Baylor	Lisa Bomgaars, MD	1999-2000	PPRU Associate Clinical Pharmacologist	Associate PI for Baylor; PPRU Assistant Professor of Pediatrics,	Diplomate, American Board of Clinical Pharmacology	Chair, ASCPT Education Committee
Baylor	Kathleen Neville, MD	2001-2002	MSCIDA fellow	Assistant Professor of Pediatrics Divisions of Hematology/Oncology and Clinical Pharmacology and Medical Toxicology Children's Mercy Hospitals and Clinics Kansas City	K23 grant recipient (NHLBI); Diplomat of ABCP	Vice Chairman, ASCPT Education Committee
Baylor	Terza Horton, MD	2002-2004	Pharmacology postdoc	Assistant Professor Pediatrics BCM	K12 and K23 grant recipient (NCI)	COG, Young Investigator Committee
Baylor	Patrick Thompson, MD	2005-Current	MSCIDA fellow	Assistant Professor Pediatrics BCM	Diplomate, American Board of Clinical Pharmacology	
Baylor	Lindsay Kilburn, MD	2005-Current	T32 - BCM Training Research Program for Pediatrics; K12 Faculty Fellowship in Hematology-Oncology Clinical Pharmacology Research Track	Clinical Instructor Pediatrics BCM	Clinical Scholar Award; Diplomat American Board of Clinical Pharmacology	
Baylor	Emma Jones, M.D.	2007-Current	Clinical Pharmacology Fellow; T32- BCM Training Research Program for Pediatrics	Fellow Department of Pediatrics BCM	T32 Research Training Grant recipient	
Baylor	Patricia Baxter, M.D.	2007-Current	Clinical Pharmacology Fellow; T32 - BCM Training Research Program for Pediatrics	Fellow Department of Pediatrics BCM	T32 Research Training Grant recipient	
CHOP	Manish Gupta, PhD	2005-2007	Pharmacometrics Fellow - Pfizer Postdoc			Principal Scientist, Modeling & Simulation, Genentech Pharmaceuticals
CHOP	Divya Menon, PhD	2006-2008	Pharmacometrics Fellow - GSK Postdoc	CHOP Postdoc	ACCP New member award (2006); ACCP Postdoc award (2007)	Clinical Pharmacology Reviewer; US FDA
CHOP	John Mondick, PhD	2007- Current	Adjunct Clinical Pharmacologist	Assistant Professor, Pediatrics, U. Penn School of Medicine		
CHOP	Olivera Marsenic, MD	2007- Current	Clinical Pharmacology Fellow	Fellow, Nephrology		
CHOP	Robin Norris, MD	2007- Current	Clinical Pharmacology Fellow	Fellow, Department of Hematology/Oncology		
CHOP	Doug Marsteller, PhD	2008-Current	Pharmacometrics Fellow - Genentech Postdoc	CHOP Postdoc		
CHOP	Craig Comisar, PhD	2008-Current	Pharmacometrics Fellow - Pfizer Postdoc	CHOP Postdoc		
CHOP	Jeffrey Galinkin, MD	2001-2002	PPRU Associate Clinical Pharmacologist	Denver Children's		
CHOP	Amelia Walls, PhD	2003-2004	PPRU Associate Clinical Pharmacologist			
CHOP	Athena Zuppa, MD	2003-2004 2005-2006	MSCIDA fellow PPRU Associate Clinical Pharmacologist	CHOP PPRU	K 23 award recipient; Board Certified ABCP; ACCP Fellow	
CHOP	Jeff Skolnik, MD	2005-2006	Clinical Pharmacology Fellow	CHOP PPRU		Astra Zeneca Pharmaceuticals, Oncology
CHOP	Kelly Wade, MD, PhD	2006- Current	Adjunct Clinical Pharmacologist MSCIDA Fellow	CHOP PPRU	K 23 award recipient	
CHOP	Manish Gupta, PhD	2005-2007	Pharmacometrics Fellow - Pfizer Postdoc			Principal Scientist, Modeling & Simulation, Genentech Pharmaceuticals
CHOP	Divya Menon, PhD	2006-2008	Pharmacometrics Fellow - GSK Postdoc	CHOP Postdoc	ACCP New member award (2006); ACCP Postdoc award (2007)	Clinical Pharmacology Reviewer; US FDA
CHOP	John Mondick, PhD	2007- Current	Adjunct Clinical Pharmacologist	Assistant Professor, Pediatrics, U. Penn School of Medicine		
CHOP	Olivera Marsenic, MD	2007- Current	Clinical Pharmacology Fellow	Fellow, Nephrology		
CHOP	Robin Norris, MD	2007- Current	Clinical Pharmacology Fellow	Fellow, Department of Hematology/Oncology		
CHOP	Doug Marsteller, PhD	2008-Current	Pharmacometrics Fellow - Genentech Postdoc	CHOP Postdoc		
CHOP	Craig Comisar, PhD	2008-Current	Pharmacometrics Fellow - Pfizer Postdoc	CHOP Postdoc		
Cincinnati	Mark Solomon, MD	2000-2003	Clinical Pharmacology and Pediatric Clinical Trials; Supervised collaborative clinical trials initiated through the PPRU.	Private Practice, Pulmonary Medicine, Galveston, Texas		
Cincinnati	Tracy Glauser, MD	2000-2003	Clinical Pharmacology and Pharmacogenetics as part of K08 training.	Professor, Division of Neurology, Cincinnati Children's Hospital Medical Center		
Cincinnati	Diego Morita, MD	2002-present	Clinical Pharmacology and Pharmacogenetics and pharmacokinetic/pharmacodynamic modeling approaches to individualized therapy	Assistant Professor, Division of Neurology, Cincinnati Children's Hospital Medical Center		
Cincinnati	Ivana Kacirova, MD	2003-2004	Pediatric Clinical Trials and Therapeutic Drug Management	Assistant Professor, Ostrava University, Czech Republic		
Cincinnati	Parinda Mehta, MD	2004-2005	Ped Clin Pharmacology Fellow	Assistant Professor, Division of Hematology/Oncology; Cincinnati Children's Hospital Medical Center		
Cincinnati	Ahbi Shinde, MD	2004-2005	Clinical Pharmacology and Peds Clinical Trials	Fellow, Clinical Pharmacology University of Chicago		
Cincinnati	Reuven Schore, MD	2005-2006	Ped Clin Pharmacology Fellow; MSCIDA candidate	Fellow, Division of Hematology/Oncology; Cincinnati Children's Hospital Medical Center		

Site	Name	Dates of training	Description of Training	Title or Position / Institution	Special honors/ recognition	Current Professional Leadership Roles in Clinical Pharmacology
Cincinnati	Shannon Saldana, MD	2006-present	PPRU Associate Clinical Pharmacologist	Instructor of Pediatrics		
Cincinnati	Kristina Wiers, MD	2007-present	Population PK/PD modeling and simulation	Fellow, Rheumatology/PPRU		
Cincinnati	Stephanie Merhar, MD	2007-present	Phase I study design in neonates; Population PK/PD modeling and simulation	Fellow, Neonatology/PPRU		
Cleveland	Janice Sullivan, MD	1991 - 1995	Dual Peds Crit Care and Clin Pharm Fellowship	Professor, Pediatrics and Pharmacology/Toxicology, Univ Louisville; Kosair Children's Hospital PPRU PI		Vice Chair, Pediatric and Maternal Pharmacology Section, American Society for Clinical Pharmacology and Therapeutics; Executive Committee, Section on Clinical Pharmacology and Therapeutics, American Academy of Pediatrics
Cleveland	Mark Glover, PharmD	1994-1996	Peds Clin Pharmacology Fellow	Assoc Prof Nova SE Univ College of Pharmacy Ft Lauderdale FL		
Cleveland	Hidefumi Nakamura, MD	1996-1999	Ped Clin Pharmacology Fellow	Director Clin Research, Natl Ctr for Child Health and Development, Tokyo Japan		
Cleveland	Andrew TenEick, PharmD	1998 - 2000	Ped Clin Pharmacology Fellow	PICU Pharmacy Mgr, Children's Med Ctr of Dallas		
Cleveland	Michael Neely, MD	1999 - 2002	MSCIDA fellow and dual fellow in Peds ID	Asst Prof of Pediatrics, Keck School of Med, Univ S California		
Cleveland	Allison Chung, PharmD	2000 - 2002	Ped Clin Pharmacology Fellow	Asst Prof Pharmacy Practice, Auburn Univ, Harrison School of Pharmacy, Mobile AL		
Cleveland	Todd Kociancic, PharmD	2001 - 2003	Ped Clin Pharmacology Fellow	BCPS Clin Specialist, Crit Care Med, Rose Dominican Hospitals, Nevada		
Cleveland	Michelle Bestic, PharmD	2004 - 2006	Ped Clin Pharmacology Fellow	Instructor in Pediatrics, Case Western Res Univ, Cleve OH; Staff, Rainbow Babies & Children's Hospital, Cleve OH		
Cleveland	Martha Blackford, PharmD	2006-2007	Ped Clin Pharmacology Fellow	Left Rainbow Babies and Children's Hospital on 06/30/07 to complete fellowship at Akron Children's Hospital		
CNMC	Julia Finkel, MD	2004-2006	PPRU Adjunct Clinical Pharmacologist	Assoc PI CNMC PPRU; Assoc Professor Peds and Anesth	Vice Chair of Anesthesia and Pain Medicine at CNMC	
CNMC	Darbari, MD	2005-2007	Ped Clin Pharmacology Fellow	Ass Prof Peds George Washington Univ	Will start fellowship Pediatric Hematology/Oncology at Hopkins July 2008	
CNMC	Rakhmanina, MD	2008-now	PPRU Adjunct Clinical Pharmacologist	Ass Prof Peds George Washington Univ	Program Director HIV/AIDS at CNMC and currently funded through K-12 award	
CNMC	Best, MD	2005-2007	Ped Clin Pharmacology Fellow	Ass Prof Peds George Washington Univ	Has received several grants for her studies in passive smoking in African American children	
CNMC	Robb, MD	2006-2008	PPRU Adjunct Clinical Pharmacologist	Assoc Prof Peds George Washington Univ	Member AAP Committee on Drugs	
CNMC	Yewande Johnson, MD	2006-now	MSCIDA fellow	Ass Prof Peds George Washington Univ		
North Carolina	Brad Harris, MD	7/1/04 - 6/30/06	Clinical trials; K30 program Assistant Professor, UNC Department of Pediatrics	Assistant Professor of Pediatrics University of North Carolina		
North Carolina	Cassandra Moran, MD	7/1/04 - 6/30/06	Pharmacology postdoc	Instructor, Duke University		
North Carolina	Brian Smith MD	2006-2008	MPH Biostatistics with concentration in PK-PD	Assistant Professor Neonatology Duke University		
North Carolina	Micky Cohen-Wolkowicz, MD	2006-2009	PhD School of Pharmacy UNC	Fellow, Pediatric Infectious Disease Duke University		
North Carolina	Souzan Yanni	2006-2010	PhD School of Pharmacy UNC	Doctoral Student University of North Carolina		
Kansas City	Jennifer A. Lowry, M.D.	1999-2002	MSCIDA fellow, joint fellowship in Pediatric Clinical Pharmacology and Medical Toxicology	Assistant Professor of Pediatrics and Director, Regional Poison Control Ctr. University of Kansas School of Medicine, Kansas City, KS		
Kansas City	Mary Jayne Kennedy, Pharm.D.	2000-2002	Pediatric Clinical Pharmacology Fellow	Assistant Professor of Pediatrics and Pharmacology; Associate Director, Kosair Charities Pediatric Clinical Research Unit, University of Louisville and Kosair Children's Hospital, Louisville, KY	ASCPT President's Award	Invited Member, NHLBI Early Pseudomonas Infection Control (EPIC) Trial DSMB; Editorial Board: Journal of Pediatric Pharmacology and Therapeutics
Kansas City	Martin O. Behm, M.D.	2001-2004	Pediatric Clinical Pharmacology Fellow	Medical Director, Drug Safety McNeil Consumer Products Division, Johnson & Johnson Co., Inc.	ASCPT President's Award	
Kansas City	Kathy Williams, M.D.	2001-2003	Combined Infectious Disease and Clinical Pharmacology Fellowship	Private practice of Pediatrics London, England		
Kansas City	Sarah W. Alander, M.D.	2001-2003	Pediatric Clinical Pharmacology Fellowship	Dept. of Emergency Medicine St. John's Hospital, St. Louis, MO		
Kansas City	Michael J. Blake, M.D., Ph.D.	2002-2004	Pediatric Clinical Pharmacology Fellow	Private Pediatric Practice, Ottumwa, Iowa		ASCPT President's Award; Midwest SSPR Young Investigator's Award
Kansas City	Lisa M. Castro, M.D.	2004 - 2005	Pediatric Clinical Pharmacology Fellowship	Assistant Professor of Pediatrics and member, Divisions of Neonatology and Pediatric Pharmacology & Medical Toxicology University of Missouri-Kansas City School of Medicine and Children's Mercy Hospitals and Clinics, Kansas City, MO		

Site	Name	Dates of training	Description of Training	Title or Position / Institution	Special honors/ recognition	Current Professional Leadership Roles in Clinical Pharmacology
Kansas City	Bridgette A. Jones, M.D.	August 2007 - present	Pediatric Clinical Pharmacology Fellowship	Asst. Clinical Professor in Pediatrics, Member, Division of Allergy/Asthma/Clinical Immunology, Children's Mercy Hospitals and Clinics and UMKC School of Medicine, Kansas City, MO	ASCPT President's Award	
Louisville	Amanda Myers, MD, MSPH	2004 - 2006	PPRU Adjunct Clinical Pharmacologist	Assistant Professor of Pediatrics, Division of Emergency Medicine; Medical staff of the Kosair Charities Pediatric Clinical Research Unit and Louisville PPRU. Louisville, KY		
Louisville	Carmen T. Condurache, M.D.	2007 -	PPRU Adjunct Clinical Pharmacologist	Instructor in Pediatrics, Division of Hospitalists and Kosair Charities Pediatric Clinical Research Unit and Louisville PPRU. Louisville, KY		
Louisville	Katherine Potter, M.D.	2004 - 2007	Fellow	Assistant Professor, Division of Pediatric Critical Care, Department of Pediatrics, University of Louisville, Louisville, KY		
LSU	Kim Adcock, MD	1998-2000	Fellow	Assistant Professor Pediatrics/University of Mississippi Medical Center		
LSU	Roy Parish, PharmD	1995-1996	Fellow	British Health Service		
LSU	Margaret Ann Springer, MD	2001-2003	Faculty trainee	Assistant Professor Pediatrics/LSUHSC-Shreveport		
LSU	Renee Simar, PhD	1995	Staff trainee	Industry		
LSU	James Hinson, MD	1996	Graduate student	Industry		
LSU	Tonya Slusher, MD	1999-2000	Fellow	Private Practice/Green Clinic Ruston, LA		
Tennessee	Shannan Eades, Pharm.D.	7/1/96 - 6/30/98	Pediatric Clinical Pharmacology	Director Clinical Pharmacy Services, National Children's Hospital, Washington, DC		
Tennessee	Robin Mottern, Pharm.D.	7/1/99-6/30/00	Pediatric Clinical Pharmacology	Pediatric Clinical Pharmacist, Denver Children's Hospital		
Tennessee	Majed Al-Jeraisy, Pharm.D.	7/1/00-6/30/01	Pediatric Clinical Pharmacology	Director Pediatric Clinical Pharmacy Services, King Faisal Hospital, Riyadh, Saudi Arabia		
Tennessee	John Whitworth, M.D.	7/1/06-6/30/03	Pediatric Clinical Trials	Fellow, Pediatric Gastroenterology, University of Colorado College of Medicine, Denver Children's Hospital		
UCSD	Linda Wu, Pharm.D.	7/1994-6/1995	Fellowship	Clinical Faculty Appointment with Univeristy of Toledo School of Pharmacy		
UCSD	Mark Mirochnick, MD	9/1997-3/1998	Mini-sabatical	Professor & Chief Neonatology, Boston University Medical Center		
UCSD	Brookie Best, Pharm.D.	7/2000-6/2004	Fellowship / NRSA	UCSD PPRU-Associate Pharmacologist; Faculty UCSD School of Pharmacy and Pediatrics		
UCSD	Suzette Blanchard, Ph.D.	5/2002-4/2005	K25 (EC mentor)	Faculty at City of Hope Hospital		
UCSD	Parul Patel, Pharm.D.	6/2004-9/2005	Fellowship	GSK Research Scientist		
UCSD	Adrina Herrera-Tremolet, M.D.	7/2006-6/2007	Fellowship	Faculty UCSD School of Medicine, K23 awardee		
UCSD	Elizabeth Sarles, Pharm.D.	2006-2007		Pharmacy student		
Utah	W. Ellaria Lee, PharmD	7/1/2000-6/30/2002	Pediatric Clinical Pharmacology	CHOP		
Utah	Kristin Satterfield, PhD	7/1/2005-7/1/2007	Pediatric Clinical Pharmacology fellowship	Medical Student University of Utah		
Utah	Christopher Ortaon, PhD	8/1/2006-present	Postdoctoral fellowship in Pediatric Clinical Pharmacology studying pulmonary metabolism of steroids by CYPs 3A4,5,7	Fellow, University of Utah		
UTSW	Roberto Santos, MD	2005-2008		UTSW		
Wayne	Randy Prescilla, MD	1999-2001	Clinical Pharmacology Fellowship	Assistant Professor of Pediatrics Children's Hospital, Harvard, Boston		
Wayne	Hakan Ergun, MD, PhD	2000-2002	Clinical Pharmacology Fellowship	Professor of Pharmacology University of Ankara Turkey		
Wayne	Daniel Frattarelli, MD	NATO Scholar	Clinical Pharmacology Fellowship	Attending Pediatrician - Henry Ford Medical Center, Asst Professor of Pediatrics-Wayne State Univ, Detroit		
Wayne	Indu Warrier, MD	2001-2003	Clinical Pharmacology Fellowship			
Wayne	Merene Mathew, MD	2003-2006 (Completing 12-2006)	Pediatric Clinical Pharmacology Fellowship including 1 year of Allergy-Immunology-Pharmacology	Fellow, Wayne St		
Wayne		2006-2008	Clinical and Molecular Pharmacology Fellowship	Fellow, Wayne St		

Appendix J

List of Publications with Multi Disciplinary Investigators

Examples of PPRU Multidisciplinary Studies (2001-2004)

James LP, Simpson PM, Farrar HC, **Kearns GL**, Wasserman GS, **Blumer J**, **Reed MD**, **Sullivan JE**, Hinson JA, and the **PPRU Network**. Cytokines and toxicity in acetaminophen overdose. *Journal of Clinical Pharmacology*. October 2005; 45: 1165-1171. (**Emergency Departments, Hospitalist services and PICUs of multiple sites**)

Kovacs A, Montepiedra G, Carey V, Pahwa S, Weinberg A, Frenkel L, **Capparelli E**, Mofenson L, Smith E, McIntosh K, Burchett SK. Immune Reconstitution following HAART in Children with Advanced or Progressive HIV Disease and Complete or Partial Viral Load Response. *Journal of Infectious Diseases*. 2005; 192: 296-302 (**Collaboration with HIV programs in multiple institutions**)

Daw NC, Furman WL, Stewart CF, Iacono LC, Krailo M, Bernstein ML, Dancey JE, Speights RA, **Blaney SM**, Reaman GH, **Adamson PA**. A phase I and pharmacokinetic study of gefitinib in children with refractory solid tumors: **A Children's Oncology Group study**. *Journal of Clinical Oncology*. 2005; 23: 6172-6180.

Kovacs A, Cowles MK, Britto P, **Capparelli E**, Fowler MG, Jeremy RJ, Moye J, McIntosh K, Rathore MH, Pitt J, Husson RN. Pharmacokinetics of Didanosine and Drug Resistance Mutations in Infants Exposed to ZDV during Gestation or Postnatally and Treated with Didanosine or Zidovudine in the First Three Months of Life. *Pediatric Infectious Disease Journal*. 2005; 24: 503-509 (**Collaborations with HIV and Obstetrical programs**).

Acosta EP, Brundage RC, King JR, **Sanchez PJ**, Sood S, Agrawal V, Homans J, **Jacobs RF**, Lang D, Romero JR, Griffin J, Cloud G, Whitley R, Kimberlin DW. Ganciclovir population pharmacokinetics in neonates following intravenous administration of ganciclovir and oral administration of a liquid valganciclovir formulation. *Clinical Pharmacology and Therapeutics*, 2007 Jun; 81(6):867-72. (**Neonatal units in multiple centers**)

Benjamin DK, Stoll BJ, Fanaroff AA, McDonald SA, Oh W, Higgins R, Duara S, Poole K, Laptook A, Goldberg R. Neonatal Candidiasis Among Extremely Low Birth Weight Infants: Risk Factors Mortality, and Neurodevelopmental Outcomes at 18-22 Months. *Pediatrics*. 2006 Jan;117(1):84-92. (**Neonatal Fungal Study Group**)

Gururangan S, Petros WP, Poussaint TY, Hancock ML, Phillips PC, Friedman HS, **Bomgaars L**, **Blaney SM**, Kun LE, Boyett JM. Phase I trial of intrathecal spartaject busulfan in children with neoplastic meningitis: **a Pediatric Brain Tumor Consortium Study** (PBTC-004). *Clinical Cancer Research*. March 2006; 12(5): 1540-1546

Susan M Abdel-Rahman, Pharm.D.; David P Benziger, Ph.D.; **Richard F Jacobs**, M.D.; **Hasan S Jafri**, M.D.; Erica Fischer Hong, MPH; **Gregory L. Kearns**, Pharm.D., Ph.D. Single-dose pharmacokinetics of daptomycin in children with suspected or proved Gram-positive infections. *Pediatr Infect Dis J* 2008 (April). (**Infectious Disease services of multiple sites**)

Blake MJ, Abdel-Rahman SM, Jacobs RF, Lowery NK, Sterling TR, **Kearns GL**. Pharmacokinetics of rifapentine in children. *Pediatr Infect Dis J*. 2006; 25(5):405-9. (**Collaboration with CDC Tuberculosis programs**)

Daniel K. Benjamin, Jr, Barbara J. Stoll, **Avory A. Fanaroff**, Scott A. McDonald, William Oh, Rosemary D. Higgins, Shahnaz Duara, Kenneth Poole, **Abbot Laptook**, Ronald Goldberg and on behalf of the National Institute of Child Health and Human Development Neonatal Research Network. Neonatal Candidiasis Among Extremely Low Birth Weight Infants: Risk Factors, Mortality Rates, and Neurodevelopmental Outcomes at 18 to 22 Months *Pediatrics* 2006; 117: 84-92 (**Collaboration of PPRU and the Neonatal Research Network, NICHD**)

Daniel K. Benjamin, Jr, MD, MPH, PhD, Elizabeth R. DeLong, PhD, William J. Steinbach, MD, Charles M. Cotton, MD, Thomas J. Walsh, MD, and Reese H. Clark, MD Empirical Therapy for Neonatal Candidemia in Very Low Birth Weight Infants. *Pediatrics* 2003; 112:543-7 (**PPRU and Pediatrix Medical Group**)

Thompson P, Gupta M, Rosner G, Yu A, **Barrett J, Bomgaars L**, Bernstein M, **Blaney S**, Mondick J. Pharmacokinetics of irinotecan and its metabolites in pediatric cancer patients: A report from the children's oncology group. *Cancer Chemotherapy and Pharmacology* 2008 (**MSCIDA project of PPRU site in cooperation with COG**)

Jiang Z, Dragin N, **Jorge-Nebert LF**, Martin MV, Guengerich FP, Aklillu E, et al. Search for an association between the human CYP1A2 genotype and CYP1A2 metabolic phenotype. *Pharmacogenet Genomics* 2006; 16(5):359-67 (**Multi disciplinary pharmacogenetics group spearheaded by Dan Nebert**)

Weimert NA, DeRotte M, Alloway RR, Woodle ES and **Vinks AA**. Monitoring of Inosine Monophosphate Dehydrogenase Activity as a Biomarker for Mycophenolic Acid Effect: Potential Clinical Implications. *Ther Drug Monit*, 2007 29(2): 141-149 (**Collaboration between kidney transplant programs at UC and CCHMC**)
This has now expanded to 3 other PPRU sites: Utah, Arkansas and Dallas

Examples of studies of the PPRU in collaboration with other networks (Past and Future)

J. Steven Leeder, PharmD, PhD; Bob Batterson, MD ADR: Atypical Antipsychotic-Induced Weight Gain/Obesity. **Proposed study of PPRU and the NIGMS-supported Pharmacogenetics Research Network (PGRN).**

Susan Rahman Disruptions in bilirubin translocation related to developmental, genetic and environmental factors that alter the expression and/or activity of OATP transporters. **Proposed collaboration with the PPRU and an OPRU center in Galveston, TX**

Laura Greer (Fellow in OB/GYN), **Jeanne Sheffield, Pablo Sanchez and George McCracken** Clinical pharmacology of oseltamivir in pregnant and post-partum women. **Collaboration with PPRU and OPRU** (Protocol to be submitted to PPRU and OPRU soon)

Sanchez, Pablo David Kimberlin and other centers in PPRU and CASG. Pharmacokinetics and safety of oseltamivir in infants and young children **Collaboration of PPRU centers and the Collaborative Antiviral Study Group [CASG]**, currently in progress

Sanchez, P Ward, R and investigators from Neonatal Research network. Study of inositol in newborn infants. **Collaboration of PPRU and Neonatal Research Network centers.** In progress

Ardura, Monica (Fellow), **Ramilo, O, Kaplan, S** and others. Clinical Benefit of Adding a Bactericidal Antibiotic and Application of Transcriptional Profiles in Pediatric Patients with *Staphylococcus aureus* Sepsis. **Proposed study of PPRU centers and the NIGMS-supported Pharmacogenetics Research Network (PGRN).**

Aman MG, **Vinks AA**, Remmerie, B, Mannaert E, Ramadan Y, Masty, J, Lindsay RL, Malone K,. Plasma pharmacokinetics of risperidone and their relationship to saliva concentrations in children with psychiatric or neurodevelopmental disorders. *Clinical Therapeutics*, 2007, 29 (7): 1476-1486 **Collaboration with the Research Units of Pediatric Psychopharmacology (RUPP) network**

Benjamim, D et al Fluconazole prophylaxis for prevention of neonatal candidiasis. **Collaboration between PPRO and Pediatrix centers**, one of several on-going studies

Azbug MJ, Cloud G, Bradley J, **Sanchez P**, Romero J, Powell D, Lepow M, Mani C, **Capparelli EV**, Blount S, Lakeman F, Whitley RJ, Kimberlin DW. Double-blind, placebo-controlled trial of pleconaril in infants with enterovirus meningitis. *Ped Infect Dis J* 2003; 22:335-41. **A collaborative effort with the CASG**

Capparelli EV, van den Anker J, Brown K, Baren J, Mahajan P, Vance C, Lillis K, Stanley R, Davis D, Singh T, **Blumer J**, Chamberlain J, and the PPRU and PECARN Networks. Lorazepam pharmacokinetics in Children with status epilepticus. (Abstract) PAS-SPR 2007, Toronto CA. **Collaboration with PECARN**

Mirochnick M, Thomas T, **Capparelli E**, Zeh C, Holland D, Masaba R, Odhiambo P, Fowler MG, Weidle PJ, Thigpen M. Plasma antiretroviral concentrations in breast-feeding infants whose mothers are receiving HAART. Presented at Conference for Retroviruses and Opportunistic Infections 2007 Study in a neonatal population in **collaboration with CDC support KISUMU** (PPRU approved support for assay development)