

Curriculum Vitae

Date: 2/15/2023

Name: Paul W. Hruz, M.D., Ph.D.

Contact Information

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Present Position

Associate Professor of Pediatrics, Endocrinology and Diabetes
Associate Professor of Pediatrics, Cell Biology & Physiology

Education

1987 BS, Chemistry, Marquette University, Milwaukee, WI
1993 PhD, Biochemistry, Medical College of Wisconsin, Milwaukee, WI
Elucidation of Structural, Mechanistic, and Regulatory Elements in 3-Hydroxy-3-Methylglutaryl-Coenzyme A Lyase, Henry Mizioro
1994 MD, Medicine, Medical College of Wisconsin, Milwaukee, WI
1994 - 1997 Pediatric Residency, University of Washington, Seattle, Washington
1997 - 2000 Pediatric Endocrinology Fellowship, Washington University, Saint Louis, MO
2017 Certification in Healthcare Ethics, National Catholic Bioethics Center, Philadelphia, PA

Academic Positions / Employment

1996 - 1997 Locum Tenens Physician, Group Health of Puget Sound Eastside Hospital, Group Health of Puget Sound Eastside Hospital, Seattle, WA
2000 - 2003 Instructor in Pediatrics, Endocrinology and Diabetes, Washington University in St. Louis, St. Louis, MO
2003 - 2011 Assistant Professor of Pediatrics, Endocrinology and Diabetes, Washington University in St. Louis, St. Louis, MO
2004 - 2011 Assistant Professor of Pediatrics, Cell Biology & Physiology, Washington University in St. Louis, St. Louis, MO
2011 - Pres Associate Professor of Pediatrics, Cell Biology & Physiology, Washington University in St. Louis, St. Louis, MO

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- 2011 - Pres Associate Professor of Pediatrics, Endocrinology and Diabetes, Washington University in St. Louis, St. Louis, MO
- 2012 - 2017 Division Chief, Endocrinology and Diabetes, Washington University in St. Louis, St. Louis, MO

Clinical Title and Responsibilities

- General Pediatrician, General Pediatric Ward Attending: 2-4 weeks per year, St. Louis Children's Hospital
- 2000 - Pres Pediatric Endocrinologist, Endocrinology Night Telephone Consult Service: Average of 2-6 weeks/per yr, St. Louis Children's Hospital
- 2000 - Pres Pediatric Endocrinologist, Inpatient Endocrinology Consult Service: 3-6 weeks per year, St. Louis Children's Hospital
- 2000 - Pres Pediatric Endocrinologist, Outpatient Endocrinology Clinic: Approximately 50 patient visits per month, St. Louis Children's Hospital

Teaching Title and Responsibilities

- 2009 - Pres Lecturer, Markey Course-Diabetes Module
- 2020 - 2020 Facilitator, Reading Elective-Interdisciplinary/Miscellaneous Course #M80-800, Washington University School of Medicine

University, School of Medicine and Hospital Appointments and Committees

University

- 2012 - 2020 Disorders of Sexual Development Multidisciplinary Care Program

School of Medicine

- 2013 - 2020 Molecular Cell Biology Graduate Student Admissions Committee
- 2014 - Pres Research Consultant, ICTS Research Forum - Child Health

Hospital

- 2000 - Pres Attending Physician, St. Louis Children's Hospital

Medical Licensure and Certifications

- 1997 - Pres Board Certified in General Pediatrics
- 2000 - Pres MO Stae License #2000155004
- 2001 - Pres Board Certified in Pediatric Endocrinology & Metabolism

Honors and Awards

- 1987 National Institute of Chemists Research and Recognition Award
- 1987 Phi Beta Kappa
- 1987 Phi Lambda Upsilon (Honorary Chemical Society)
- 1988 American Heart Association Predoctoral Fellowship Award
- 1994 Alpha Omega Alpha
- 1994 Armond J. Quick Award for Excellence in Biochemistry

1994 NIDDK/Diabetes Branch Most Outstanding Resident
1998 Pfizer Postdoctoral Fellowship Award
2002 Scholar, Child Health Research Center of Excellence in Developmental Biology at Washington University
2013 Julio V Santiago, M.D. Scholar in Pediatrics
2017 Redemptor Hominis Award for Outstanding Contributions to the Study of Bioethics
2018 Eli Lilly Outstanding Contribution to Drug Discovery: Emerging Biology Award
2018 Scholar-Innovator Award, Harrington Discovery Institute
2021 Linacre Award

Editorial Responsibilities

Editorial Ad Hoc Reviews

AIDS
AIDS Research and Human Retroviruses
American Journal of Pathology
American Journal of Physiology
British Journal of Pharmacology
Circulation Research
Clinical Pharmacology & Therapeutics
Comparative Biochemistry and Physiology
Diabetes
Experimental Biology and Medicine
Future Virology
Journal of Antimicrobial Chemotherapy
Journal of Clinical Endocrinology & Metabolism
Journal of Molecular and Cellular Cardiology
Obesity Research
2000 - Pres Journal of Biological Chemistry
2013 - Pres PlosOne
2016 - Pres Scientific Reports
2018 - Pres Nutrients

Editorial Boards

2014 - 2015 Endocrinology and Metabolism Clinics of North America

National Panels, Committees

2017 - Pres Consultant, Catholic Health Association
2021 - Pres Consulting Fellow, National Catholic Bioethics Center

National Boards

2020 - Pres WU ICTS Clinical and Translational Research Funding Program (CTRFP) Review Committee

Community Service Contributions**Professional Societies and Organizations**

American Diabetes Association
 Endocrine Society
 Pediatric Endocrine Society

Major Invited Professorships and Lectures

2002 Pediatric Grand Rounds, St. Louis Children's Hospital, St Louis, MO
 2004 National Disease Research Interchange, Human Islet Cell Research Conference, Philadelphia, PA
 2004 NIDA-NIH Sponsored National Meeting on Hormones, Drug Abuse and Infections, Bethesda, MD
 2005 Endocrine Grand Rounds, University of Indiana, Indianapolis, IN
 2005 The Collaborative Institute of Virology, Complications Committee Meeting, Boston, MA
 2006 Metabolic Syndrome Advisory Board Meeting, Bristol-Meyers Squibb, Pennington, NJ
 2007 American Heart Association and American Academy of HIV Medicine State of the Science Conference: Initiative to Decrease Cardiovascular Risk and Increase Quality of Care for Patients Living with HIV/AIDS, Chicago, IL
 2007 Minority Access to Research Careers Seminar, University of Arizona, Tucson, AZ
 2007 MSTP Annual Visiting Alumnus Lecture, Medical College of Wisconsin , Milwaukee, WI
 2007 Pediatric Grand Rounds, St Louis Children's Hospital, St Louis, MO
 2008 Division of Endocrinology, Diabetes and Nutrition Grand Rounds, Boston University, Boston, MA
 2009 Pediatric Grand Rounds, St Louis Children's Hospital, St. Louis, MO
 2010 American Diabetes Association Scientific Sessions, Symposium Lecture Orlando, FL
 2010 School of Biological Sciences Conference Series, University of Missouri Kansas City, Kansas City, MO
 2011 Life Cycle Management Advisory Board Meeting, Bristol-Myers Squibb,, Chicago, IL
 2013 Pediatric Grand Rounds, St Louis Children's Hospital, ST LOUIS, MO
 2013 Clinical Practice Update Lecture, St Louis Children's Hospital, St Louis, MO
 2014 Pediatric Academic Societies Meeting,, Vancouver, Canada
 2014 American Diabetes Association 74th Scientific Sessions, , San Francisco, CA
 2017 Division of Pediatric Endocrinology Metabolism Rounds, University of Michigan, Ann Arbor, MI
 2017 Catholic Medical Association National Conference, Denver, CO
 2018 Obstetrics, Gynecology & Women's Health Grand Rounds, Saint Louis University, St. Louis, MO
 2018 Medical Grand Rounds, Sindicato Médico del Uruguay, Montevideo, Uruguay
 2018 Internal Medicine Grand Rounds, Texas Tech , Lubbock, TX
 2019 Veritas Center for Ethics in Public Life Conference, Franciscan University, Steubenville, OH
 2019 MaterCare International Conference, Rome, Italy
 2019 Child Health Policy Forum, Notre Dame University, South Bend , IN

2021 Obstetrics & Gynecology Grand Rounds, University of Tennessee, Knoxville , TN
 2022 The World Federation of Catholic Medical Associations (*FIAMC*), Rome, Italy

Consulting Relationships and Board Memberships

1996 - 2012 Consultant, Bristol Myers Squibb
 1997 - 2012 Consultant, Gilead Sciences

Research Support

Completed Governmental Support

2001 - 2006 K-08 A149747, NIH
 Mechanism of GLUT4 Inhibition by HIV Protease Inhibitors
 Role: Principal Investigator

2007 - 2012 R01
 Mechanisms for Altered Glucose Homeostasis During HAART
 Role: Principal Investigator
 Total cost: \$800,000.00

2009 - 2011 R01 Student Supp
 Mechanisms for Altered Glucose Homeostasis During HAART
 Role: Principal Investigator
 Total cost: \$25,128.00

2009 - 2014 R01
 Direct Effects of Antiretroviral Therapy on Cardiac Energy Homeostasis
 Role: Principal Investigator
 Total cost: \$1,250,000.00

2017 - 2019 R-21 1R21AI130584 , National Institutes of Health
 SELECTIVE INHIBITION OF THE P. FALCIPARUM GLUCOSE TRANSPORTER PFHT
 Role: Principal Investigator
 Total cost: \$228,750.00

Completed Non-Governmental Support

2015 Novel HIV Protease Inhibitors and GLUT4
 Role: Principal Investigator

2008 - 2011 II
 Insulin Resistance and Myocardial Glucose Metabolism in Pediatric Heart Failure
 Role: Co-Investigator
 PI: Hruz
 Total cost: \$249,999.00

2009 - 2012 Research Program
 Regulation of GLUT4 Intrinsic Activity
 Role: Principal Investigator
 Total cost: \$268,262.00

2010 - 2011 Protective Effect of Saxagliptin on a Progressive Deterioration of Cardiovascular Function
 Role: Principal Investigator

2012 - 2015 II
 Solution-State NMR Structure and Dynamics of Facilitative Glucose Transport Proteins
 Role: Principal Investigator
 Total cost: \$375,000.00

- 2017 - 2020 Prevention And Treatment Of Hepatic Steatosis Through Selective Targeting Of GLUT8
Role: Co-Principal Investigator
PI: DeBosch
Total cost: \$450,000.00
- 2017 - 2021 Matching Micro Grant
Novel Treatment of Fatty Liver Disease (CDD/LEAP)
Role: Principal Investigator
Total cost: \$68,500.00
- 2018 - 2021 LEAP Innovator Challenge
Novel Treatment of Fatty Liver Disease
Role: Principal Investigator
Total cost: \$68,500.00
- 2019 - 2021 Scholar-Innovator Award HDI2019-SI-4555 , Harrington Foundation
Novel Treatment of Non-Alcoholic Fatty Liver Disease
Role: Principal Investigator
Total cost: \$379,000.00

Current Governmental Support

- 2021 - 2025 R-01 DK126622 (Co-investigator), 8/25/2021-7/31/2025, NIH-NIDDK, , NIH
Leveraging glucose transport and the adaptive fasting response to modulate hepatic metabolism
Role: Co-Investigator
PI: DeBosch

Trainee/Mentee/Sponsorship Record

- 2002 - 2002 Nishant Raj- Undergraduate Student, Other
Study area: Researcher
- 2002 - 2010 Joseph Koster, PhD, Postdoctoral Fellow
Study area: Researcher
- 2003 - 2004 Johann Hertel, Medical Student
Study area: Research
Present position: Assistant Professor, University of North Carolina, Chapel Hill, NC
- 2003 - 2003 John Paul Shen, Medical Student
Study area: Research
- 2004 - 2005 Carl Cassel- High School Student, Other
Study area: Research
- 2004 - 2004 Christopher Hawkins- Undergraduate Student, Other
Study area: Researcher
- 2004 - 2004 Kaiming Wu- High School Student, Other
Study area: Research
- 2005 - 2005 Helena Johnson, Graduate Student
- 2005 - 2005 Jeremy Etzkorn, Medical Student
Study area: Researcher
- 2005 - 2005 Dominic Doran, DSc, Postdoctoral Fellow
Study area: HIV Protease Inhibitor Effects on Exercise Tolerance
- 2006 - 2006 Ramon Jin, Graduate Student
Study area: Research

2006 - 2006 Taekyung Kim, Graduate Student
Study area: Research

2007 - 2007 Jan Freiss- Undergraduate Student, Other
Study area: Researcher

2007 - 2008 Kai-Chien Yang, Graduate Student
Study area: Research
Present position: Postdoctoral Research Associate, University of Chicago

2007 - 2007 Paul Buske, Graduate Student
Study area: Research

2007 - 2007 Randy Colvin, Medical Student
Study area: Researcher

2008 - 2011 Arpita Vyas, MD, Clinical Fellow
Study area: Research
Present position: Assistant Professor, Michigan State University, Lansing MI

2008 - 2009 Candace Reno, Graduate Student
Study area: Research
Present position: Research Associate, University of Utah

2008 - 2012 Dennis Woo- Undergraduate Student, Other
Study area: Researcher
Present position: MSTP Student, USC, Los Angeles CA

2008 - 2008 Temitope Aiyekorun, Graduate Student
Study area: Research

2009 - 2009 Anne-Sophie Stolle- Undergraduate Student, Other
Study area: Research

2009 - 2009 Matthew Hruz- High School Student, Other
Study area: Research
Present position: Computer Programmer, Consumer Affairs, Tulsa OK

2009 - 2009 Stephanie Scherer, Graduate Student
Study area: Research

2010 - 2014 Lauren Flessner, PhD, Postdoctoral Fellow
Present position: Instructor, Syracuse University

2010 - 2010 Constance Haufe- Undergraduate Student, Other
Study area: Researcher

2010 - 2011 Corinna Wilde- Undergraduate Student, Other
Study area: Researcher

2010 - 2010 Samuel Lite- High School Student, Other
Study area: Research

2011 - 2016 Thomas Kraft, Graduate Student
Study area: Glucose transporter structure/function
Present position: Postdoctoral Fellow, Roche, Penzberg, Germany

2011 - 2011 Amanda Koenig- High School Student, Other
Study area: Research

2011 - 2012 Lisa Becker- Undergraduate Student, Other

2011 - 2011 Melissa Al-Jaoude- High School Students, Other

2019 Ava Suda, Other, Pre-med

Bibliography

A. Journal Articles

1. Hruz PW, Narasimhan C, Mizioro HM. 3-Hydroxy-3-methylglutaryl coenzyme A lyase: affinity labeling of the *Pseudomonas mevalonii* enzyme and assignment of cysteine-237 to the active site. *Biochemistry*. 1992;31(29):6842-7. PMID:[1637819](#)
2. Hruz PW, Mizioro HM. Avian 3-hydroxy-3-methylglutaryl-CoA lyase: sensitivity of enzyme activity to thiol/disulfide exchange and identification of proximal reactive cysteines. *Protein Sci*. 1992;1(9):1144-53. doi:[10.1002/pro.5560010908](#) PMCID:[PMC2142181](#) PMID:[1304393](#)
3. Mitchell GA, Robert MF, Hruz PW, Wang S, Fontaine G, Behnke CE, Mende-Mueller LM, Schappert K, Lee C, Gibson KM, Mizioro HM. 3-Hydroxy-3-methylglutaryl coenzyme A lyase (HL). Cloning of human and chicken liver HL cDNAs and characterization of a mutation causing human HL deficiency. *J Biol Chem*. 1993;268(6):4376-81. PMID:[8440722](#)
4. Hruz PW, Anderson VE, Mizioro HM. 3-Hydroxy-3-methylglutaryldithio-CoA: utility of an alternative substrate in elucidation of a role for HMG-CoA lyase's cation activator. *Biochim Biophys Acta*. 1993;1162(1-2):149-54. PMID:[8095409](#)
5. Roberts JR, Narasimhan C, Hruz PW, Mitchell GA, Mizioro HM. 3-Hydroxy-3-methylglutaryl-CoA lyase: expression and isolation of the recombinant human enzyme and investigation of a mechanism for regulation of enzyme activity. *J Biol Chem*. 1994;269(27):17841-6. PMID:[8027038](#)
6. Hruz PW, Mueckler MM. Cysteine-scanning mutagenesis of transmembrane segment 7 of the GLUT1 glucose transporter. *J Biol Chem*. 1999;274(51):36176-80. PMID:[10593902](#)
7. Murata H, Hruz PW, Mueckler M. The mechanism of insulin resistance caused by HIV protease inhibitor therapy. *J Biol Chem*. 2000;275(27):20251-4. doi:[10.1074/jbc.C000228200](#) PMID:[10806189](#)
8. Hruz PW, Mueckler MM. Cysteine-scanning mutagenesis of transmembrane segment 11 of the GLUT1 facilitative glucose transporter. *Biochemistry*. 2000;39(31):9367-72. PMID:[10924131](#)
9. Hruz PW, Mueckler MM. Structural analysis of the GLUT1 facilitative glucose transporter (review). *Mol Membr Biol*. 2001;18(3):183-93. PMID:[11681785](#)
10. Murata H, Hruz PW, Mueckler M. Investigating the cellular targets of HIV protease inhibitors: implications for metabolic disorders and improvements in drug therapy. *Curr Drug Targets Infect Disord*. 2002;2(1):1-8. PMID:[12462148](#)
11. Hruz PW, Murata H, Qiu H, Mueckler M. Indinavir induces acute and reversible peripheral insulin resistance in rats. *Diabetes*. 2002;51(4):937-42. PMID:[11916910](#)
12. Murata H, Hruz PW, Mueckler M. Indinavir inhibits the glucose transporter isoform Glut4 at physiologic concentrations. *AIDS*. 2002;16(6):859-63. PMID:[11919487](#)
13. Koster JC, Remedi MS, Qiu H, Nichols CG, Hruz PW. HIV protease inhibitors acutely impair glucose-stimulated insulin release. *Diabetes*. 2003;52(7):1695-700. PMCID:[PMC1403824](#) PMID:[12829635](#)
14. Liao Y, Shikapwashya ON, Shteyer E, Dieckgraefe BK, Hruz PW, Rudnick DA. Delayed hepatocellular mitotic progression and impaired liver regeneration in early growth response-1-deficient mice. *J Biol Chem*. 2004;279(41):43107-16. doi:[10.1074/jbc.M407969200](#) PMID:[15265859](#)
15. Shteyer E, Liao Y, Muglia LJ, Hruz PW, Rudnick DA. Disruption of hepatic adipogenesis is associated with impaired liver regeneration in mice. *Hepatology*. 2004;40(6):1322-32. doi:[10.1002/hep.20462](#) PMID:[15565660](#)
16. Hertel J, Struthers H, Horj CB, Hruz PW. A structural basis for the acute effects of HIV protease inhibitors on GLUT4 intrinsic activity. *J Biol Chem*. 2004;279(53):55147-52. doi:[10.1074/jbc.M410826200](#) PMCID:[PMC1403823](#) PMID:[15496402](#)

17. Yan Q, Hruz PW. Direct comparison of the acute in vivo effects of HIV protease inhibitors on peripheral glucose disposal. *J Acquir Immune Defic Syndr*. 2005;40(4):398-403. PMID:[PMC1360159](#) PMID:[16280693](#)
18. Hruz PW. Molecular Mechanisms for Altered Glucose Homeostasis in HIV Infection. *Am J Infect Dis*. 2006;2(3):187-192. PMID:[PMC1716153](#) PMID:[17186064](#)
19. Turmelle YP, Shikapwashya O, Tu S, Hruz PW, Yan Q, Rudnick DA. Rosiglitazone inhibits mouse liver regeneration. *FASEB J*. 2006;20(14):2609-11. doi:[10.1096/fj.06-6511fje](#) PMID:[17077279](#)
20. Hruz PW, Yan Q, Struthers H, Jay PY. HIV protease inhibitors that block GLUT4 precipitate acute, decompensated heart failure in a mouse model of dilated cardiomyopathy. *FASEB J*. 2008;22(7):2161-7. doi:[10.1096/fj.07-102269](#) PMID:[18256305](#)
21. Hruz PW. HIV protease inhibitors and insulin resistance: lessons from in-vitro, rodent and healthy human volunteer models. *Curr Opin HIV AIDS*. 2008;3(6):660-5. doi:[10.1097/COH.0b013e3283139134](#) PMID:[PMC2680222](#) PMID:[19373039](#)
22. Flint OP, Noor MA, Hruz PW, Hylemon PB, Yarasheski K, Kotler DP, Parker RA, Bellamine A. The role of protease inhibitors in the pathogenesis of HIV-associated lipodystrophy: cellular mechanisms and clinical implications. *Toxicol Pathol*. 2009;37(1):65-77. doi:[10.1177/0192623308327119](#) PMID:[PMC3170409](#) PMID:[19171928](#)
23. Tu P, Bhasin S, Hruz PW, Herbst KL, Castellani LW, Hua N, Hamilton JA, Guo W. Genetic disruption of myostatin reduces the development of proatherogenic dyslipidemia and atherogenic lesions in Ldlr null mice. *Diabetes*. 2009;58(8):1739-48. doi:[10.2337/db09-0349](#) PMID:[PMC2712781](#) PMID:[19509018](#)
24. Guo W, Wong S, Pudney J, Jasuja R, Hua N, Jiang L, Miller A, Hruz PW, Hamilton JA, Bhasin S. Acipimox, an inhibitor of lipolysis, attenuates atherogenesis in LDLR-null mice treated with HIV protease inhibitor ritonavir. *Arterioscler Thromb Vasc Biol*. 2009;29(12):2028-32. doi:[10.1161/ATVBAHA.109.191304](#) PMID:[PMC2783673](#) PMID:[19762785](#)
25. Vyas AK, Koster JC, Tzekov A, Hruz PW. Effects of the HIV protease inhibitor ritonavir on GLUT4 knock-out mice. *J Biol Chem*. 2010;285(47):36395-400. doi:[10.1074/jbc.M110.176321](#) PMID:[PMC2978568](#) PMID:[20864532](#)
26. Gazit V, Weymann A, Hartman E, Finck BN, Hruz PW, Tzekov A, Rudnick DA. Liver regeneration is impaired in lipodystrophic fatty liver dystrophy mice. *Hepatology*. 2010;52(6):2109-17. doi:[10.1002/hep.23920](#) PMID:[PMC2991544](#) PMID:[20967828](#)
27. Hresko RC, Hruz PW. HIV protease inhibitors act as competitive inhibitors of the cytoplasmic glucose binding site of GLUTs with differing affinities for GLUT1 and GLUT4. *PLoS One*. 2011;6(9):e25237. doi:[10.1371/journal.pone.0025237](#) PMID:[PMC3179492](#) PMID:[21966466](#)
28. Vyas AK, Yang KC, Woo D, Tzekov A, Kovacs A, Jay PY, Hruz PW. Exenatide improves glucose homeostasis and prolongs survival in a murine model of dilated cardiomyopathy. *PLoS One*. 2011;6(2):e17178. doi:[10.1371/journal.pone.0017178](#) PMID:[PMC3040766](#) PMID:[21359201](#)
29. Hruz PW, Yan Q, Tsai L, Koster J, Xu L, Cihlar T, Callebaut C. GS-8374, a novel HIV protease inhibitor, does not alter glucose homeostasis in cultured adipocytes or in a healthy-rodent model system. *Antimicrob Agents Chemother*. 2011;55(4):1377-82. doi:[10.1128/AAC.01184-10](#) PMID:[PMC3067185](#) PMID:[21245443](#)
30. Remedi MS, Agapova SE, Vyas AK, Hruz PW, Nichols CG. Acute sulfonylurea therapy at disease onset can cause permanent remission of KATP-induced diabetes. *Diabetes*. 2011;60(10):2515-22. doi:[10.2337/db11-0538](#) PMID:[PMC3178299](#) PMID:[21813803](#)
31. Aerni-Flessner L, Abi-Jaoude M, Koenig A, Payne M, Hruz PW. GLUT4, GLUT1, and GLUT8 are the dominant GLUT transcripts expressed in the murine left ventricle. *Cardiovasc Diabetol*. 2012;11:63. doi:[10.1186/1475-2840-11-63](#) PMID:[PMC3416696](#) PMID:[22681646](#)

32. Vyas AK, Aerni-Flessner LB, Payne MA, Kovacs A, Jay PY, Hruz PW. Saxagliptin Improves Glucose Tolerance but not Survival in a Murine Model of Dilated Cardiomyopathy. *Cardiovasc Endocrinol.* 2012;1(4):74-82. doi:[10.1097/XCE.0b013e32835bfb24](https://doi.org/10.1097/XCE.0b013e32835bfb24) PMID:[23795310](https://pubmed.ncbi.nlm.nih.gov/23795310/)
33. Hresko RC, Kraft TE, Tzekov A, Wildman SA, Hruz PW. Isoform-selective inhibition of facilitative glucose transporters: elucidation of the molecular mechanism of HIV protease inhibitor binding. *J Biol Chem.* 2014;289(23):16100-16113. doi:[10.1074/jbc.M113.528430](https://doi.org/10.1074/jbc.M113.528430) PMID:[24706759](https://pubmed.ncbi.nlm.nih.gov/24706759/)
34. Mishra RK, Wei C, Hresko RC, Bajpai R, Heitmeier M, Matulis SM, Nooka AK, Rosen ST, Hruz PW, Schiltz GE, Shanmugam M. In Silico Modeling-based Identification of Glucose Transporter 4 (GLUT4)-selective Inhibitors for Cancer Therapy. *J Biol Chem.* 2015;290(23):14441-53. doi:[10.1074/jbc.M114.628826](https://doi.org/10.1074/jbc.M114.628826) PMID:[25847249](https://pubmed.ncbi.nlm.nih.gov/25847249/)
35. Kraft TE, Hresko RC, Hruz PW. Expression, purification, and functional characterization of the insulin-responsive facilitative glucose transporter GLUT4. *Protein Sci.* 2015. doi:[10.1002/pro.2812](https://doi.org/10.1002/pro.2812) PMID:[26402434](https://pubmed.ncbi.nlm.nih.gov/26402434/)
36. Kraft TE, Armstrong C, Heitmeier MR, Odom AR, Hruz PW. The Glucose Transporter PfHT1 Is an Antimalarial Target of the HIV Protease Inhibitor Lopinavir. *Antimicrob Agents Chemother.* 2015;59(10):6203-9. doi:[10.1128/AAC.00899-15](https://doi.org/10.1128/AAC.00899-15) PMID:[26248369](https://pubmed.ncbi.nlm.nih.gov/26248369/)
37. DeBosch BJ, Heitmeier MR, Mayer AL, Higgins CB, Crowley JR, Kraft TE, Chi M, Newberry EP, Chen Z, Finck BN, Davidson NO, Yarasheski KE, Hruz PW, Moley KH. Trehalose inhibits solute carrier 2A (SLC2A) proteins to induce autophagy and prevent hepatic steatosis. *Sci Signal.* 2016;9(416):ra21. doi:[10.1126/scisignal.aac5472](https://doi.org/10.1126/scisignal.aac5472) PMID:[26905426](https://pubmed.ncbi.nlm.nih.gov/26905426/)
38. Hresko RC, Kraft TE, Quigley A, Carpenter EP, Hruz PW. Mammalian Glucose Transporter Activity is Dependent upon Anionic and Conical Phospholipids. *J Biol Chem.* 2016. doi:[10.1074/jbc.M116.730168](https://doi.org/10.1074/jbc.M116.730168) PMID:[27302065](https://pubmed.ncbi.nlm.nih.gov/27302065/)
39. Kraft TE, Heitmeier MR, Putanko M, Edwards RL, Ilagan MX, Payne MA, Autry JM, Thomas DD, Odom AR, Hruz PW. A Novel Fluorescence Resonance Energy Transfer-Based Screen in High-Throughput Format To Identify Inhibitors of Malarial and Human Glucose Transporters. *Antimicrob Agents Chemother.* 2016;60(12):7407-7414. PMID:[27736766](https://pubmed.ncbi.nlm.nih.gov/27736766/)
40. Mayer AL, Higgins CB, Heitmeier MR, Kraft TE, Qian X, Crowley JR, Hyrc KL, Beatty WL, Yarasheski KE, Hruz PW, DeBosch BJ. SLC2A8 (GLUT8) is a mammalian trehalose transporter required for trehalose-induced autophagy. *Sci Rep.* 2016;6:38586. PMID:[27922102](https://pubmed.ncbi.nlm.nih.gov/27922102/)
41. Edwards RL, Brothers RC, Wang X, Maron MI, Ziniel PD, Tsang PS, Kraft TE, Hruz PW, Williamson KC, Dowd CS, John ARO. MEPicides: potent antimalarial prodrugs targeting isoprenoid biosynthesis. *Sci Rep.* 2017;7(1):8400. PMID:[28827774](https://pubmed.ncbi.nlm.nih.gov/28827774/)
42. Wei C, Bajpai R, Sharma H, Heitmeier M, Jain AD, Matulis SM, Nooka AK, Mishra RK, Hruz PW, Schiltz GE, Shanmugam M. Development of GLUT4-selective antagonists for multiple myeloma therapy. *Eur J Med Chem.* 2017;139:573-586. PMID:[28837922](https://pubmed.ncbi.nlm.nih.gov/28837922/)
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44. Heitmeier MR, Payne MA, Weinheimer C, Kovacs A, Hresko RC, Jay PY, Hruz PW. Metabolic and Cardiac Adaptation to Chronic Pharmacologic Blockade of Facilitative Glucose Transport in Murine Dilated Cardiomyopathy and Myocardial Ischemia. *Sci Rep.* 2018;8(1):6475. PMID:[29691457](https://pubmed.ncbi.nlm.nih.gov/29691457/)
45. Zhang Y, Higgins CB, Mayer AL, Mysorekar IU, Razani BB, Graham MJ, Hruz PW, DeBosch BJ. TFEB-dependent Induction of Thermogenesis by the Hepatocyte SLC2A Inhibitor Trehalose. *Autophagy.* 2018. PMID:[29996716](https://pubmed.ncbi.nlm.nih.gov/29996716/)

46. Emfinger CH, Yan Z, Welscher A, Hung P, McAllister W, Hruz PW, Nichols CG, Remedi MS. Contribution of systemic inflammation to permanence of K_{ATP}-induced neonatal diabetes in mice. *Am J Physiol Endocrinol Metab*. 2018;315(6):E1121-E1132. PMID:[PMC6336961](#) PMID:[30226997](#)
47. Heitmeier MR, Hresko RC, Edwards RL, Prinsen MJ, Ilagan MXG, Odom John AR, Hruz PW. Identification of druggable small molecule antagonists of the Plasmodium falciparum hexose transporter PfHT and assessment of ligand access to the glucose permeation pathway via FLAG-mediated protein engineering. *PLoS One*. 2019;14(5):e0216457. PMID:[PMC6508677](#) PMID:[31071153](#)
48. Hruz PW. Deficiencies in Scientific Evidence for Medical Management of Gender Dysphoria. *Linacre Q*. 2020;87(1):34-42. PMID:[PMC7016442](#) PMID:[32431446](#)
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50. Malone WJ, Hruz PW, Mason JW, Beck S. Letter to the Editor from William J. Malone: "Proper Care of Transgender and Gender Diverse Persons in the Setting of Proposed Discrimination: A Policy Perspective". *J Clin Endocrinol Metab*. 2021. PMID:[33772300](#)
51. McMillin SL, Evans PL, Taylor WM, Weyrauch LA, Sermersheim TJ, Welc SS, Heitmeier MR, Hresko RC, Hruz PW, Koumanov F, Holman GD, Abel ED, Witzak CA. Muscle-Specific Ablation of Glucose Transporter 1 (GLUT1) Does Not Impair Basal or Overload-Stimulated Skeletal Muscle Glucose Uptake. *Biomolecules*. 2022;12(12):1734. PMID: 36551162; PMID: PMC9776291.

C2. Chapters

1. Henderson KE, Baranski TJ, Bickel PE, Clutter PE, Clutter WE, McGill JB. Endocrine Disorders in HIV/AIDS. In: *The Washington Manual Endocrinology Subspecialty Consult* Philadelphia, PA; 2008:321-328.
2. Paul W Hruz. Medical Approaches to Alleviating Gender Dysphoria In: Edward J Furton, eds. *Transgender Issues in Catholic Health Care* Philadelphia PA; 2021:1-42.
3. Cara Buskmiller and Paul Hruz. A Biological Understanding of Man and Woman In: John Finley, eds. *Sexual Identity: The Harmony of Philosophy, Science, and Revelation* Steubenville OH; 2022:Chapter 2, pp 65-103.

C4. Invited Publications

1. Grunfeld C, Kotler DP, Arnett DK, Falutz JM, Haffner SM, Hruz P, Masur H, Meigs JB, Mulligan K, Reiss P, Samaras K, Working Group 1. Contribution of metabolic and anthropometric abnormalities to cardiovascular disease risk factors. *Circulation*. 2008;118(2):e20-8. PMID: [PMC3170411](#) PMID: [18566314](#)
2. Hruz PW. HIV protease inhibitors and insulin resistance: lessons from in-vitro, rodent and healthy human volunteer models. *Curr Opin HIV AIDS*. 2008;3(6):660-5. PMID: [PMC2680222](#) PMID: [19373039](#)
3. Hruz PW. Molecular mechanisms for insulin resistance in treated HIV-infection. *Best Pract Res Clin Endocrinol Metab*. 2011;25(3):459-68. PMID: [PMC3115529](#) PMID: [21663839](#)
4. Hruz PW. HIV and endocrine disorders. *Endocrinol Metab Clin North Am*. 2014;43(3): xvii–xviii. PMID: [25169571](#)
5. Hruz PW. Commentary. *Clin Chem*. 2015;61(12):1444. PMID: [26614228](#)

6. Hruz PW, Mayer LS, and McHugh PR. Growing Pains: Problems with Pubertal Suppression in Treating Gender Dysphoria *The New Atlantis*. 2017;52:3-36.
7. Hruz, PW. The Use of Cross-Sex Steroids in Treating Gender Dysphoria *Natl Cathol Bioeth Q*. 2018;17(4):1-11.
8. Hruz, PW. Experimental Approaches to Alleviating Gender Dysphoria in Children *Nat Cathol Bioeth Q*. 2019;19(1):89-104.

Expert Witness Testimony

- 2009 Rosas v. Astrazeneca
- 2012 O'Connor v. Stamford
- 2016 Carcaño et al. v. Patrick McCrory (United States District Court, M.D. North Carolina)
- 2016 Jane Doe v. Board of Education of the Highland School District (United States District Court For the Southern District of Ohio Eastern Division, Case No. 2:16-CV-, 524)
- 2017 Ward v. Janssen (Circuit Court of St Louis, Division 16, MO, Case No. 1522-CC00213-01)
- 2017 Adams v. St John's School Board (United States District Court For the Middle District of Florida, FL Civil Action No. 3:17-cv-00739-TJCJBT)
- 2017 Ashton Whitaker v. Kenosha Unified School District (United States District Court Eastern District of Wisconsin, Civ. Action No. 2:16-cv-00943)
- 2018 Terri Bruce v. State of South Dakota (The United States District Court District of South Dakota Western Division, Case No. 17-5080)
- 2019 Cause DF-15-09887-SD of the 255th Judicial Circuit of Dallas County, TX regarding the dispute between J.A. D.Y. and J.U. D.Y., Children
- 2021 Kadel vs. Falwell (The United States District Court For The Middle District Of North Carolina, Case No.: 1:19-cv-272-LCB-LPA)
- 2022 Brandt v Rutledge (The United States District Court Eastern District of Arkansas Central Division, Case No. 4:21-CV-00450-JM)
- 2022 Eknes-Tucker vs Ivey (United States District Court Middle District of Alabama Northern Division, Case 2:22-cv-00184-LCB-SRW)
- 2022 D.H. et al. v. Snyder (United States District Court For the District Court of Arizona, Case No. 4:20-cv-00335-SHR)