**UNITED STATES DISTRICT COURT**
**MIDDLE DISTRICT OF FLORIDA**
**JACKSONVILLE DIVISION**

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| DREW ADAMS, a minor, by and through his next friend and mother, ERICA ADAMS KASPER,<br><br>Plaintiff,<br>v.<br><br>THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA,<br><br>Defendant. | **Case No. 3:17-cv-00739-TJC-JBT** |

**PLAINTIFF'S MOTION TO EXCLUDE EXPERT TESTIMONY OF DR. PAUL W. HRUZ AND SUPPORTING MEMORANDUM OF LAW**

Pursuant to Federal Rules of Civil Procedure 26 and 37, and Federal Rules of Evidence 104, 403, and 702, Plaintiff Drew Adams ("Drew"), a minor, by and through his next friend and mother, Erica Adams Kasper (collectively, "Plaintiff"), respectfully moves this Court to exclude the expert testimony of Defendant's proposed expert, Dr. Paul W. Hruz. *First*, pursuant to Federal Rule of Civil Procedure 37, Dr. Hruz's opinions and testimony should be excluded because he is a belatedly disclosed affirmative expert in violation of the Scheduling and Case Management Order (Dkt. 59) and Federal Rule of Civil Procedure 26(a)(2)(B). *Second*, Dr. Hruz's is not a qualified expert and his opinions and testimony are neither relevant nor reliable pursuant to the standards set forth in *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993), and its progeny. His opinions and testimony are likewise inadmissible because any probative value is substantially outweighed by the danger of unfair prejudice,

confusion of the issues, waste of time, undue delay, and needless presentation of cumulative evidence. *See* Fed. R. Evid. 403.

## ARGUMENT

### I. DR. HRUZ'S AFFIRMATIVE EXPERT TESTIMONY SHOULD BE EXCLUDED BECAUSE IT WAS UNTIMELY IN VIOLATION OF FEDERAL RULE OF CIVIL PROCEDURE 26 AND THIS COURT'S CASE MANAGEMENT ORDER.

In a thinly-veiled attempt to circumvent this Court's Case Management Order and in violation of the Federal Rules of Civil Procedure, Defendant untimely and improperly disclosed Dr. Hruz as a rebuttal expert witness on November 3, 2017, but, by his own admission, Dr. Hruz's opinions and testimony are that of an affirmative export. This late-filed disclosure is neither justified nor harmless and, accordingly, Dr. Hruz should be excluded as an expert witness.

#### A. Legal Standard For Rebuttal Expert Testimony.

Federal Rule of Civil Procedure 26(a) requires an expert witness to produce a report which contains, among other things, "a complete statement of all opinions the witness will express and the basis and reasons for them" and "the facts or data considered by the witness in forming them." Fed. R. Civ. P. 26(a)(2). Moreover, Rule 26(e) states a party must supplement its expert report "if the party learns that in some material respect the disclosure or response is incomplete or incorrect." Fed. R. Civ. P. 26(e). Eleventh Circuit has explained that "the expert disclosure rule is intended to provide opposing parties reasonable opportunity to prepare for effective cross examination and perhaps arrange for expert testimony from other witnesses." *Reese v. Herbert*, 527 F.3d 1253, 1265 (11th Cir. 2008) (quotation omitted).

After the parties' initial disclosures of proposed expert testimony, opposing parties have thirty days to disclose any expert witness who will offer evidence "intended ***solely*** to contradict or rebut evidence on the same subject matter identified by another party." Fed. R. Civ. P. 26(a)(2)(D)(ii) (emphasis added). A rebuttal expert's proper role is to "explain, repel, counteract or disprove evidence of the adverse party." *Marmo v. Tyson Fresh Meats, Inc.*, 457 F.3d 748, 759 (8th Cir. 2006); *see also Faigin v. Kelley*, 184 F.3d 67, 85 (1st Cir. 1999) ("The principal objective of rebuttal is to counter new, unforeseen facts brought out in the other side's case."). Therefore, "[a] rebuttal expert report is not the proper place for presenting new arguments, unless presenting those arguments is substantially justified and causes no prejudice." *STS Software Sys., Ltd. v. Witness Sys., Inc.*, No. 04-CV-2111, 2008 WL 660325, at *2 (N.D. Ga. Mar. 6, 2008) (cleaned up).

A rebuttal expert cannot be used to introduce evidence and opinions essential to the establishment of the proffering party's case-in-chief. *See, e.g., Peals v. Terre Haute Police Dep't*, 535 F.3d 621, 630 (7th Cir. 2008) ("The proper function of rebuttal evidence is to contradict, impeach or defuse the impact of evidence offered by an adverse party."); *Sil-Flo, Inc. v. SFHC, Inc.*, 917 F.2d 1507, 1515 (10th Cir. 1990) (trial court properly excluded plaintiffs' expert's rebuttal testimony where the "proffered rebuttal testimony was really an attempt by Sil-Flo, Inc. to introduce or interpret exhibits more properly part of its case in chief."); *Larson v. Wis. Ctr. Ltd.*, No. 10–C–446, 2012 WL 368379, at *4 (E.D. Wis. Feb.3, 2012) ("It cannot be used to advance new arguments or new evidence to support plaintiff's expert's initial opinions."). The case law supports a strict reading of the rule. As one court put it:

> A party presents its arguments as to the issues for which it has the burden of proof in its initial expert report. And in its rebuttal expert report, it presents expert opinions refuting the arguments made by the opposing party in its initial expert report. The rebuttal expert report is no place for presenting new arguments, unless presenting those arguments is substantially justified and causes no prejudice.

*Baldwin Graphics Sys., Inc. v. Siebert, Inc.*, No. 03-CV-7713, 2005 WL 1300763, at *2 (N.D. Ill. Feb. 22, 2005).

Put simply, a party cannot "offer testimony under the guise of 'rebuttal' only to provide additional support for his case in chief." *Cage v. City of Chi.*, No. 09–C–3078, 2012 WL 5557410, at *2 (N.D. Ill. Nov. 14, 2012).

**B. Dr. Hruz's "Rebuttal" Expert Report Is An Affirmative Expert Report.**

On November 3, 2017, less than three weeks before the close of fact discovery in this case, Defendant disclosed Dr. Hruz as an expert witness. *See* Exhibit A – Defendant's Rule 26(a)(2) Disclosures. Although Defendant disclosed Dr. Hruz as a rebuttal expert to the testimony of Plaintiff's expert witnesses, Dr. Deanna Adkins and Dr. Diane Ehrensaft, that disclosure elevates form over substance.[1]

By his own admission, Dr. Hruz's testimony is that of an affirmative expert, and not a rebuttal expert, however. At his deposition on November 20, 2017, just 17 days after his initial disclosure, Dr. Hruz testified as follows:

Q. Just to clarify, did you submit an expert report or a rebuttal report?

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[1] Defendant supplemented its belated disclosure with an affirmative expert report. *See* Exhibit B – Redacted Copy of Dr. Paul W. Hruz's Expert Report. Pursuant to Section IV of the Stipulated Protected Order in this case (Docket No. 72), Plaintiff has filed redacted copies of Exhibits B, D and E in order to protect "protected health information." Unredacted copies of these exhibits will be filed with the Court under seal.

> A. An -- an expert opinion report. And I also submitted -- you requested information from prior litigation, and that included a rebuttal report.
>
> Q. Okay. So you know the difference between a rebuttal report and an expert report?
>
> A. Yes, I do.
>
> Q. Okay. And the -- it is your understanding that the report that you submitted in this case is an expert report, not a rebuttal report?
>
> A. That's my understanding. Again, I would rely on the legal counsel to -- to clarify if I'm in error there.

Hruz Depo. Tr. 90:1-90-14 (Excerpts of the deposition of Dr. Paul W. Hruz are attached hereto as Exhibit C). In so doing, Dr. Hruz candidly admitted that he submitted an *affirmative* expert report and ***not*** a rebuttal report. If his admission were not enough, the Court simply needs to compare his purported "rebuttal" expert report in this case to his nearly *identical* affirmative expert reports and declarations in other cases. *Compare* Ex. B – Hruz's Expert Report, *with* Expert Declaration of Paul W. Hruz, M.D., Ph.D., *Whitaker v. Kenosha Unified Sch. Dist. No. 1 Bd. of Educ.*, No. 16-CV-943-PP (E.D. Wis. Apr. 26, 2017 (A redacted copy of which is attached as Exhibit D); *and* Expert Decl. of Paul W. Hruz, M.D., Ph.D., *Carcaño v. McCrory*, No. 1:16-cv-00236-TDS-JEP (M.D. N.C. Oct. 18, 2016) (Docket No. 173-6). *See also* Exhibit E – Redacted Copy of Redline Comparison of Dr. Hruz's Expert Rebuttal Report in *Adams* and Affirmative Expert Report in *Whitaker*. Dr. Hruz knows how to prepare a rebuttal report, as he has done so in other cases and knows the difference between the two.

Important here, Dr. Hruz's report provides no specific opinions as to Plaintiff Drew Adams and addresses the expert report of Dr. Adkins only once.[2] Dr. Hruz has been emphatic that his purported expert testimony and opinion is general in nature, and provides generalized opinions rather than any specific rebuttal to the opinions offered by Plaintiff's experts. *See* Hruz Depo. Tr. 47:20-47:22 ("Q. Would you agree that those opinions are general in nature and not specific to Drew Adams? A. Yes."). For these reasons, Dr. Hruz should have been disclosed as an affirmative expert, but was not.

**C. Dr. Hruz's Untimely And Improperly Disclosed Testimony And Report Must Be Excluded.**

Under Rule 37(c)(1), if a party fails to comply with these disclosure requirements, "the party is not allowed to use that . . . witness to supply evidence on a motion, at a hearing, or at a trial, unless the failure was substantially justified or is harmless." Fed. R. Civ. P. 37(c)(1). "Rule 37(c)(1) is a self-executing sanction, and the motive or reason for the failure is irrelevant." *Norden v. Samper*, 544 F. Supp. 2d 43, 49–50 (D.D.C. 2008). "The burden of establishing that a failure to disclose was substantially justified or harmless rests on the nondisclosing party." *Mitchell v. Ford Motor Co.*, 318 Fed. Appx. 821, 824 (11th Cir. 2009). "The overwhelming weight of authority is that preclusion is *required* and *mandatory* absent some unusual or extenuating circumstances—that is, a substantial justification." *Blake v.*

[2] *See* Hruz Depo. Tr. 46:23-47:6 ("Q. Is there any opinion specific as to Drew Adams in Paragraph 12? A. No. Q. Is there any opinion specific as to Drew Adams anywhere else in the report? A. No. My opinions are based on -- near the end of my declaration, I specifically state the concerns in a -- in a general sense of all patients that are -- are faced with this particular condition."); Hruz Report at para. 33.

*Securitas Sec. Servs., Inc.*, 292 F.R.D. 15, 19 (D.D.C. 2013) (quoting *Elion v. Jackson*, No. 05–992, 2006 WL 2583694, at *1 (D.D.C. Sep. 8, 2006)) (cleaned up).

*First*, the untimely and improper disclosure of Dr. Hruz's purported expert testimony and report in this case is not justified. In its Scheduling and Case Management Order, this Court set a date of October 2, 2017 for the disclosure of expert witness testimony and a deadline of November 3, 2017 for the disclosure of rebuttal witness testimony. *See* Dkt. 59 at para. 4. Defendant has not offered—and it cannot—any excuse for its untimely disclosure of Dr. Hruz's admitted affirmative testimony.[3] There is simply no reason for why Defendant could not have disclosed Dr. Hruz as an expert witness on September 22, 2017, like it was supposed to do.

*Second*, Defendant's untimely and improper disclosure of Dr. Hruz is not harmless. The disclosure here was only 19 days before the close of fact discovery and 38 days before the start of trial in this case. This belated disclosure was prejudicial towards Plaintiff in several ways. For one, the belated disclosure of Dr. Hruz—an admitted, affirmative expert—prevented Plaintiff from providing expert rebuttal reports to his testimony. For another, this belated disclosure prevented Plaintiff from conducting the proper and exhaustive investigation

[3] Indeed, Dr. Hruz has a served as an expert witness in some of the same cases in which Dr. Josephson, Defendant's other purported expert witness, has also served. *See, e.g.*, *Carcaño v. McCrory*, No. 1:16-cv-00236-TDS-JEP (M.D. N.C. 2016). What is more, Dr. Hruz and Dr. Josephson first met and became experts for school districts that discriminate against transgender children at a conference sponsored by the Alliance Defending Freedom. *See* Hruz Depo. Tr. 92:21-93:24. The Alliance Defending Freedom has been designated a "hate group" by the Southern Poverty Law Center for its anti-LGBT agenda and advocacy, including advocating for state-sanctioned sterilization of transgender people. *See* Southern Poverty Law Ctr., *Extremist Groups: Alliance Defending Freedom* (2017), *available at*, https://www.splcenter.org/fighting-hate/extremist-files/groups (last accessed Dec. 4, 2017).

of Dr. Hruz's background, expertise, and opinions that Plaintiff would have conducted had he been timely disclosed on September 22, 2017. *See Brown v. NCL (Bahamas) Ltd.*, 190 F. Supp. 3d 1136, 1143 (S.D. Fla. 2016) ("Rule 26 . . . is intended to provide opposing parties reasonable opportunity to prepare for effective cross examination and perhaps arrange for expert testimony from other witnesses.") (cleaned up). For example, Plaintiff has been able to identify a couple of individuals with whom Dr. Hruz claims to have spoken about the treatment of transgender patients. However, Plaintiff was able to speak with some of these individuals, but only *after* Dr. Hruz's deposition. At this point, it is impossible to tell what other information Plaintiff would have discovered had he been afforded the additional 42 days to investigate Dr. Hruz's background, claims, and opinions.

Because Dr. Hruz's testimony and report were not timely disclosed, the Court should join the multiple courts across the country that have disallowed the introduction of such untimely testimony and opinions. *See Bowman v. Int'l Bus. Mach. Corp.*, No. 1:11-CV-0593-RLY-TAB, 2012 WL 6596933, at *7 (S.D. Ind. Dec. 18, 2012), *objections overruled*, No. 1:11-CV-0593-RLY-TAB, 2013 WL 1857192 (S.D. Ind. May 2, 2013); *ProBatter Sports v. Joyner Tech., Inc.*, No. 05-CV-2045-LRR, 2007 WL 2752080, at *4 (N.D. Iowa Sept. 18, 2007) (striking large portions of an expert's affidavit that did not constitute true rebuttal after reaching the "inescapable conclusion []that [plaintiff was] attempting to circumvent the Scheduling Order by unilaterally redesignating [expert] from a rebuttal expert witness to a case in chief expert witness"); *In re Air Crash Disaster Near Kirksville, Mo.*, No. 05MD1702JCH, 2007 WL 2363505, at *4 (E.D. Mo. Aug. 16, 2007) (granting motion to strike where plaintiff attempted to use an expert who had been designated as a rebuttal witness to present evidence

to support its case-in-chief.); *GSI Group, Inc. v. Sukup Mfg. Co.*, No. 05-CV-3011, 2007 WL 757818 (C.D. Ill. Mar. 8, 2007) (striking expert opinions raised only in rebuttal reports); *Continental Cas. Co. v. St. Paul Fire & Marine Ins. Co.*, No. 04-CV-1866-D, 2006 WL 2506957 (N.D. Tex. Aug. 15, 2006) (expert opinions supporting affirmative defense should have been included in initial expert report); *STS Software Sys., Ltd.*, 2008 WL 660325, at *2 (granting motion to strike rebuttal expert report containing new opinions not discussed in initial expert reports); *Dickerson v. UPS*, No. 95-CV-2143-D, 1999 WL 222389 (N.D. Tex. Apr. 8, 1999) (prohibiting rebuttal opinions as to claim or defense for which the party bears the burden of proof); *Int'l Bus. Machs. Corp. v. Fasco Indus., Inc.*, No. C-93-20326 RPA, 1995 WL 115421, at *3 (N.D. Cal. Mar. 15, 1995).

Put simply, the Federal Rules "do not give license to sandbag one's opponent with claims and issues which should have been included in the expert witness' report." *Allgood v. Gen. Motors Corp.*, 2007 WL 647496, at *6 (S.D. Ind. Feb. 2, 2007) (cleaned up). As such, Dr. Hruz's testimony, opinions, and expert report should be completely disregarded based on Defendant's thinly-veiled attempt to circumvent the Court's Case Management Order and Rule 26's requirements.

## II. DR. HRUZ'S PURPORTED EXPERT TESTIMONY SHOULD BE EXCLUDED BECAUSE IT DOES NOT MEET ANY OF THE INDICIA FOR ADMISSIBILITY UNDER *DAUBERT* AND THE FEDERAL RULES OF EVIDENCE.

In this case, Dr. Hruz's opinions and testimony lack any indicia of admissibility under *Daubert* and the Federal Rules of Evidence. Indeed, if this Court performs its traditional and rigorous gatekeeping role, Dr. Hruz should be excluded because he is not qualified to serve an

expert witness in this case, and his opinions and testimony are neither reliable nor probative of any of the issues in this case.

**A. Legal Standard.**

Federal Rule of Evidence 702 governs the admissibility of expert testimony. Pursuant to *Daubert* and Rule 702, district courts must perform a "gatekeeping" role with respect to expert scientific testimony and must consider whether:

> (1) the expert is qualified to testify competently regarding the matters he intends to address; (2) the methodology by which the expert reaches his conclusions is sufficiently reliable as determined by the sort of inquiry mandated in *Daubert*; and (3) the testimony assists the trier of fact, through the application of scientific, technical, or specialized expertise, to understand the evidence or to determine a fact in issue.

*United States v. Frazier*, 387 F.3d 1244, 1260 (11th Cir. 2004) (en banc), *cert. denied*, 544 U.S. 1063 (2005); *see also City of Tuscaloosa v. Harcros Chems., Inc.*, 158 F.3d 548, 562 (11th Cir. 1998), *cert. denied*, 528 U.S. 812 (1999). This is "rigorous inquiry" that district courts "must" perform. *Rink v. Cheminova, Inc.*, 400 F.3d 1286, 1291 (11th Cir. 2005).

When evaluating whether an expert's methodology is reliable, the Court considers, among other things:

> (1) whether the expert's theory can be and has been tested; (2) whether the theory has been subjected to peer review and publication; (3) the known or potential rate of error of the particular scientific technique; and (4) whether the technique is generally accepted in the scientific community.

*Frazier*, 387 F.3d at 1262. *See also Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 149–150 (1999); *Daubert*, 509 U.S. at 591, 593–594.

"The burden of laying a proper foundation for the admissibility of an expert's testimony is on the party offering the expert, and the admissibility must be shown by a preponderance of

the evidence." *Hall v. United Ins. Co. of America*, 367 F.3d 1255, 1261 (11th Cir.2004) (citation omitted). "The admission of expert testimony is a matter within the discretion of the district court." *Rembrandt Vision Techs., L.P. v. Johnson & Johnson Vision Care, Inc.*, 282 F.R.D. 655, 665–66 (M.D. Fla. 2012), *aff'd*, 725 F.3d 1377 (Fed. Cir. 2013). However, because "expert evidence can be both powerful and misleading because of the difficulty in evaluating it," "the judge in weighing possible prejudice against probative force under Rule 403 . . . exercises *more* control over experts than over lay witnesses." *Daubert*, 509 U.S. at 595 (cleaned up).

**A. Dr. Hruz Is Not Qualified To Offer An Expert Opinion On Any Issue In This Case.**

It is axiomatic that "[A] witness may be qualified as an expert by virtue of his 'knowledge, skill, experience, training, or education." *Quiet Technology DC-8, Inc. v. Hurel-Dubois UK Ltd.*, 326 F.3d 1333, 1342 (11th Cir. 2003). However, credentials are not dispositive when determining qualification. "Expertise in one field does not qualify a witness to testify about others." *Lebron v. Secretary of Florida Dept. of Children and Families*, 772 F.3d 1352, 1368 (11th Cir. 2014) (holding that a psychiatrist was properly prevented from opining on rates of drug use in an economically vulnerable population because he had never conducted research on the subject, and instead relied on studies to form his opinion). "A scientist, however well credentialed he may be, is not permitted to be the mouthpiece of a scientist in a different specialty." *Id.* (quoting *Dura Automotive Systems of Indiana, Inc. v. CTS Corp.*, 285 F.3d 609, 614 (7th Cir. 2002)). If a proposed expert witness does not "propose to testify about matters growing naturally and directly out of research he had conducted

independent of the litigation," such expert should be disqualified. *Lebron*, 772 F.3d at 1369 (quoting Fed. R. Evid. 702 (cleaned up)).

Dr. Hruz is an Associate Professor of Pediatrics in the Division of Pediatric Endocrinology and Diabetes at Washington University School of Medicine in St. Louis. He is proffered as an expert witness based on his study of "existing literature related to the incidence, potential etiology and treatment of gender dysphoria." Hruz Report, para. 7. Translated, it appears to mean that he has read some things about it. Dr. Hruz admits that he has not treated any transgender patients, patients with gender dysphoria, conducted peer-reviewed research about gender identity, transgender people, or gender dysphoria; and is not a psychiatrist, a psychologist, nor mental health care provider of any kind, who could speak knowledgeably about the effects of Defendant's discriminatory policy on transgender students, let alone Plaintiff.

Dr. Hruz has ***never*** treated a patient with gender dysphoria or a transgender patient. *See* Hruz Report para. 8; Hruz Depo. Tr. 24:11-24:14 ("I intentionally do not treat transgender patients. Q. At all? A. That is correct."); *id.* at 25:20-25:23 ("Q. Okay. And based on your testimony, would you agree that you have not treated any transgender patients for gender dysphoria? A. Yes, I would agree."). Dr. Hruz has also not sat in on a meeting with a patient discussing the treatment options for gender dysphoria. *See* Hruz Depo. Tr. At 40:6-40:11 ("Q. Just to be clear, though, you have never sat in a meeting between a provider and a patient discussing their treatment options for gender dysphoria? A. That is correct, I've never been in the room with a patient while that care is being discussed."). It appears that rather than do, Dr. Hruz reads. But that does not qualify him as an expert in gender dysphoria or anything else

frankly. *See* Exhibit F – Declaration of Dr. Norman P. Spack, M.D. at ¶ 14 ("In my experience, someone who acts out of science would go and see how gender management clinics work in order to form their opinions.").[4]

Similarly, Dr. Hruz has not conducted any independent research about transgender youth or gender dysphoria, nor has he published peer-reviewed literature on this subjects. Hruz Depo. Tr. 61:17-64:7; *id.* at 295:19-295:23 ("Q. Have you published any peer-reviewed literature regarding gender dysphoria or transgender youth? A. These are questions that I've already answered, and the answer is no."). Instead, Dr. Hruz relies *solely* on his review of studies for purposes of his expert opinion. As with the disqualified expert in *Lebron* who "reached his opinion instead by relying on studies," this is not a sufficient qualification to serve as an expert witness. *Lebron*, 772 F.3d at 1369.

And, Dr. Hruz is neither a psychiatrist, a psychologist, nor mental health care provider of any kind, who would be able to diagnose mental health conditions, such as gender dysphoria. Hruz Depo. Tr. 41:21-42:2 ("Q. Are you a licensed mental healthcare provider of any kind? A. I am not."); *id.* at 42:11-42:18 ("Q. As an endocrinologist, do you routinely diagnose conditions in the DSM-5? A. I -- I do not . . . I do not consider myself as a psychiatrist to making those diagnoses, no."). Thus, Dr. Hruz cannot provide any opinion on the diagnosis

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[4] Dr. Spack is an Associate Physician in Medicine at Boston Children's Hospital, the Co-Founder and Co-Director Emeritus of the Gender Management Service (GeMS) Program at Boston Children's Hospital, and an Associate Clinical Professor of Pediatrics at Harvard Medical School in Massachusetts. Spack Decl. ¶ 4. The first-of-its-kind program in the United States, GeMS provides comprehensive care to the unique group of gender nonconforming and transgender children and adolescents. *Id.* at ¶ 5. Since its founding, the GeMS Program has been replicated by over 60 similar programs at pediatric academic centers in North America, including the now Transgender Center at St. Louis Children's Hospital. *Id.* at ¶ 6.

and mental health care of gender dysphoria and has not and cannot offer any opinions on whether Drew has gender dysphoria or the validity of such a diagnosis.

Finally, Dr. Hruz's involvement as an "expert witness" in these cases dates back and originates to a conference by the Alliance Defending Freedom organized specifically to cultivate professional "experts" who would testify against the gender-affirmation of transgender people. *See* Hruz Depo. Tr. 92:21-93:24. As such, like the disqualified expert in *Lebron*, Dr. Hruz "developed his opinions expressly for purposes of testifying" in an area that he did not otherwise specialize in. *Lebron*, 772 F.3d at 1369.

Put simply, Dr. Hruz has no foundation of knowledge, skill, or experience necessary to serve as an expert on gender identity, the diagnosis of gender dysphoria, or the treatment paradigms for gender dysphoria, particularly mental health treatment. In other words, Dr. Hruz is "not qualified by background, training, or expertise to opine" about the effects of a policy prohibiting transgender people from using the sex-designated facilities consistent with their identity, such as Defendant's discriminatory policy. *Lebron*, 772 F.3d at 1369. Accordingly, Dr. Hruz is not qualified to serve as an expert witness in this case or opine on any of the factual issues presented by this case.

**B. Dr. Hruz's Report, Opinions, And Testimony Have No Relevance To This Case.**

Even though this case revolves around whether Defendant's bathroom policy unlawfully discriminates against transgender people, like Plaintiff, Dr. Hruz's Report fails to direct his report to the actual Plaintiff or issues relevant to this litigation. *See* Hruz Depo. Tr. 46:23-47:22. Specifically, Dr. Hruz has testified that he has no opinion on the ultimate issues in this case,

> Q. (By Mr. Gonzalez-Pagan) So you do not have any opinion as to whether the current policy should or should not be implemented at St. John's County School District?
>
> A. That would require me to have experience as a school administrator or making school policies, which I do not have that experience.

Hruz Depo. Tr. 254:13-254:19. Indeed, Dr. Hruz admits that Drew Adams is a post-pubertal transgender boy, that Drew Adams has been diagnosed with gender dysphoria, and that he has no basis to dispute whether Defendant's discriminatory restroom policy has caused distress, anxiety, or otherwise harmed Drew Adams. *See* Hruz Depo. Tr. 22:20-23:8; *id.* at 25:24-26:5; *id.* at 45:3-46:3.

Instead, Dr. Hruz focuses on his generalized opinions, *see* Hruz Depo. Tr. 47:20-47:22, regarding: "Desistance (i.e. reversion to gender identity concordant with sex) . . . as a desired goal"; the medical "[t]reatment of gender dysphoric children who experience persistence symptoms"; activities that "encourage[] or perpetuate[] transgender persistence"; Dr. Hruz's questioning the efficacy of standard treatments for gender dysphoria, generally such puberty blockers, hormone therapy, and surgery; purported desistence or persistence rates among children who suffer from gender dysphoria; and any discussion about "making informed consent" to medical treatments for gender dysphoria. Hruz Report at para. 28, 37, 39, 43, 46.[5]

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[5] Plaintiff submitted a motion in limine on these issues because they have no relationship to the case at bar. There is no dispute that Drew is transgender or that he was diagnosed with gender dysphoria. To dispute the latter point, Defendant is required to submit medical testimony and evidence, but both of its experts acknowledge that they do not dispute the

None of these "opinions" have a relationship to the actual case being tried, meaning whether Defendant's policy excluding Plaintiff, a transgender boy, from using the restroom associated with his gender identity is discriminatory and whether that policy has harmed Plaintiff. Dr. Hruz candidly admits he is neither a school administrator nor a mental health provider of any kind (Hruz Depo. Tr. 87:3-87:25), and his generalized views on transitioning and the medical treatments for gender dysphoria simply have no application here.

*In the first instance*, Dr. Hruz's testimony about desistance is entirely irrelevant to this case. Hruz Report, para. 28, 39. The persistence or desistence rates of gender dysphoria in children in general has no bearing on Plaintiff's specific gender dysphoria diagnosis, or whether Plaintiff is transgender. Even assuming *arguendo* that some children with gender dysphoria ultimately identify with a gender that matches their birth sex at the end of adolescence, that is not the case here. That is not Drew's situation and has no bearing on his diagnosis of gender dysphoria or his transgender status. Dr. Hruz admits as much. Hruz Depo. Tr. 189:25-190:4 ("A. Drew Adams was also a late onset gender dysphoric individual, and that is a population that was not covered in these studies, and there is no evidence as to what the outcome is in those individuals."). Nor does it make the School Board's policy less discriminatory. It is undisputed that there are transgender children and adolescents, so what is the relevance of this testimony? This testimony will not aid the trier of fact in deciding the ultimate issue: whether the School Board has engaged in unconstitutional and unlawful

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diagnosis. Although Plaintiff nonetheless argues these points in this motion, he believes that, for the reasons stated in the motion in limine, that evidence regarding these issues should be excluded from the case. *See* Docket No. 107.

discrimination against Plaintiff based on his sex and transgender status, a status that is not in question. The only plausible explanation is that Defendant wishes to cast doubt generally on the validity of a diagnosis of gender dysphoria, an issue not before this Court.

Second, Dr. Hruz's opinions about conversion/reparative therapy are irrelevant to this case and represent fringe views completely contrary the mainstream medical and scientific community in the United States. Dr. Hruz asserts that "[d]esistence . . . provides the greatest lifelong benefit and is the outcome in the majority of cases and should be maintained as a desired goal." Hruz Report, para. 68. These views are not supported by any major national or international medical association that speaks with authority on gender dysphoria treatment. *See King v. Governor of the State of New Jersey*, 767 F.3d 216, 221–22 (3d Cir. 2014) (noting the "reports, articles, resolutions, and position statements from reputable mental health organizations opposing" conversion/reparative therapy and that "[m]any of these sources emphasized that such efforts are ineffective and/or carry a significant risk of harm"); *Pickup v. Brown*, 740 F.3d 1208, 1223–24 (9th Cir. 2014) (noting "the well-documented, prevailing opinion of the medical and psychological community that [conversion/reparative therapy] has not been shown to be effective and that it creates a potential risk of serious harm to those who experience it" and noting the legislature reliance's on position statements, articles, and reports published by the following organizations: the American Psychological Association, the American Psychiatric Association, the American School Counselor Association, the American Academy of Pediatrics, the American Medical Association, the National Association of Social Workers, the American Counseling Association, the American Psychoanalytic Association, the American Academy of Child and Adolescent Psychiatry, and the Pan American Health

Organization."). Dr. Hruz admits that conversion/reparative therapy has been rejected as harmful by major medical organizations. Hruz Depo. Tr. 237:1-237:23.

What is more, Dr. Hruz's opinions on conversion/reparative therapy have no bearing on the question of whether the School Board has discriminated against Plaintiff on the basis of *his* sex or transgender status. By presenting gender dysphoria and transgender identity as something that is generally "abnormal" and must be "fixed," Dr. Hruz's testimony will only serve to prejudice the Court against Plaintiff by casting doubt on his diagnosis and identity, two things that are not and cannot be disputed. Again, Dr. Hruz has conceded that he is not offering opinions on either Drew's transgender status or his diagnosis with gender dysphoria. Hruz Depo. Tr. 25:24-26:5; *id.* at 23:4-23:8. The underlying causes or most effective treatments for gender dysphoria are not before this Court. It is not the role of the School Board to question their students' medical diagnoses or argue that the prescribed treatment – including social transition and access to restrooms corresponding to one's gender identity; indeed, even its own experts acknowledge they have no basis to do so.

*Third*, Dr. Hruz's opinion that puberty blockers and hormonal treatments pose risks to patients is highly irrelevant to this case, even though he openly concedes that his opinions regarding treatment for gender dysphoria are contrary to the applicable standards of care, clinical guidelines, and general medical consensus. Hruz Report, para. 37, 39, 41-44. Moreover, Dr. Hruz's provision of this care for other conditions, such as precocious puberty, notwithstanding his "concerns" completely undermine this line of testimony. Hruz Depo. Tr. 232:20-233:19. And notwithstanding, Dr. Hruz's assertions regarding medical treatment for gender dysphoria, even if true (which they are not), have no bearing on the present case as

Plaintiff has already been through years of psychological evaluation and treatment by multiple doctors in multiple states. The list of medical professionals treating Plaintiff does not include Dr. Hruz; and he has ever, by his own admission, treated or consulted with Plaintiff. *See* Hruz Depo. Tr. 17:9-18:2; *id.* at 46:23-47:22.

Put simply, Dr. Hruz's opinions are based on nothing more than the "subjective belief or unsupported speculation" found insufficient in *Daubert*. *Daubert*, 509 U.S. at 589-590. In other words, Dr. Hruz lacks knowledge "of facts which enable him to express a reasonably accurate conclusion as opposed to conjecture or speculation." *Jones v. Otis Elevator Co.*, 861 F.2d 655, 662 (11th Cir. 1988). Therefore, Dr. Hruz's opinions regarding the medical treatment for gender dysphoria generally, let alone for Plaintiff, are irrelevant to this case as he have no basis on which to question Plaintiff's diagnosis or any treatments he has received, and this is not a case about the propriety of Plaintiff's medical treatment.

**C. Dr. Hruz's Report, Opinions, And Testimony Are Unreliable.**

As a general rule, an expert's testimony should only be admitted if it is sufficiently reliable. An expert's reliability "concerns whether the reasoning or methodology underlying the testimony is scientifically valid and whether that reasoning or methodology properly can be applied to the facts in issue." *Seamon v. Remington Arms Co., LLC*, 813 F.3d 983, 988 (11th Cir. 2016) (quoting *Daubert*, 509 U.S. at 592-93). In making this determination the court can consider a variety of factors, including whether the purported expert's theory has been tested, whether it has been subjected to peer review and publication, and whether the theory has been generally accepted in the scientific community. *See Daubert*, 509 U.S. at 593-94; *Rink*, 400 F.3d at 1292. As such, courts must assess "whether the evidence is genuinely

scientific, as distinct from being unscientific speculation offered by a genuine scientist." *Chapman v. Procter & Gamble Distributing, LLC*, 766 F.3d 1296, 1306 (11th Cir. 2014). "In evaluating the reliability of an expert's method . . . a district court may properly consider whether the expert's methodology has been contrived to reach a particular result." *Rink*, 400 F.3d at 1293, n.7.

Here, Dr. Hruz's testimony is based on nothing more than rank speculation, "untested" theories, uncorroborated anecdotes, assumptions that are obsolete, flawed, unethical, and expressed opinions based upon "unsettled science"; his opinions lack the markers of reliability necessary for them to be admitted as expert testimony. Dr. Hruz has conducted no studies or research or employed any methodology or scientific basis to reach any of his opinions. Hruz Depo. Tr. 61:17-64:7; *id.* at 295:19-295:23. His opinions regarding transgender people, as he admits, are contrary and squarely at odds with the generally accepted opinions, guidelines, and standards of care of the medical and scientific community. Hruz Depo. Tr. 58:21-61:9. His opinions on major topics, such as treatment protocols, have been rejected by every legitimate authority in the areas of gender dysphoria and transgender healthcare including the American Medical Association, WPATH, the American Academy of Pediatrics, the American Psychological Association, the American Psychiatric Association, the Endocrine Society, and the Pediatric Endocrine Society.

Put simply, Dr. Hruz's opinions in this case are decidedly not scientific and represent a fringe viewpoint – this Court should exclude his testimony.

**D. Dr. Hruz's Report, Opinions, And Testimony Are Tainted By His Personal Bias.**

While Plaintiff is cognizant that bias in an expert witness's testimony is usually an issue for the jury, *Adams v. Lab. Corp. of Am.*, 760 F.3d 1322, 1332 (11th Cir. 2014), this case is a bench trial and the Court has indicated that it will decide *Daubert* motions after trial. Here, there is ample evidence that Dr. Hruz's testimony is permeated and tainted by his unscientific views and personal bias. *See Sanchez v. Esso Standard Oil de Puerto Rico, Inc.*, No. CIV 08-2151, 2010 WL 3809990, at *4 (D.P.R. Sept. 29, 2010).

More specifically, Dr. Hruz appears to have lied about the nature of his conversations with the parent of transgender child in 2013 as well as his conversation with Dr. Norman Spack, a noted pediatric endocrinologist and the co-founder of Boston Children's Hospital Gender Management Service (GeMS) Program. Specifically, Dr. Hruz testified that he discussed about Dr. Spack the level of scientific evidence for the use of puberty blockers. Hruz Depo. Tr. 277:8-280:17. But Dr. Spack directly contradicts Dr. Hruz's description of this conversation. Contrary to Dr. Hruz's assertions, Dr. Spack avers that "Dr. Hruz did not discuss or mention that his issues or concerns were based on science." Spack Decl. ¶ 13. To the contrary, Dr. Hruz expressed to Dr. Spack that he had "a significant problem with the entire issue" and "whole idea of transgender," and that for him, it was "a matter of [his] faith." *Id.* at ¶¶ 11-12.

Similarly, Dr. Hruz misrepresented the nature of his conversation with Kim Hutton, the mother of a transgender child, in 2013. *See* Hruz Depo. Tr. 102:24-103:9; *id.* at 126:12-129:25. For example, Dr. Hruz has testified that when he met with the parent of transgender child who was affiliated with an organization called TransParent, he was in a "very early investigative phase" of his so-called study of gender dysphoria. Hruz Depo. Tr. 103:25-104-7; *id.* at 102:24-

103:9 ("A. Again, this was at the very early time frame when I was trying to investigate the claims for the treatment and care, and I wanted to get as comprehensive of a viewpoint as I could."). However, the nature of Dr. Hruz's conversation with Ms. Hutton revealed that his opposition to gender-affirming care and treatment of transgender children, as well as his opposition to a having a Transgender Center at St. Louis Children's Hospital, was already firmly established and is rooted in his personal moral and religious views.[6] Here, Dr. Hruz told Ms. Hutton, "there will never be a pediatric gender center at St. Louis Children's Hospital. I won't allow it," Hutton Depo Tr. 30:8-30:11, at a time when he claims he was "very early" in his investigation of gender dysphoria, Hruz Depo. Tr. 103:25-104:7; *id.* at 102:24-103:9 (Excerpts of the deposition of Kim Hutton are attached hereto as Exhibit G). Similarly, during his investigatory conversation with Ms. Hutton, Dr. Hruz told Ms. Hutton multiple times that her "child was not normal and would never be normal," Hutton Depo. Tr. 28:20-28:23; that "the idea of doing surgeries on transgender people is -- is wrong," *id.* at 21:21-27:24; and told Ms. Hutton "to read Pope John Paul IIs writings on gender," *id.* at 29:17-29:20. And in response to Ms. Hutton's statement that transgender children, including hers, "are at a 41 percent risk of suicide if they don't have acceptance and -- and care from their parents and -- and if they don't get their medical needs met," Dr. Hruz responded that, "Some children are born in this world to suffer and die." Hutton Depo. Tr. 29:21-30:4. As a result, Ms. Hutton left her conversation with Dr. Hruz—a conversation Dr. Hruz testifies he "was approaching

[6] Plaintiff does not seek to impugn or malign whatever moral or religious views Dr. Hruz may hold. However, to the extent that Dr. Hruz's moral and religious views have influenced his purported expert testimony and opinions—indeed, they seem to be a motivating factor for his testimony—that is something the Court must be aware of and should consider.

this in a purely investigative manner" to learn about the "lived experience" of transgender children and their families, Hruz Depo. Tr. 126:16-127:3—"perplexed" due to "the religious tone of the conversation," which she "figured [] would at least be based on science." Hutton Depo. Tr. 37:11-37:19.

The bias illuminated by Dr. Spack's declaration and Ms. Hutton's testimony is further confirmed by the nature of Dr. Hruz's publications and presentations on this issue. Hruz Depo. Tr. 85:11-85:20. For one, Dr. Hruz's *one and only* publication on this issue was published in *The New Atlantis*, a publication of the Ethics and Public Policy Center—an "institute dedicated to applying the Judeo-Christian moral tradition to critical issues of public policy." Ethics and Public Policy Ctr., *About EPPC, available at* https://eppc.org/about/ (last accessed Dec. 5, 2017). And Dr. Hruz's presentation on this topic, as recently as November 17, 2017, was at the Saint John Paul II Bioethics Center at the Holy Apostles College & Seminary. Hruz Depo. Tr. 83:5-85:20. In that presentation, Dr. Hruz referred to being transgender as something that "probably goes back to some of the early heresies in the church." *Id.* at 84:6-84:16. Dr. Hruz also referred to pictures of transgender people as "disturbing." *Id.* at 85:4-85:10. When confronted with these statements, Dr. Hruz did not disavow or deny making them. *Id.*

The foregoing, coupled with Dr. Hruz's departure with generally accepted medical and scientific standards, demonstrates that Dr. Hruz's purported expert testimony lacks any indicia of reliability. To be sure, the Federal Rules of Evidence state that "[e]vidence of a witness's religious beliefs or opinions is not admissible to attack or support the witness's credibility." Fed. R. Evid. 610. But the Advisory Committee Notes to Federal Rule of Evidence 610 make absolutely clear that "an inquiry for the purpose of showing interest or bias because of them is

not within the prohibition." Advisory Committee Notes to Fed. R. Evid. 610. Indeed, "[w]ithout this critical information," the Court would be "deprived of the necessary facts from which it could appropriately draw inferences about [Dr. Hruz's] reliability." *State v. Heinz*, 3 Conn. App. 80, 93, 485 A.2d 1321, 1328 (Conn. App. 1984). Here, it is clear that Dr. Hruz has not been candid regarding his experiences or the bases for his "opinions." The record evidence demonstrates a clear bias by Dr. Hruz against transgender people generally, which infects his reliability as a purported expert witness in this case.

**E. Dr. Hruz's Report, Opinions, And Testimony Lack Probative Value And Are Thus Inadmissible Under Federal Rule Of Evidence 403.**

Finally, the Court should exclude evidence if its introduction will result in unfair prejudice, confusion of the issues, or result in misleading testimony. Fed. R. Evid. 403. As noted above, Dr. Hruz offers no opinions on any factual dispute in this case, and, in any event, the opinions he offers are irrelevant and wildly unreliable. Thus, consideration of Dr. Hruz's testimony would waste time and create confusion. The testimony would also result in prejudice, as the testimony seeks to sow confusion about Plaintiff's gender identity when he has performed no examination of Plaintiff and cannot render any opinions about Drew. Accordingly, Dr. Hruz's testimony also fails to satisfy the requirements of Federal Rule of Evidence 403 and should be excluded.

## CONCLUSION

WHEREFORE, based on the foregoing, Plaintiff respectfully requests that the Court grant the instant motion and exclude Dr. Hruz's purported expert testimony because: (1) it was untimely and improperly disclosed, and (2) it does not meet any of the indicia for admissibility

under *Daubert* and the Federal Rules of Evidence. Accordingly, the Court should exclude Dr. Hruz's report, opinions, and testimony in full.

**CERTIFICATE OF CONFERENCE PURSUANT TO LOCAL RULE 3.01(g)**

Pursuant to 3.01(g) of the Local Rules of the Middle District of Florida, the undersigned certifies that he has conferred with the attorneys representing Defendant regarding the relief requested in the motion. The parties were unable to reach a resolution and Defendant's counsel does not consent to the relief requested.

Dated this 6th of December, 2017.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that on December 6, 2017, the foregoing motion was filed electronically using the Court's ECF system, which will provide electronic notice to all counsel of record, including:

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# EXHIBIT A

**UNITED STATES DISTRICT COURT**
**MIDDLE DISTRICT OF FLORIDA**
**JACKSONVILLE DIVISION**

**DREW ADAMS, a minor, by and through his next friend and mother, ERICA ADAMS KASPER,**

**Plaintiff,**

**Case No.: 3:17-cv-00739-TJC-JBT**

**v.**

**THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA,**

**Defendant.**
_____/

**DEFENDANT'S RULE 26 (a)(2)(A) EXPERT DISCLOSURE**

Defendant, **The School Board of St. Johns County, Florida**, by and through its undersigned counsel, hereby serves its expert disclosure pursuant to Rule 26 (a)(2)(A) of the Federal Rules of Civil Procedure. The name, address and telephone number of the expert witness who may be used by Defendant is as follows:

**Allan M. Josephson, M.D.**
**200 East Chestnut Street**
**Louisville, KY 40202**
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Attached to this disclosure is the information required by Rule 26 (a)(2)(B)(i) through (vi) of the Federal Rules of Civil Procedure.

Dated this 2nd day of October, 2017.

Respectfully submitted,

*/s/ Michael P. Spellman*
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*Counsel for Defendant, St. Johns County School Board*

**CERTIFICATE OF SERVICE**

The undersigned certifies that on this 2nd day of October, 2017, a true and correct copy of the foregoing was served via-electronic mail to Plaintiff's counsel of record.

*/s/ Michael P. Spellman*
**MICHAEL P. SPELLMAN**

**UNITED STATES DISTRICT COURT**
**MIDDLE DISTRICT OF FLORIDA**
**JACKSONVILLE DIVISION**

**DREW ADAMS, a minor, by and through his next friend and mother, ERICA ADAMS KASPER,**

**Plaintiff,** **Case No.: 3:17-cv-00739-TJC-JBT**

**v.**

**THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA,**

**Defendant.**
**_____/**

**DEFENDANT'S RULE 26 (a)(2)(A) REBUTTAL EXPERT DISCLOSURE**

Defendant, **The School Board of St. Johns County, Florida**, by and through its undersigned counsel, hereby serves its expert disclosure pursuant to Rule26(a)(2)(A) of the Federal Rules of Civil Procedure. The name, address and telephone number of the expert witnesses who may be used by Defendant is as follows:

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Attached to this disclosure is the information required by Rule 26 (a)(2)(B)(i) through (vi) of the Federal Rules of Civil Procedure.

Dated this 3rd day of November, 2017.

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*Counsel for Defendant, St. Johns County School Board*

**CERTIFICATE OF SERVICE**

The undersigned certifies that on this 3rd day of November, 2017, a true and correct copy of the foregoing was served via-electronic mail to Plaintiff's counsel of record.

/s/ *Michael P. Spellman*
**MICHAEL P. SPELLMAN**

# EXHIBIT B

**UNITED STATES DISTRICT COURT**
**FOR THE MIDDLE DISTRICT OF FLORIDA**
**JACKSONVILLE DIVISION**

DREW ADAMS, a minor, by and through his next friend and mother, ERICA ADAMS KASPER,

*Plaintiff*,

v.

THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA,

*Defendant*.

Civil Action No. 3:17-cv-00739-TJCJBT

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**EXPERT DECLARATION of Paul W Hruz, M.D., Ph.D**

1. I have been retained by counsel for Defendants as an expert in connection with the above-captioned litigation. I have actual knowledge of the matters stated in this declaration. My professional background, experience, and publications are detailed in my curriculum vitae, a true and accurate copy which is attached as Exhibit A to this declaration.

2. I received my doctor of philosophy degree from the Medical College of Wisconsin in 1993. I received my medical degree from the Medical College of Wisconsin in 1994. I am an Associate Professor of Pediatrics in the Division of Pediatric Endocrinology and Diabetes at Washington University School of Medicine. I also have a secondary appointment as Associate Professor of Cellular Biology and Physiology in the Division of Biology and Biological Sciences at Washington University School of Medicine. I served as chief of the Division of Pediatric Endocrinology and Diabetes at Washington University from 2012-2017. I served as the

Director of the Pediatric Endocrinology Fellowship Program at Washington University from 2008-2016.

3. I am board certified in Pediatrics and Pediatric Endocrinology. I have been licensed to practice medicine in Missouri since 2000.

4. My professional memberships include the American Academy of Pediatrics, the Pediatric Endocrine Society, the Endocrine Society, and the American Association for Biochemistry and Molecular Biology.

5. I have extensive experience in treating infants and children with disorders of sexual development and am an active member of the multidisciplinary Disorders of Sexual Development (DSD) program at Washington University. The DSD Team at Washington University is part of the DSD-Translational Research Network, a national multi-institutional research network that investigates the genetic causes and the psychologic consequences of DSD.

6. In the nearly 20 years that I have been in clinical practice I have participated in the care of hundreds of children with disorders of sexual development. In the care of these patients, I have acquired expertise in the understanding and management of associated difficulties in gender identification.

7. In my role as the director of the Division of Pediatric Endocrinology at Washington University, I have extensively studied the existing literature related to the incidence, potential etiology and treatment of gender dysphoria as efforts were made to develop a Transgender clinic at Saint Louis Children's Hospital. I have participated in local and national meetings where the endocrine care of children with gender dysphoria has been discussed and debated. I have met individually with several pediatric endocrinologists, including Dr. Norman Spack, who have developed and led transgender programs in the United States. I have also met with parents of

children with gender dysphoria to understand the unique difficulties experienced by this patient population.

8. Pediatric patients referred to our practice for the evaluation and treatment of gender dysphoria are cared for by an interdisciplinary team of providers that includes a psychologist and pediatric endocrinologist who have been specifically chosen for this role based upon a special interest in this rare patient population. Due to serious concerns regarding the safety, efficacy, and ethics of the current treatment paradigm, I have not directly engaged in hormonal treatment of patients with gender dysphoria.

9. My opinions as detailed in this declaration are based upon my knowledge and direct professional experience in the subject matters discussed. The materials that I have relied upon are the same types of materials that other experts in my field of clinical practice rely upon when forming opinions on the subject. The documents that I have reviewed specifically related to this case are 1.) The first amended complaint for declaratory, injunctive, and other relief for Drew Adams, 2.) The plaintiff's first amended rule 26(a) disclosure and 3.) Drew Adams' medical records. A list of the published literature I have relied on is attached as Exhibit B to this declaration.

10. Over my career, I have provided expert medical record review and testified at deposition in less than a dozen cases. Related to the litigation of issues of sex and gender, I have been designated as an expert witness in *Joaquín Carcaño et al vs. Patrick Mccrory, Jane Doe vs Board of Education of the Highland School District*, and *Ashton Whitaker vs. Kenosha Unified School District.* I have been deposed in the last of these cases. In the past 4 years I have also served as an expert witness in *Dakota Humphrey vs. Stanley Block* and *Liston Ward et al. vs. Janssen Pharmaceuticals*. I have never testified at trial.

11. I am being compensated at an hourly rate for actual time devoted, at the rate of $350 per hour. My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I provide.

**Case Details**

[redacted]

**Basic Terminology**

13. Biological sex is a term that specifically refers to a member of a species in relation to the member's capacity to either donate (male) or receive (female) genetic material for the purpose of reproduction. This remains the standard definition that has been accepted and used by scientists, medical personnel, and society in general.

14. Gender, a term that had traditionally been reserved for grammatical purposes, is currently used to describe the psychologic and cultural characteristics of a person in relation to biological sex. Gender therefore exists in reference to societal perceptions, not biology.

15. Gender identity refers to a person's individual perception of being male or female.

16. Sexual orientation refers to a person's arousal and desire for sexual intimacy with members of the male or female sex.

**Human sexuality in relation to fundamental biology and observed variations**

17. Sex is genetically encoded at the moment of conception due to the presence of specific DNA sequences (i.e. genes) that direct the production of signals that influence the formation of bipotential gonad to develop into either a testis or ovary. This genetic information is normally present on X and Y chromosomes. Chromosomal sex refers to the normal complement of X and Y chromosomes (i.e. normal human males have one X and one Y chromosome whereas normal human females have two X chromosomes). Genetic signals are mediated through the activation or deactivation of other genes and through programmed signaling of hormones and cellular transcription factors. The default pattern of development in the absence of external signaling is female. The development of the male appearance (phenotype) depends upon active signaling

processes.

18. For members of the human species, sex is normatively aligned in a binary fashion (i.e., either male or female) in relation to biologic purpose. Medical recognition of an individual as male or female is typically made at birth according to external phenotypic expression of primary sexual traits (i.e., presence of a penis for males and presence of labia and vagina for females).

19. Due to genetic and hormonal variation in the developing fetus, normative development of the external genitalia in any individual differs with respect to size and appearance while maintaining an ability to function with respect to biologic purpose (i.e. reproduction). Internal structures (e.g. gonad, uterus, vas deferens) normatively align with external genitalia.

20. Reliance upon external phenotypic expression of primary sexual traits is a highly accurate means to assign biologic sex. In over 99.9% of cases, this designation will correlate with internal sexual traits and capacity for normal biologic sexual function. Sex is therefore not "assigned at birth" but is rather recognized at birth.

21. Due the complexity of signals that are involved in normal sexual development, it is not surprising that a small number of individuals are born with defects in this process. Defects can occur either through inherited or *de novo* mutations in genes that are involved in sexual determination or through environmental insults during critical states of sexual development. Persons who are born with such abnormalities are considered to have a disorder of sexual development (DSD). Most often, this is first detected as ambiguity in the appearance of the external genitalia.

22. Normal variation in external genital appearance (e.g. phallic size) does not alter the basic biologic nature of sex as a binary trait. "Intersex" conditions represent disorders of normal development, not a third sex.

23. Medical care of persons with DSDs is primarily directed toward identification of the etiology of the defect and treatment of any associated complications. Similar to other diseases, tools such as the Prader scale are used to stage the severity of the deviation from normal. In children with DSDs, characterization based upon phenotype alone does not reliably predict chromosomal sex nor does it necessarily correlate with potential for biological sexual function. Decisions on initial sex assignment in these rare cases require detailed assessment by a team of expert medical providers.

24. Standard medical practice in the treatment of persons with DSDs has evolved with growing understanding of the physical and psychologic needs and outcomes for affected individuals. Previously, it was felt that a definitive sex assignment was necessary shortly after birth with the belief that this would allow patients with DSDs to best conform to the assigned sex. Current practice is to defer sex assignment until the etiology of the disorder is determined and, if possible, a prediction can be made on likely biologic and psychologic outcomes. When this cannot be done with confidence, a presumptive sex assignment is made. Factors used in making such decisions include chromosomal sex, phenotypic appearance of the external genitalia, and parental desires. The availability of new information can in rare circumstances lead to sex reassignment. Decisions on whether to surgically alter the external genitalia to align with sex are generally deferred until the patient is able to provide consent.[1]

**Gender Dysphoria in relation to Biological Sex**

25. Although gender usually aligns with biological sex, some individuals experience discordance in these distinct traits. Specifically, biologic females may identify as males and biologic males may identify as females. As gender by definition is distinct from biological sex,

one's gender identity does not change a person's biological sex.

26. Individuals who experience significant distress due to discordance between gender identity and sex are considered to have "gender dysphoria".[2] Although the prevalence of gender dysphoria has not been established by rigorous scientific analysis, estimates reported in in the DSM-V are between 0.005% to 0.014% for adult males and 0.002% to 0.003% for adult females. Thus, gender dysphoria is a rare condition. It is currently unknown whether these estimates are falsely low due to under-reporting, or if changing societal acceptance of transgenderism and the growing number of medical centers providing medical intervention for gender dysphoria affects the number of persons who identify as transgender. Recent data indicates that the number of people seeking care for gender dysphoria is increasing with some estimates as high as 20-fold.[3,4]

27. There is strong evidence against the theory that gender identity is determined at or before birth and is unchangeable. This comes from identical twin studies where siblings share genetic complements and prenatal environmental exposure but have differing gender identities.[5]

28. Further evidence that gender identity is not fixed comes from established peer reviewed literature demonstrating that the vast majority (80-95%) of children who express gender dysphoria revert to a gender identity concordant with their biological sex by late adolescence.[6,7] It is not known whether individuals with gender dysphoria persistence have differing etiologies or severity of precipitating factors compared to desisting individuals.

[redacted]

30. The etiology of gender dysphoria in individuals with gender dysphoria remains to be identified. Theories include prenatal hormone exposure, genetic variation, and postnatal environmental influences. Based upon the currently available but incomplete dataset, it is likely that gender dysphoria is multifactorial with differing qualitative and quantitative influences in any given individual.

31. The recently coined concept of "neurological sex" as a distinct entity or a basis for classifying individuals as male or female has no scientific justification. Limited emerging data has suggested structural and functional differences between brains from normal and transgender individuals. These data do not establish whether these differences are innate and fixed or acquired and malleable. The remarkable neuronal plasticity of the brain is known and has been studied extensively in gender-independent contexts related to health and disease, learning and behavior.

**Gender Ideology**

32. The modern attempt to equate gender identity with sex is not based upon sound scientific principles but rather is based upon ideology fueled by advocacy. Although worldviews among scientists and physicians, similar to society at large, differ, science is firmly grounded in physical reality not perception. The inherent link between human sexual biology and teleology is self-evident and fixed.

33. The claims of proponents of transgenderism, which include opinions such as "Gender identity is the primary factor determining a person's sex" and "Gender is the only true determinant of sex" must be viewed in their proper philosophical context. There is no scientific basis for redefining sex on the basis of a person's psychological sense of 'gender'.

34. The prevailing, constant and accurate designation of sex as a biological trait grounded in the inherent purpose of male and female anatomy and as manifested in the appearance of external genitalia at birth remains the proper scientific and medical standard. Redefinition of the classification and meaning of sex based upon pathologic variation is not established medical fact.

**Potential Harm Related to Gender Dysphoria Treatments**

35. The fundamental purpose of the practice of medicine is to treat disease and alleviate suffering. An essential tenet of medical practice is to avoid doing harm in the process. Due to the frequent lack of clear and definitive evidence on how to best accomplish this goal, treatment approaches can and do frequently differ among highly knowledgeable, competent, and caring physicians.

36. Persons with gender dysphoria as delineated in the DSM-V experience significant psychological distress related to their condition with elevated risk of depression, suicide, and other morbidities. Thus, attempts to provide effective medical care to affected persons are clearly warranted.

37. Efforts to effectively treat persons with gender dysphoria require respect for the inherent dignity of those affected, sensitivity to their suffering, and maintenance of objectivity in assessing etiologies and long-term outcomes. Desistance (i.e. reversion to gender identity concordant with sex) provides the greatest lifelong benefit and is the outcome in the majority of patients and should be maintained as a desired goal. Any forced societal intervention that could interfere with the likelihood of gender dysphoria resolution is unwarranted and potentially harmful.

38. There is an urgent need for high quality controlled clinical research trials to determine

ways to develop supportive dignity affirming social environments that maintain affirmation of biological reality. To date, three approaches have been proposed for managing children with gender dysphoria.[8] The first approach, often referred to as "conversion" or "reparative therapy", is directed toward actively supporting and encouraging children to identify with their biological sex. The second "neutral" approach, motivated by understanding of the natural history of transgender identification in children, is to neither encourage nor discourage transgender identification, recognizing that the majority of affected children if left alone will eventually realign their gender with their sex. The third "affirming" approach is to actively encourage children to embrace transgender identity with social transitioning followed by hormonal therapy.

39. The gender affirming approach, which includes use of a child's preferred pronouns, use of sex-segregated bathrooms, other intimate facilities and sleeping accommodations corresponding to a child's gender identity, has limited scientific support for short-term alleviation of dysphoria and no long-term outcomes data demonstrating superiority over the other approaches. Claims that the other approaches have been scientifically disproven are false. Decades of research, most notably the pioneering work of Dr. Kenneth Zucker, have supported the efficacy of a more conservative approach for the majority of patients experiencing gender dysphoria.[8,9]

40. Feelings of anxiety, depression, isolation, frustration, and embarrassment are not unique to children with gender dysphoria, but rather are common to children who differ physically or psychologically from their peers. Difficulties are accentuated as children progress through the normal stages of neurocognitive and social development. In the clinical practice of pediatric endocrinology, this is most commonly seen in children with diabetes. Attempts to deny or conceal the presence of disease rather than openly acknowledge and address specific needs can

have devastating consequences including death. With proper acknowledgment of the similarity and differences between children with gender dysphoria and other developmental challenges, prior experience can guide the development of effective approaches to both alleviate suffering and minimize harm to school aged children experiencing gender dysphoria.

41. The Endocrine Society published in 2009 clinical guidelines for the treatment of patients with persistent gender dysphoria.[10] The recommendations include temporary suppression of pubertal development of children with GnRH agonists (hormone blockers normally used for children experiencing precocious puberty) followed by hormonal treatments to induce the development of secondary sexual traits consistent with one's gender identity. This guideline was developed using the GRADE (Recommendations, Assessment, Development, and Evaluation) system for rating clinical guidelines. As directly stated in the Endocrine Society publication, "the strength of recommendations and the quality of evidence was low or very low." According to the GRADE system, low recommendations indicate "Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate". Very low recommendations mean that "any estimate of effect is very uncertain". An updated set of guidelines was published in September of 2017.[11] The low quality of evidence presented in this document persist.

42. Clinical Practice Guidelines published by the World Professional Association for Transgender Health (WPATH), which is currently in its 7th iteration, similarly, though less explicitly, acknowledge the limitation of existing scientific data supporting their recommendations given and "the value of harm-reduction approaches".

43. Treatment of gender dysphoric children who experience persistence of symptoms with hormones (pubertal suppression and cross-hormone therapy) carries significant risk. It is

generally accepted, even by advocates of transgender hormone therapy, that hormonal treatment results in sterility which in many cases is irreversible.[12] Emerging data also show that treated patients have lower bone density which may lead to increased fracture risk later in life.[13] Other potential adverse effects include disfiguring acne, high blood pressure, weight gain, abnormal glucose tolerance, breast cancer, liver disease, thrombosis, and cardiovascular disease.[14]

44. Since strategies for the treatment of transgendered children as summarized by the Endocrine Society guidelines are relatively new, long-term outcomes are unknown. Evidence presented as support for short term reductions in psychological distress following social transition in a "gender affirming" environment remains inconclusive. When considered apart from advocacy based agendas, multiple potential confounders are evident. The most notable deficiencies of existing research are the absence of proper control subjects and lack of randomization in study design. Although appropriate caution is warranted in extrapolating the outcomes observed from prior studies with current treatments, adults who have undergone social transition with or without surgical modification of external genitalia continue to have rates of depression, anxiety, substance abuse and suicide far above the background population.[15,16]

45. Evidence cited to support societal measures that promote or encourage gender transition, including the plaintiff's demand for use of multi-user sex-segregated restrooms corresponding with the plaintiff's gender identity, as a medically necessary treatment for gender dysphoria is limited. Recent studies reporting reductions in dysphoria following social transition of adolescent patients are small, poorly controlled and of insufficient duration to draw definitive conclusions regarding long-term efficacy. Long-term follow up of patients with gender dysphoria who have undergone social and hormonal transition with or without surgical intervention has

shown persistent psychological morbidity far above non-transgendered individuals with suicide attempts 7-fold and completed suicides19-fold above the general population.[15,16]

46. Of particular concern is the likelihood that forced societal affirmation including a requirement that the St. John's County School District allow students to use sex-segregated bathrooms corresponding to gender identity rather than access to single unit facilities, will interfere with known rates of gender resolution. Any activity that encourages or perpetuates transgender persistence for those who would otherwise desist can cause significant harm, particularly in light of the current treatment paradigm for persisting individuals. As noted, permanent sterility can be expected with hormonal or surgical disruption of normal gonadal function. This is particularly concerning given that children are likely incapable of making informed consent to castrating treatments.[17]

47. Dignity affirming support for adolescents with gender dysphoria does not necessitate facilitation of a false understanding of human sexuality in schools. Rather, policy requirements that can increase persistence of transgender identification have significant potential for inducing long-term harm to affected children.

48. There remains a significant and unmet need to better understand the biological, psychological, and environmental basis for the manifestation of discordance of gender identity and biological sex in affected individuals.[18] In particular, there is a concerning lack of randomized controlled trials comparing outcomes of youth with gender dysphoria who are provided mandated access to sex-segregated bathroom facilities corresponding with gender identity to youth provided single user facilities. This includes understanding of how forced public encouragement of social gender transition affects the usual progression to resolution of gender dysphoria in affected children. Such studies can be ethically designed and executed with

provision of other dignity affirming measures to both treatment groups. Without this scientific evidence, it is impossible to assert that the approach using sex-segregated bathrooms is an essential component of treatment.

49. Limitations on this report: My opinions and hypotheses in this matter are subject to the limitations of all documentary and related evidence, the impossibility of absolute prediction, as well as the limitations of social and medical science. I have not met with, nor interviewed, plaintiff Drew Adams. As always, I have no expert opinions regarding the veracity of witnesses in this case. I have not yet reviewed all of the evidence in this case and my opinions are subject to change at any time as new information becomes available to me. Only the trier of fact can determine the credibility of witnesses and how scientific research may or may not be related to the specific facts of any particular case. A key role of an expert witness is to help the court, lawyers, parties, and the public understand and apply reliable scientific, technical, and investigative principles, hypotheses, methods, and information. I have transmitted this confidential expert report directly to attorney Michael Spellman, for distribution as consistent with the relevant laws.

Pursuant to 28 U.S.C § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Date: Paul W Hruz

Signed: November 2, 2017

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

# Curriculum Vitae

## Paul W. Hruz, M.D., Ph.D.

Date: 10/18/2017 08:36 AM

### Personal Information

| | |
|---|---|
| Birthplace: | WI |
| Citizenship: | USA |

### Address and Telephone Numbers


| | |
|---|---|
| University: | Washington University in St. Louis<br>School of Medicine<br>Department of Pediatrics<br>Endocrinology and Diabetes<br>660 S. Euclid Ave.<br>St. Louis, MO 63110<br>Campus Box 8208<br><br>Phone: 314-454-6051<br>Fax: 314-286-2892<br>email: Hruz_P@wustl.edu |


### Present Positions

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

### Education and Training

| | |
|---|---|
| 1987 | BS, Chemistry, Marquette University, Milwaukee, WI |
| 1993 | PhD, Biochemistry, Medical College of Wisconsin, Milwaukee, WI |
| 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 |

### Academic Positions and 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 |
| 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 |
| 2016 - Pres | Researcher, Developmental Biology, Washington University in St. Louis, St. Louis, MO |

Exhibit A

## Appointments and Committees

### NIH Study Sections

| | |
|---|---|
| 2005 | NIH- NIDDK Special Emphasis Panel ZDK1 GRB-6 |
| 2009 | NIH- ACE Competitive Revisions ZRG1 AARR-H (95) S |
| 2009 | NIH- AIDS and AIDS Related Research IRG |
| 2011 | NIH- Pediatric Endocrinologist K12 ZDK1 GRB-C |
| 2014 | NIH- Special Empahsis Panel ZRG1 BBBPY 58 |
| 2014 | NIH- AIDS and AIDS Related Research IRG |
| 2015 | NIH- Cardiovascular and Respiratory Sciences Special Emphasis Panel ZDK1 GRB-J (02) |
| 2015 | NIH- NIDDK Special Emphasis Panel ZRG1 CVRS-Q (80) |
| 2016 | NIH Special Emphasis Panel ZRG1 AAR-M |
| 2016 | American Diabetes Association Research Grant Review Committee |

### Local Appointments

| | |
|---|---|
| 2017 - Pres | Board of the Catholic Medical Association, St. Louis Guild |

### University Affiliations

| | |
|---|---|
| 2008 - 2016 | Director, Pediatric Endocrinology & Diabetes Fellowship Program |
| 2010 - Pres | Pediatric Computing Facility Advisory Committee |
| 2012 - 2017 | Director, Division of Pediatric Endocrinology & Diabetes |
| 2012 - Pres | Disorders of Sexual Development Multidisciplinary Care Program |
| 2013 - Pres | Molecular Cell Biology Graduate Student Admissions Committee |
| 2014 - Pres | Research Consultant, ICTS Research Forum - Child Health |
| 2014 - Pres | Director, Pediatric Diabetes Research Consortium |

### Hospital Affiliations

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

### Thesis Committees (*Chair)

| | | |
|---|---|---|
| 2008 - 2011 | Kelly Diggs-Andrews | Simon Fisher |
| 2008 - 2010 | Irwin Puentes | Simon Fisher |
| 2008 - 2010 | Tony Frovola | Kelle Moley |
| 2009 - 2010 | Lauren Flessner | Kelle Moley |
| 2010 - 2012 | Katie Boehle | Kelle Moley |
| 2010 - 2013 | Candace Reno | Simon Fisher |
| 2011 - 2016 | Thomas Kraft | Paul Hruz |
| 2013 - 2015 | Chi Lun Pui | Audrey Odom |
| 2013 - 2016 | Leah Imlay | Audey Odom |
| 2014 - Pres | Anne Robinson | Katie Henzler-Wildman |
| 2015 - Pres | Allyson Mayer | Brian DeBosch |

### Scholarship Oversight Committees

| | |
|---|---|
| 2013 - 2016 | Brittany Knipsein (Advisor: David Rudnick) |
| 2016 - Pres | Pamela Smith (Advisor: Michael Whyte) |

## 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 |

**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

Editorial Boards

2014 - Pres Endocrinology and Metabolism Clinics of North America

**Professional Societies and Organizations**

1992 - 2004 American Medical Association
1994 - 2005 American Academy of Pediatrics
1995 - 2014 American Association for the Advancement of Science
1998 - Pres American Diabetes Association
1998 - Pres Endocrine Society
1999 - Pres Pediatric Endocrine Society
2004 - Pres American Society for Biochemistry and Molecular Biology
2004 - Pres Society for Pediatric Research
2004 - 2007 American Chemical Society
2005 - Pres Full Fellow of the American Academy of Pediatrics
2013 - Pres International Society for Pediatric and Adolescent Diabetes

**Major Invited Professorships and Lectures**

2002 St. Louis Children's Hospital, Pediatric Grand Rounds, 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 The Collaborative Institute of Virology, Complications Committee Meeting, Boston, MA
2005 University of Indiana, Endocrine Grand Rounds, Indianapolis, IN
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 Medical College of Wisconsin, MSTP Annual Visiting Alumnus Lecture, Milwaukee, WI
2007 St Louis Children's Hospital, Pediatric Grand Rounds, St Louis, MO
2007 University of Arizona, Minority Access to Research Careers Seminar, Tucson AZ
2008 Boston University, Division of Endocrinology, Diabetes and Nutrition, Boston, MA
2009 St Louis Children's Hospital, Pediatric Grand Rounds, St Louis, MO
2010 American Diabetes Association Scientific Sessions, Symposium Lecture Orlando, FL
2010 University of Missouri Kansas City, School of Biological Sciences, Kansas City, MO
2011 Life Cycle Management Advisory Board Meeting, Bristol-Myers Squibb, Chicago, IL.
2013 St Louis Children's Hospital, Pediatric Grand Rounds, St Louis MO
2013 St Louis Children's Hosptial CPU Lecture, St Louis MO
2014 Pediatric Academic Societies Meeting, Vancouver, Canada.
2014 American Diabetes Association 74th Scientific Sessions, San Francisco, CA.
2017 University of Michigan, Division of Pediatric Endocrinology Ann Arbor, MI.
2017 Napa Institute National Conference Napa, CA.
2017 Catholic Medical Association National Conference Denver, CO.

**Consulting Relationships and Board Memberships**

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

**Research Support**

**Non-Governmental Support**

(Hruz)
Gilead Pharma
Novel HIV Protease Inhibitors and GLUT4

MHI-2017-593 (DeBosch) 2/1/2017- 1/31/2020
CDI
Prevention And Treatment Of Hepatic Steatosis Through Selective Targeting Of GLUT8

**Completed Support**

II (Hruz) 2/1/2012- 1/31/2015
CDI
Solution-State NMR Structure and Dynamics of Facilitative Glucose Transport Proteins

R01 (Hruz) 9/20/2009- 5/31/2014
NIH
Direct Effects of Antiretroviral Therapy on Cardiac Energy Homeostasis
The goal of this project is to characterize the influence of antiretroviral therapies on myocardial energy homeostasis and to elucidate how these changes in substrate delivery adversely affect cardiac function in the stressed heart.

Research Program (Hruz) 6/1/2009- 5/31/2012
MOD
Regulation of GLUT4 Intrinsic Activity
The major goals of this project are to investigate the ability of the GLUT4 tethering protein TUG and an UBL-domain containing N-terminal fragment of this protein to alter the intrinsic activity of the insulin responsive facilitative glucose transporter, to determine whether protein ubiquitination influences this association, and to characterize the role of the GLUT4 binding site on the modulation of glucose transport.

R01 (Hruz) 4/1/2007- 1/31/2012
NIH
Mechanisms for Altered Glucose Homeostasis During HAART
The goal of this project is to identify the cellular targets of HIV protease inhibitors that lead to peripheral insulin resistance, impaired beta-cell function, and alterations in hepatic glucose production and to elucidate the molecular mechanisms of these effects.

R01 Student Supp (Hruz) 6/10/2009- 8/31/2011
NIH
Mechanisms for Altered Glucose Homeostasis During HAART
The goal of this project is to identify the cellular targets of HIV protease inhibitors that lead to peripheral insulin resistance, impaired beta-cell function, and alterations in hepatic glucose production and to elucidate the molecular mechanisms of these effects.

(Hruz) 3/9/2010- 6/8/2011
Bristol-Myers Squibb
Protective Effect of Saxagliptin on a Progressive Deterioration of Cardiovascular Function

II (Hruz) 2/1/2008- 1/31/2011
CDI
Insulin Resistance and Myocardial Glucose Metabolism in Pediatric Heart Failure

**Past Trainees**

| | |
|---|---|
| 2014 - 2014 | David Hannibal, Clinical Research Trainee |
| 2005 - 2005 | Dominic Doran, DSc, Postdoctoral Fellow<br>Study area: HIV Protease Inhibitor Effects on Exercize Tolerance |
| 2002 - 2010 | Joseph Koster, PhD, Postdoctoral Fellow<br>Study area: Researcher |
| 2010 - 2014 | Lauren Flessner, PhD, Postdoctoral Fellow<br>Present position: Instructor, Syracuse University |
| 2008 - 2011 | Arpita Vyas, MD, Clinical Fellow<br>Study area: Research<br>Present position: Assistant Professor, Michigan State University, Lansing MI |
| 2008 - 2009 | Candace Reno, Graduate Student<br>Study area: Research<br>Present position: Research Associate, University of Utah |
| 2005 - 2005 | Helena Johnson, Graduate Student |
| 2007 - 2008 | Kai-Chien Yang, Graduate Student<br>Study area: Research<br>Present position: Postdoctoral Research Associate, University of Chicago |
| 2007 - 2007 | Paul Buske, Graduate Student<br>Study area: Research |
| 2006 - 2006 | Ramon Jin, Graduate Student<br>Study area: Research |
| 2009 - 2009 | Stephanie Scherer, Graduate Student<br>Study area: Research |
| 2006 - 2006 | Taekyung Kim, Graduate Student<br>Study area: Research |
| 2008 - 2008 | Temitope Aiyejorun, Graduate Student<br>Study area: Research |
| 2011 - 2016 | Thomas Kraft, Graduate Student<br>Study area: Glucose transporter structure/function<br>Present position: Postdoctoral Fellow, Roche, Penzberg, Germany |
| 2005 - 2005 | Jeremy Etzkorn, Medical Student<br>Study area: Researcher |
| 2003 - 2004 | Johann Hertel, Medical Student<br>Study area: Research<br>Present position: Assistant Professor, University of North Carolina, Chapel Hill, NC |
| 2003 - 2003 | John Paul Shen, Medical Student<br>Study area: Research |
| 2007 - 2007 | Randy Colvin, Medical Student<br>Study area: Researcher |
| 2011 - 2011 | Amanda Koenig- High School Student, Other<br>Study area: Research |
| 2009 - 2009 | Anne-Sophie Stolle- Undergraduate Student, Other<br>Study area: Research |
| 2004 - 2005 | Carl Cassel- High School Student, Other<br>Study area: Research |
| 2004 - 2004 | Christopher Hawkins- Undergraduate Student, Other<br>Study area: Researcher |
| 2010 - 2010 | Constance Haufe- Undergraduate Student, Other<br>Study area: Researcher |
| 2010 - 2011 | Corinna Wilde- Undergraduate Student, Other<br>Study area: Researcher |
| 2008 - 2012 | Dennis Woo- Undergraduate Student, Other<br>Study area: Researcher<br>Present position: MSTP Student, USC, Los Angeles CA |
| 2007 - 2007 | Jan Freiss- Undergraduate Student, Other<br>Study area: Researcher |
| 2004 - 2004 | Kaiming Wu- High School Student, Other<br>Study area: Research |
| 2011 - 2012 | Lisa Becker- Undergraduate Student, Other |
| 2009 - 2009 | Matthew Hruz- High School Student, Other<br>Study area: Research<br>Present position: Computer Programmer, Consumer Affairs, Tulsa OK |
| 2011 - 2011 | Melissa Al-Jaoude- High School Students, Other |
| 2002 - 2002 | Nishant Raj- Undergraduate Student, Other<br>Study area: Researcher |
| 2010 - 2010 | Samuel Lite- High School Student, Other<br>Study area: Research |

**Clinical Responsibilities**

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

**Teaching Responsibilities**

| | |
|---|---|
| | Facilitator, Cell Biology Graduate Student Journal Club, 4 hour/year |
| | Facilitator, Discussion: Pituitary, Growth & Gonadal Cases, 2 hours/year |
| 2000 - Pres | Lecturer, Medical Student Growth Lecture (Women and Children's Health Rotation): Variable |
| 2000 - Pres | Lecturer, Metabolism Clinical Rounds/Research Seminar: Presentations twice yearly |
| 2000 - Pres | Lecturer, Pediatric Endocrinology Journal Club: Presentations yearly |
| 2009 - Pres | Lecturer, Markey Course-Diabetes Module |
| 2009 - Pres | Facilitator, Medical Student Endocrinology and Metabolism Course, Small group |
| 2009 - Pres | Facilitator, Biology 5011- Ethics and Research Science, 6 hours/year |
| 2016 - Pres | Facilitator, Medical Student Endocrinology and Metabolism Course, Small group |
| 2016 - Pres | Lecturer, Cell Signaling Course, Diabetes module, 3 hours/year |

**Publications**


1. Hruz PW, Narasimhan C, Miziorko 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, Miziorko 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, Miziorko 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, Miziorko 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, Miziorko 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
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# EXHIBIT C

UNITED STATES DISTRICT COURT
FOR THE
MIDDLE DISTRICT OF FLORIDA

| | | |
|---|---|---|
| DREW ADAMS, a minor, | ) | |
| | ) | |
| Plaintiff, | ) | |
| | ) | |
| vs. | ) | Civil Action |
| | ) | No.3:17-cv-00739-TJC-JBT |
| THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA, | ) | |
| | ) | |
| Defendant. | ) | |

VIDEOTAPED DEPOSITION OF PAUL W. HRUZ, M.D., Ph.D
Taken on behalf of Plaintiff
November 20, 2017
(Starting time of the deposition: 8:58 a.m.)

I N D E X O F E X A M I N A T I O N



INDEX OF EXHIBITS



(The original exhibits were retained by the court reporter, to be attached to Mr. Gonzalez-Pagan's transcript.)

UNITED STATES DISTRICT COURT
FOR THE
MIDDLE DISTRICT OF FLORIDA

| | | |
|---|---|---|
| DREW ADAMS, a minor, | ) | |
| | ) | |
| Plaintiff, | ) | |
| | ) | |
| vs. | ) | Civil Action |
| | ) | No.3:17-cv-00739-TJC-JBT |
| THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA, | ) | |
| | ) | |
| Defendants. | ) | |

VIDEOTAPED DEPOSITION OF WITNESS, PAUL W. HRUZ, M.D., Ph.D., produced, sworn, and examined on the 20th day of November, 2017, between the hours of nine o'clock in the forenoon and six o'clock in the evening of that day, at the offices of Veritext Legal Solutions, 515 Olive Street, Suite 300, St. Louis, Missouri before BRENDA ORSBORN, a Certified Court Reporter within and for the State of Missouri, in a certain cause now pending in the United States District Court for the Middle District of Florida, wherein Drew Adams, a minor, is the Plaintiff and The School Board of St. Johns County, Florida is the Defendant.

A P P E A R A N C E S

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IT IS HEREBY STIPULATED AND AGREED, by and between counsel for Plaintiffs and counsel for Defendants that the VIDEOTAPED DEPOSITION OF PAUL W. HRUZ, M.D., Ph.D., may be taken in shorthand by Brenda Orsborn, a Certified Court Reporter, and afterwards transcribed into typewriting; and the signature of the witness is expressly not waived.

* * * * *

VIDEOGRAPHER: Good morning. We're going on the record at 8:58 a.m. on Monday, November 20th, 2017. Please note that the microphones are sensitive and may pick up whispering and private conversations and cellular interference. Please turn off all cell phones or place them away from the microphones as they can interfere with the deposition audio. Audio and video recording will continue to take place unless all parties agree to go off the record.

This is Media Unit No. 1 of the video recorded deposition of Dr. Paul Hruz, taken by counsel for the Plaintiffs in the matter of Drew Adams versus the School Board of St. Johns County, Florida, filed in the United States District Court for the Middle District of Florida. This deposition is being held at Veritext Legal Solutions, located at 515 Olive Street in St. Louis, Missouri.

My name is Kimberlee Lauer from Veritext, and I'm the videographer. Our court reporter is Brenda Orsborn, also from Veritext. I am not authorized to administer an oath. I am not related to any party in this action. Nor am I financially interested in the outcome.

Counsel and all present in the room and everyone attending remotely will now please state your appearances and affiliations for the record, and if there are any objections to proceeding, please state them at the time of your appearance beginning, please, with the noticing attorney.

MR. GONZALEZ-PAGAN: Thank you. Omar Gonzalez-Pagan of Lambda Legal for the Plaintiff.

MS. RIVAUX: Good morning. Shani Rivaux with Pillsbury Winthrop Shaw Pittman, on behalf of the Plaintiff.

MR. KOSTELNIK: Good morning, Kevin Kostelnik of Sniffen & Spellman on behalf of the Defendant.

THE WITNESS: Paul Hruz --

MR. HARMON: And this is Terry Harmon on the phone, as well, for the Defendant.

THE WITNESS: And Paul Hruz, pediatric endocrinologist, witness for the defense.

DR. PAUL HRUZ,

of lawful age, being produced, sworn and examined on behalf of the Plaintiff, deposes and says:

EXAMINATION

QUESTIONS BY MR. GONZALEZ-PAGAN:

Q. All right. Dr. Hruz, thank you for being here today. I know you're a busy man. As you're aware, I represent Drew Adams, the Plaintiff in this litigation, and I'll be asking some questions about your opinions in this case today. I just want to go over some ground rules just to get started. First, do you understand that you're under oath today?

A. Yes, I do.

Q. And that -- that this requires to testify truthfully?

A. Yes, I do.

Q. We cannot be speaking at the same time. It will be annoying to the court reporter. It will make it difficult for you to hear me, me to hear you. So please let me finish a question before you start answering it, and I'll strive to do the same as well, and let you finish answering before I go into another question. Is that agreed?

A. Very good. Yes.

Q. If you don't understand something I ask,

identity, a gender identity, that does not correspond with their sex.

Q. Okay. So now understanding that term, I ask you, would you agree with me that there are transgender people?

A. I would agree that there are individuals that have a gender identity that does not match their sex.

Q. Okay. Have you met with Drew Adams?

A. I have not.

Q. Did you request to meet with Drew Adams?

A. I did not.

Q. Did anyone tell you you could not meet with Drew Adams?

A. No.

Q. Have you evaluated Drew Adams?

A. Clarify what you mean by "evaluate."

Q. As a doctor, you conduct evaluations of your patients.

A. So I have not participated in the medical care of Drew Adams.

Q. Okay. So you have not treated Drew Adams either?

A. That is correct.

Q. And you haven't examined him, medically

examined Drew Adams either?
A. I have never met him.
Q. Did you ask for an independent medical examination?
A. I did not.
Q. Have you ever met with either of Drew Adams' parents?
A. I have not.
Q. Have you spoken with any of Drew Adams' treating physicians?
A. I'm -- I'm just trying to see if -- if the ones that were listed, if I've ever met them at a meeting. I've never spoke with them directly related to this case, no.
Q. So if you've spoken to any of the doctors, okay, you have never spoken with them about Drew Adams?
MR. KOSTELNIK: Form.
A. That is correct.
Q. (By Mr. Gonzalez-Pagan) Did anyone advise you that you could not speak to Drew Adams' treating physicians?
A. No.
Q. Do you believe that speaking with Drew Adams' treating physicians would have enabled you to

physiological definition.
A. He is post-pubertal, and that's how I define --
Q. So you consider him an adult?
A. No, I do not.
Q. So what -- what -- what would you consider Drew Adams, then?
A. I would consider him a post-pubertal female who identifies as a -- a male.
Q. Is it safe to say you consider him a post-pubertal teenager?
A. Yes.
Q. You said from a legal standpoint. From a legal standpoint, is Drew Adams an adolescent?
A. He has not reached the age of 18.
Q. And you -- just to clarify, you just stated that Drew is post-pubescent, correct?
MR. KOSTELNIK: Form.
A. Post-pubertal.
Q. (By Mr. Gonzalez-Pagan) Let me just rephrase that, because that was a form objection. Is Drew Adams post-pubertal?
A. Drew Adams is post-pubertal.
Q. Would you agree that Drew Adams is transgender?

A. I -- as I said earlier, he is a biological female that identifies as a male. By that definition, he would qualified as a transgender individual.

Q. Is Drew a transgender boy?

A. Again, you have to be very careful when you make the designation. The -- the terminology that is often used right now would classify him as a transgendered male.

Q. If Drew told you he was a boy, would you accept that?

MR. KOSTELNIK: Form.

A. It would depend on what he was asking in terms of that, if he was asking about his gender identity or his biology. If he was asking about whether he was biologically male or female, I would say that he's biologically female.

Q. (By Mr. Gonzalez-Pagan) And if he told you that his gender identity was male?

A. I would take him at his word.

Q. If Drew told you he uses male pronouns, would you use male pronouns?

A. My practice is to use as much respect as I can and within the confines of scientific and biological reality, I would not have [sic] not an objection to be able to identify him as he wished.

Q. So is that a "yes" or a "no"?
A. That is a -- to make sure I understand the question again, please address it again.
Q. If Drew asked you to use male pronouns, would you use male pronouns?
A. Yes.
Q. In your practice -- and I take it you've been practicing for several years, so in your practice, how many transgender patients have you treated in the past five years?
A. As stated explicitly in my declaration, I intentionally do not treat transgender patients.
Q. At all?
A. That is correct.
Q. In any -- for any treatment?
A. Oh, the ones that I'm aware of, I have not encountered any patients that have presented to me as transgendered for any other conditions. I have certainly encountered many patients where that was something under consideration or something that I suspected, but nobody has ever mentioned directly to me that they were transgendered.
Q. Okay. So to your knowledge, you have not treated any person that you knew was transgender?
MR. KOSTELNIK: Form.

A. Well, again, if you would -- yeah, that is true for -- for the -- the patient -- somebody like Drew Adams that was biologically normal. I have certainly cared for hundreds of patients that have disorders of sexual development. Many practitioners will include those in that designation. I believe that they are a completely different patient population than Drew Adams.

Q. (By Mr. Gonzalez-Pagan) What is gender dysphoria?

A. Gender dysphoria is the discomfort that one experiences related to gender identity that does not conform with one's biological sex.

Q. Is that the definition in the DSM?

A. Yes.

Q. It uses the word "discomfort"?

A. I'd have to go look back at the exact wording of that. It's the difficulty that they experience, psychological difficulty with that, yes.

Q. Okay. And based on your testimony, would you agree that you have not treated any transgender patients for gender dysphoria?

A. Yes, I would agree.

Q. Would you agree that Drew's treating physicians have diagnosed him with gender dysphoria?

A. I would agree, yes.
Q. Would you agree that Drew Adams suffers from gender dysphoria?
A. Based on the information presented to me, I would accept that. I have nothing to dispute that.
Q. What do you understand gender-affirming treatment to mean?
MR. KOSTELNIK: Form.
A. So gender-affirming treatment?
Q. (By Mr. Gonzalez-Pagan) Yes.
A. That is the treatment paradigm that rather than challenging the discrepancy between biological sex and gender identity, it is affirmed and validated in the individual, his -- encouraged in that transgendered identity.
Q. So I just want to clarify a little bit, because you used different words there for what's being -- you said not challenge, correct?
A. That is correct.
Q. You said that it's accepted, that they accept the gender identity of the --
A. And -- and I would say even encourage.
Q. So that's where I was going.
A. Yes.
Q. So you think not challenging is the same as

the person putting forward this clinic and trying to understand what care that was being proposed to be provided in the setting of that context in my role as the director of our -- or the chief of our division of endocrinology.

Q. Just to be clear, though, you have never sat in a meeting between a provider and a patient discussing their treatment options for gender dysphoria?

A. That is correct, I've never been in the room with a patient while that care is being discussed.

Q. All right. Would you agree that Drew Adams' doctors have concluded that gender-affirming treatment is appropriate treatment for him?

A. That is what they concluded, yes.

Q. Would you agree that Drew Adams' doctors have concluded that the gender-affirming treatment has been helpful to Drew?

A. I believe that that's what they claim, yes.

Q. Do you agree that Drew Adams' gender-affirming treatment has been beneficial for him?

A. It depends on what you mean by beneficial. I think that it is far too early to know what the long-term outcome -- outcomes are going to be from what is being provided for Drew Adams.

Q. As we stand here today, has the gender-affirming treatment been beneficial to Drew with regards to his gender dysphoria?

MR. KOSTELNIK: Object to form.

A. So similar to the literature that has already been published in this area, Drew, by the reports that I've read, is experiencing a -- a lessening of the dysphoria in relation to the gender discordance, and I would say that based on the information that I saw, the answer is yes.

Q. (By Mr. Gonzalez-Pagan) As we stand here today, do you agree that Drew Adams' gender-affirming treatment has improved his quality of life?

A. So again, I can't say with certainty what actually has improved his quality of life. I can say, based on the record, that he is better adjusted than previously.

Q. Dr. Hruz, you're an endocrinologist, correct?

A. That is correct.

Q. You're not a psychiatrist, correct?

A. That is correct.

Q. You're not a psychologist?

A. That is correct.

Q. Are you a licensed mental healthcare

provider of any kind?

A. I am not.

Q. Can you diagnose gender dysphoria?

A. I can -- I can diagnose gender dysphoria to the extent that my colleagues, as pediatric endocrinologists, follow the DSM-5 and look at the criteria and put the check boxes there. That is the extent of what my colleagues, as pediatric endocrinologists, do, and I'm just as capable of doing that as they are.

Q. As an endocrinologist, do you routinely diagnose conditions in the DSM-5?

A. I -- I do not -- well, let me -- I'm trying -- the reason I'm waiting is I'm trying to think as I put in my ICD9 codes in my visits, I do believe that I've actually added them, but I do not consider myself as a psychiatrist to making those diagnoses, no.

Q. Do you have any basis to know whether Drew Adams has suffered distress as a result of being denied access to the restroom consistent with his gender identity?

A. I can only evaluate what is contained within his patient chart and the literature -- or the information that was provided to me.

exact basis of that cannot be determined with -- in the context of what the medical record shows.

Q. Again, having reviewed the medical records, is there anything in the medical records that leads you to believe that Drew Adams' anxiety cannot be attributed in part to his being denied access to the restroom consistent with his gender identity?

MR. KOSTELNIK: Form.

A. There are certainly entries in the medical record that indicate that his treating providers believed that that was a contributing factor. Whether that was or was not true, I don't have a basis to judge.

Q. (By Mr. Gonzalez-Pagan) Okay. Do you agree that Drew Adams feels stigmatized as a result of being denied access to the restroom consistent with his gender identity?

MR. KOSTELNIK: Form.

A. My understanding from what I've read is that he does make that claim.

Q. (By Mr. Gonzalez-Pagan) Do you agree that Drew Adams' gender dysphoria is exacerbated as a result of his being denied access to the restroom consistent with his gender identity?

A. I can state that that claim has been made,

not -- not proven.

Q. Do you have any basis to dispute the claim?

A. No.

Q. Having never met, evaluated, examined or treated Drew Adams, can you offer an opinion regarding Drew Adams specifically?

MR. KOSTELNIK: Form.

A. My opinions in this case are based upon a review of the medical literature and in the condition itself, and that is what I am offering to the court in my serving as an expert witness.

Q. (By Mr. Gonzalez-Pagan) Okay. Can you point me to where you have specific opinions with regards to Drew Adams in your report?

A. I specifically cover the medical information. I do have a paragraph in there where I -- I go through the details of what the allegations are, and --

Q. Is that Paragraph 12?

A. I -- yes, that is correct.

Q. Is that a description of the case details?

A. That is correct.

Q. Is there any opinion specific as to Drew Adams in Paragraph 12?

A. No.

Q. Is there any opinion specific as to Drew Adams anywhere else in the report?

A. No. My opinions are based on -- near the end of my declaration, I specifically state the concerns in a -- in a general sense of all patients that are -- are faced with this particular condition. And I think that that certainly is pertinent to Drew Adams in addition to the many other individuals that are suffering from this condition.

Q. Okay. But none of those opinions are specific to Drew Adams?

A. They are applicable to all individuals that present as Drew Adams does.

MR. GONZALEZ-PAGAN: Move to strike as nonresponsive.

Q. (By Mr. Gonzalez-Pagan) Are they specific to Drew Adams?

A. They include Drew Adams. They are not limited to Drew Adams.

Q. Would you agree that those opinions are general in nature and not specific to Drew Adams?

A. Yes.

Q. Having never met, evaluated, examined or treated Drew Adams, can you make an assessment as to whether Drew Adams suffers from gender dysphoria?

clinical guidelines?

A. I would let them know that the clinic was available, and I would let the people in that clinic, if they chose to attend that clinic, present all of the information for the basis for their treatment approach.

Q. So you wouldn't inform the patient that the treatment is in accordance with the clinical guidelines?

A. I'm envisioning the hypothetical situation that you're talking about, and the extent of my normal clinic visit and how much time I have to present all of the -- the important aspects of clinical care, and I'm envisioning that there would be a limit of the -- the length of that conversation if I was going to adequately address all of the other relevant issues that I was caring that patient for [sic].

Q. Would you suggest that the patient seek conversion therapy?

A. No.

Q. Is the treatment at the transgender center consistent with the position and recommendations of the American Medical Association?

A. I -- as I understand it, yes.

Q. Is the treatment at the transgender center

consistent with the position and recommendations of the American Academy of Pediatricians?

A. The AAP, yes.

Q. Is the treatment at the transgender center consistent with the position and recommendations of the American Psychiatric Association?

A. I don't follow those as closely, but I would assume yes.

Q. Is the treatment at the transgender center consistent with the position and clinical guidelines of the American Psychological Association?

A. The same as the last answer. To my knowledge, I don't know them specifically, but I would say yes.

Q. Okay. Let's go a little bit for some of your memberships. You're a member of the American Medical Association, right?

A. No.

Q. Were you a member of the American Medical Association?

A. I was in the past, yes.

Q. Are you a member of the American Academy of Pediatricians?

A. Yes.

Q. Is your position in your report and as you

sit -- sit here today consistent with the position of the American Academy of Pediatricians?

A. It is not consistent with the -- the opinion that is presented by the AAP. Again, I will note that is not a -- a position that has been voted upon by the entire membership of the AAP.

Q. Are the -- all the positions adopted by the AAP voted upon by the membership?

A. No. In fact, they're usually voted on by a very small select committee, a -- a very minority of the entire academy.

Q. So the position of the AAP on this subject has been adopted via its regular procedures?

A. Yes. Which -- which I would add do not involve membership of the entire academy.

Q. Are you a member of the Endocrine Society?

A. Yes, I am.

Q. Are your positions here today and in your report consistent with the clinical guidelines of the Endocrine Society?

A. They are at odds with the recommendations that are put forward, the guidelines that are put forward for the treatment of gender dysphoria.

Q. You're a member of the Pediatric Endocrine Society, correct?

A. Yes, I am.
Q. Are your positions here today and the positions in your report consistent with the positions adopted by the Pediatric Endocrine Society?
A. They are not, and I've actually written to the PES on more than one occasion with my opinions and invited them to dialogue about the -- the scientific evidence that I have in dispute from -- that are included per the recommendations.
Q. And we've requested those comments, right?
A. Yes. And everything I have on file, I gave you everything I have. I don't have records of anything that I did not send you.
Q. You have published a body of literature in your career, correct? Right?
A. That is correct.
Q. How many peer-reviewed articles have you written and published regarding gender identity?
A. I have not published peer-reviewed articles on gender identity.
Q. How many peer-reviewed articles have you written and published regarding transgender people?
A. I have not written peer -- peer-reviewed papers on that topic.
Q. How many peer-reviewed articles have you

written and published regarding the treatment of transgender children and adolescents?

A. Again, as peer-reviewed, I have not written any.

Q. How many peer-reviewed articles have you written and published regarding the treatment of gender dysphoria?

A. I have not written any.

Q. How many peer-reviewed articles have you written and published regarding the use of restrooms by transgender students?

A. I have not written any.

Q. How many studies have you conducted regarding gender identity?

A. Conducted, I have not conducted any, but I am in the process right now of responding to a research funding announcement by the NIH to be able to engage in that research.

Q. But just to be clear, you haven't conducted any as we stand here today?

A. That is correct.

Q. And you -- have you submitted that proposal to the NIH?

A. I -- I have not.

Q. How many studies have you conducted

regarding transgender people?

A. I have not.

Q. How many studies have you conducted regarding the treatment of transgender children and adolescents?

A. I have not.

Q. How many studies have you conducted regarding the treatment for gender dysphoria?

A. I have not.

Q. How many studies have you conducted regarding the use of restrooms by transgender students?

A. I have not.

Q. So you have no experience treating gender dysphoria, right?

A. Treating gender dysphoria?

Q. Yes.

A. I have not -- as I said earlier, I have not treated patients with gender dysphoria.

Q. And you have no experience conducting studies regarding transgender youth and adolescents, correct?

A. Conducting studies, I have not, as I said, have not participated in any studies to date.

Q. And you have no experience conducting

studies regarding gender dysphoria?

A. I have not conduct -- as I said, I have not conducted any studies on gender dysphoria.

Q. Nor have you published any literature regard -- regard -- peer-reviewed literature regarding gender dysphoria?

A. Peer-reviewed, no.

Q. So having no experience treating transgender patients for gender dysphoria, no experience conducting studies regarding transgender people, and no experience publishing peer-reviewed literature regarding transgender people, you consider -- do you consider yourself an expert on transgender issues?

MR. KOSTELNIK: Object to form.

A. I am a physician/scientist who has extensively read the literature for the merits, as I do in any other condition, and I believe I have expertise related to my role as a physician and a scientist and a pediatric endocrinologist to adequately assess the quality and quantity of the literature that's present on this area.

Q. (By Mr. Gonzalez-Pagan) And having no experience treating gender dysphoria, no experience conducting studies -- scratch that.

Let's talk a little bit about your article,

with that, so --

Q. Is "Growing Pains" your only article on transgender people and gender dysphoria?

A. Yes.

Q. Are you familiar with the St. John Paul II Bioethics Center?

A. Absolutely.

Q. Is this St. John Paul II Bioethics Center a religiously affiliated institution?

A. Yes, it is.

Q. Is it part of the Holy Apostles College and Seminary?

A. Yes, it is.

Q. Did you speak at the St. John Paul II Bioethics Center just three days ago, on Friday, November 17th?

A. I did, yes.

Q. During your speech last Friday, did you -- you said, "The identity of the individual is interactively linked to the body and the soul of the person." Is that right?

MR. KOSTELNIK: Form.

A. Repeat that again, just so I make sure you said that accurately.

Q. (By Mr. Gonzalez-Pagan) During your speech

last Friday, you said, "The identity of the individual is interactively linked to the body and soul of a person." Is that correct?

MR. KOSTELNIK: Form.

A. That is correct.

Q. (By Mr. Gonzalez-Pagan) During your speech last Friday, you said about being transgender, that, in fact, it probably goes back to some of the early heresies in the church; is that correct?

A. The introduction that I was providing to that audience was trying to put the context of the discussion in the proper framework, and I specifically made the statement that I am not a philosopher, that I'm going to be talking about issues of science and medicine. And it was an introduction to that talk to -- for that audience.

Q. Okay. Do you know who Caitlyn Jenner is?

A. Yes, I do.

Q. Caitlyn Jenner is a transgender woman, correct?

MR. KOSTELNIK: Form.

A. Caitlyn Jenner, formerly known as Bruce Jenner, is somebody that has been widely advertised in -- in the media related to the gender transition that -- that Caitlyn underwent.

Q. (By Mr. Gonzalez-Pagan) Is Caitlyn Jenner transgender?

A. By definition, yes.

Q. In referring to a picture of Caitlyn Jenner, did you not say these pictures are often disturbing?

A. I did. And that was the slide -- specifically was the statement, not Caitlyn Jenner, but there were two other pictures presented in that talk of children saying I hate my body. That was what I was referring to.

Q. Just to be clear, when it comes to the treatment of transgender people and gender dysphoria, your only publication is in a religiously-affiliated journal and you've spoken to -- about the topic to religiously-affiliated institutions?

MR. KOSTELNIK: Form.

A. I have offered to speak at all institutions that have invited me. And to date, yes, that was -- that was the institute that -- that invited me to speak last Friday.

Q. (By Mr. Gonzalez-Pagan) When did you first become interested in the matter of transgender people and the treatment of -- for gender dysphoria?

A. It was about five to six years ago, as chief of our Division of Endocrinology, when the question

claims that were made by Drew Adams were scientifically justified and accurate.

Q. And just to be clear, you're not a psychiatrist?

A. That is correct.

Q. And you're not a psychologist?

A. That is correct.

Q. And you're not a mental healthcare provider of any kind?

A. That is correct.

Q. Have you ever been a school administrator for a public school?

A. I have not.

Q. Have you ever been a teacher for a public school?

A. Not for a public school, unless you consider my role as an educator at the university of -- or Washington University a teacher.

Q. Let me clarify. Have you ever been a teacher for K to 12 education?

A. No.

Q. Have you spoken with school administrators with regards to the access to restrooms for transgender students?

A. No.

Q. Just to clarify, did you submit an expert report or a rebuttal report?

A. An -- an expert opinion report. And I also submitted -- you requested information from prior litigation, and that included a rebuttal report.

Q. Okay. So you know the difference between a rebuttal report and an expert report?

A. Yes, I do.

Q. Okay. And the -- it is your understanding that the report that you submitted in this case is an expert report, not a rebuttal report?

A. That's my understanding. Again, I would rely on the legal counsel to -- to clarify if I'm in error there.

Q. What did you do to write your report?

A. Start back from five to six years ago when I started investigating the scientific information. I -- I -- I've gathered the information for the last five to six years, and initially I was not doing that for the purpose of writing an expert declaration. In fact, at the beginning I had no clue that I would ever be serving in this capacity.

But I drew upon that information that I obtained in the reading of the literature over the past five to six years, my conversations with parents

A. I provided everything that I have access to right now that I can recall. I'm only stating that there are likely other papers that I do not have access to, because I did not keep track of it at the time that I read them or looked at them.

Q. Okay. Have you spoken with Dr. Allan Josephson?

A. Yes, I have.

Q. When?

A. On multiple occasions.

Q. Can you please describe?

A. I met Dr. Josephson within the last year as -- it was probably in the spring at some point in time, the first time that I actually met him. We've had a number of conversations over this past year, specifically related to his expertise as -- as a psychiatrist and mine as an endocrinologist. I have drawn upon him for questions related to psychiatric issues that -- that I did not have expertise in, to gather his opinion.

Q. In what capacity did you first counter-interact with Dr. Josephson?

A. It was at a conference that was put together to bring experts from various disciplines to this question of -- of gender dysphoria.

Q. Who put that conference together?
A. The Alliance Defending Freedom.
Q. The Alliance Defending Freedom is a religiously-affiliated institution, isn't it?
A. If you say so. I don't pay attention to what their religious affiliation is.
Q. When was this conference?
A. It was in the -- I don't know the exact date, but it was in the spring.
Q. Where was this conference?
A. It was in Phoenix.
Q. Aside from you and Dr. Josephson, do you recall any other experts, physicians or clinicians that attended this conference?
A. Yes, there were -- there was several other psychiatrists and psychologists. I don't remember their specific names, unfortunately. There were people that are in the social sciences. There was one other endocrinologist. I'm trying to remember who else was there. There were several lawyers from the ADA.
Q. Do you have any documents pertaining to this conference?
A. Not that I saved, no.
Q. Just to clarify, is there anything you

university, they offer gender-affirming treatment for gender dysphoric youth?

A. Yes, they do.

Q. Do they offer reparative treatment as a treatment for gender dysphoria at Boston Children's Hospital?

MR. KOSTELNIK: Form.

A. The word reparative therapy covers a lot of connotation by different people but to my understanding, they do not make any specific effort in counseling to lead to the realignment of gender with sex, if that's what you mean by conversion therapy.

Q. Before you started researching the issues of dysphoria around five years ago, had you met with Dr. Spack then?

MR. KOSTELNIK: Form.

A. Prior to five years ago, I do not recall a specific encounter yet. I'm sure we interacted at some point at one of the international meetings.

Q. (By Mr. Gonzalez-Pagan) In Paragraph 7, you state that you have met with parents of children with gender dysphoria; is that correct?

A. That is correct.

Q. In what capacity have you met with the parents of transgender children?

A. Again, this was at the very early time frame when I was trying to investigate the claims for the treatment and care, and I wanted to get as comprehensive of a viewpoint as I could. The first encounter I had was with a mother of an organization called Trans Parent Child, and I sat down for lunch with her for an extended period of time, more to listen to the experience that she had in countering a transgender child that she had.

Q. With how many parents of transgender children have you met?

A. Met or spoken on the phone? I think lately many of them have been over the telephone. I would say it's less than a dozen, but it's quite a few, and it's actually increased certainly since the publication of the "New Atlantis" article.

Q. So in the last five years, you've spoken to less than a dozen parents of transgender children?

A. Yes.

Q. When you first met with the parent of the -- associated with the organization Trans Parent, was this before you dealt -- scratch that.

MR. GONZALEZ-PAGAN: You're going to object anyway.

Q. (By Mr. Gonzalez-Pagan) When you met with

the parent associated with the association Trans Parent, had you already delved into the literature regarding gender dysphoria?

A. I was starting the process. It was very early on, so I don't recall the exact timing. I had read some papers, but I was still in the very early investigative phase.

Q. You said you have been contacted by parents since the publishing of your article "Growing Pains." Is that correct?

A. That is correct.

Q. How many have contacted you since the publishing of the article "Growing Pains"?

A. I'm not keeping track of that.

Q. Less than 35?

A. It may be more than five. Probably less than a dozen.

Q. What did you discuss with the parents of the transgender children that have contacted you since the publishing of your article "Growing Pains"?

A. I specifically discussed the context of my "New Atlantis" article in my role as a physician, which I always take as being a teacher. I try to educate them on my understanding of the condition and the treatment paradigm that was being offered to their

access the bathrooms as the cause of Drew's distress is not supported.

Q. But you're not a mental health provider, right?

A. That is correct.

Q. And you've never met with Drew, right?

A. That is correct.

Q. Let's go back to the meetings with parents that you had when you were first delving into this topic?

A. Very good.

Q. You discussed that you met with a parent associated with an organization called Trans Parent; is that correct?

A. That is correct.

Q. What did you learn from that meeting?

A. I learned quite few things. The most important thing that I learned, and that was what I was actually seeking in the interaction, was to really understand the suffering that was going on in this family. I wanted to understand the dynamics of what was going on in the family, the approach that the parents had in dealing with the presentation of their child, what they had attempted to do to address this particular issue, and at that point in time, I was

approaching this in a purely investigative manner. I did more listening than anything else, asking questions about their lived experience.

Q. What did the parent tell you?

A. Well, that was many years ago, but I will try to summarize my recollection of that conversation. This was with the mother. And she shared that this child, who was a prepubertal in early grade school, told her, when the mother was talking -- they were combing hair or something of that nature -- that she would -- he, at that time, was a girl, so she was referring to him as a girl, and that the parents' reaction initially was shock, fear, trying to understand what was going on, trying to be able at that time -- this was early on in this resurgence -- or emergence, I should say of this discussion that's going on socially, so there wasn't, at that time, a lot of resources being published on the Internet.

So she shared her attempt to look at what experience people have had with this particular condition. And I saw at that time, certainly a parent that was desiring to do the best for their child, but having questions that were not answered, and at that time, with the information I had, I was certainly not able to provide any answers. And, in fact, at this

point in time, I don't think I would have been able to specifically answer the questions that she had as far as long-term outcomes, because we don't have that information. It was a very respectful conversation. It was very helpful. I think that it was mutually beneficial, but, again, the purpose was for me to understand this particular family and their experience with transgender identity.

Q. What is the organization Trans Parent?

A. All I know is it's a -- it's supposed to be a support group, and I think that the parents themselves, the woman I talked to at that time was trying to get out information so other people understood what they were experiencing.

Q. In that meeting with the parents of a transgender -- let me scratch that.

The next set of the questions I'm just going to be focusing on that one parent.

A. Okay.

Q. In that meeting with the parent of the transgender child, did you ever tell the parent that their child was not normal and would never be normal?

A. I did not, because I was still investigating and trying to understand what was going on.

Q. In that meeting with the parent of that

transgender child, did you ever tell that parent that their transgender son was a girl and would never be a boy?

A. I never said that, no.

Q. In that meeting with the parent of that transgender child, have you ever told -- scratch that.

In that meeting with the parent of a transgender child, did you ever tell the parent that surgeries attempting to change sex was wrong and went against God's plan for humanity?

A. No, not that I recall. That was many years ago, but I don't remember that, no.

Q. In that meeting with the parents of the transgender child, did you not urge them to read Pope John Paul II's writing on gender to fully understand God's plan regarding gender?

A. Thank you for reminding me. That was a long time ago, so this is bringing back some information. I believe that -- this was a personal conversation. This was a one-on-one conversation, and I think at the time that we began talking about that, she started relating her personal faith training, and I never back away from those conversations when people are asking me those questions, and I think that that's what led to that particular conversation.

in individuals. That was the intent of that statement, and I believe it is the useful statement for that purpose.

Q. I get that, so I'm not -- and I'm not trying to be like moving to strike here all the time, and I'm not trying to, but the question is, do you think that the limitation that those studies don't distinguish between post-pubescent and pre-pubescent youth is important?

A. I think that it is certainly something that needs to be considered, yes.

Q. Okay. Do you think you should have disclosed that to the court?

MR. KOSTELNIK: Object to form.

A. For the purposes of putting my declaration together, I believe that I adequately summarized my understanding of the situation related to Drew Adams' case.

Q. (By Mr. Gonzalez-Pagan) Drew Adams, by your own testimony, is a post-pubescent teenager?

A. That is correct.

Q. Don't you think that that limitation should have been disclosed to the court?

MR. KOSTELNIK: Object to form.

A. Drew Adams was also a late onset gender

dysphoric individual, and that is a population that was not covered in these studies, and there is no evidence as to what the outcome is in those individuals.

Q. (By Mr. Gonzalez-Pagan) Okay. So in any event, the studies, then, that you cite are inapplicable to Drew Adams?

MR. KOSTELNIK: Form.

A. I believe that they are applicable to him in the context of what is known, and I will assert there's so much that is unknown about this condition, I think it is relevant based on the quality of evidence that is and needs to be considered by the court.

Q. Are there any other limitations to the studies to which you cite in Paragraph 28?

A. There are many limitations to the studies. Most of the earlier studies had very small sample lines. There is -- again, since they were done over an extended period of time, the cultural milieu has changed, and so I think that there are many, many limitations of the studies, and that certainly needs to be considered. The fact is that they've all shown consistently the same result despite the fact that they were done in different patient populations during

marked as Exhibit C -- 6. Can you please mark -- go to the Page 2205. It's the last page.

A. Yeah, okay. Okay.

Q. Could you please read for me the conclusions -- well, actually, let's go back. Do you recognize this document?

A. Yes, I do.

Q. What is it?

A. It -- well, it's a treatment -- an update on the treatment and outcomes of precocious puberty.

Q. Okay. Is this a peer-reviewed journal article?

A. It looks like it's a -- a statement. I'm not sure exactly. It's a JC&M, so it probably went through some -- a peer-reviewed process, yes.

Q. Okay. Let's go to the conclusions, please.

A. Okay.

Q. Could you please read the conclusions for me?

A. "Precocious puberty is a common problem seen in pediatric endocrinology practice. Identification of the child with pathological pubertal development allows for accurate diagnosis and application of current treatment strategies. Recent improvements in therapeutic agents allow for a complete suppression of

CPP with less discomfort to the patient and improvement of height outcomes, particularly those less than six years old."

"Our major gaps in understanding lie in the area of long-term outcomes, including endocrine and metabolic effects of precocious puberty. The most striking deficit is the lack of long-term data on the psychological and behavioral effects of precocious puberty and the effects of GNRHA treatment. We can anticipate additional information on these aspects in the years to come."

Q. Is it safe to say that this article concludes that there's a lack of long-term data on the effects of the treatment of precocious puberty with puberty blockers?

A. That is correct.

Q. Yet you said that you provide puberty blockers as a treatment for precocious puberty?

A. That is correct.

Q. How does that square with your concern of providing gender-affirming treatment due to the lack of long-term data?

MR. KOSTELNIK: Form.

A. So any decision that a practitioner makes is made on a risk/benefit analysis, and the risk/benefit

Q. Are you aware that the AMA, quote, "opposes the use of reparative or conversion therapy for sexual orientation or gender identity"?

MR. KOSTELNIK: Form.

A. I'm aware of the WPATH saying that, and I -- I believe it may also be in the AMA statement as well.

Q. (By Mr. Gonzalez-Pagan) Are you aware that the American Academy of Pediatricians has stated that, quote, "In no situation is a referral for conversion or reparative therapy indicated"?

A. I'm aware of that statement, yes.

Q. Are you aware that a publication by the American Psychological Association and the U.S. Department of Health and Human Services states that interventions -- quote, "Interventions aimed at a fixed outcome, such as gender conformity or heterosexual orientation, including those aimed at changing gender identity, gender expression and sexual orientation are coercive, can be harmful and should not be part of the behavior health treatment"?

MR. KOSTELNIK: Form.

A. I am aware of that statement, but there is no scientific evidence to support that statement.

Q. (By Mr. Gonzalez-Pagan) On what basis do you disagree with that statement?

A. I never said that I was advocating for one position to the other. I merely said that there's no science to back up the assertion that this is -- needs to be mandated.

Q. So do you believe that Drew Adams should not be allowed to use the boys' restroom?

MR. KOSTELNIK: Object to form.

A. I have never made a school policy. I'm not a witness making any opinions about what the school policy is. I'm merely stating what the science is behind the treatment paradigm that is currently being advocated.

Q. (By Mr. Gonzalez-Pagan) So you do not have any opinion as to whether the current policy should or should not be implemented at St. John's County School District?

A. That would require me to have experience as a school administrator or making school policies, which I do not have that experience.

Q. So again, can you say whether the current policy of the School Board of St. John's County should or should not be implemented?

MR. KOSTELNIK: Form.

A. Again, I said I don't have the qualifications as far as making school policy to make

outcome as far as persistence or desistence.

Q. When did you first speak to Dr. Josephson about this case?

A. Oh, I believe it was within the last month.

Q. Did you speak to Dr. Josephson before or after you were retained as an expert in this case?

A. After.

Q. Just cleaning up a little bit. Going back to 2012 and 2013 again, you testified that you spoke to Dr. Norman Spack around 2012 and 2013?

A. Yes.

Q. Can you please describe that conversation for us?

A. Dr. Spack had come to Washington University and presented his treatment approach in the context of all the discussion that was going on at that time as to whether we should initiate the transgender treatment program. In addition to the talk and the question session after that, we had a panel or actually a round table discussion with a number of the different providers, not only within the Endocrine Division, but also with a representative from adolescent medicine, our psychologist, a number of different individuals. This was at the time when the Endocrine Society acknowledged that this care was

controversial, that it was unsettled as far as the science was concerned, and there was lots of discussion going on not only at my university, but at the national level.

The discussion at that time revolved around all of -- much of the data that I had not fully read. I read some of the papers, but I certainly hadn't read all of them, and there were differing opinions expressed at that point in time. The individuals that have gone on to direct that clinic and -- were certainly taking one approach, in my opinion, even at that time, made comments that -- of where my questions were related to that condition.

And I distinctly remember, and this actually led into the "New Atlantis" article at the very end, Dr. Spack recognized that I was unconvinced by the level of scientific evidence supporting this care, and I distinctly remember him saying, "Well, if you can't accept cross-hormone treatment, at least do puberty suppression because it's safe and reversible." And that's almost a verbatim quote, and I've heard this by many other individuals as well. And that prompted me to investigate the claims about whether that truly was safe and reversible, and that led to the "New Atlantis" publication.

Q. What were the opinions expressed by Dr. Spack besides saying that puberty blockers were safe and reversible?

A. He essentially made the argument based upon the Dutch experience that this was necessary to prevent individuals from committing suicide, that this was a life-saving intervention, and he took quite great pride in being able to participate at that stage of his career in that intervention. As far as the data presented at that time that this was a long-term solution, was not offered by Dr. Spack, and certainly the concerns related to the medical risks, and I believe at that point in time we were talking a little bit about philosophical discussions as well, as far as what it means to be a man and what it means to be a women. It was a very respectful conversation, but at the level of scientific evidence to support what he was recommending, I found it completely lacking.

Q. What do you mean by philosophical conversations about what it means to be a man and what it means to be a woman?

A. I mean exactly what it says. I don't remember the details of the conversation.

(Phone ringing. Whereupon an off-the-record discussion was held.)

Q. (By Mr. Gonzalez-Pagan) Do you need me to restate the question?

A. Please.

Q. What do you mean by the philosophical conversations about what it means to be a man and what it means to be a woman?

A. I would say it includes the discussion of -- from a biological standpoint about what it means to be a women. At that point in time there was lots of discussion about the terms "sex gender," "gender identity" and "sexual orientation" that was included in that discussion. There was, I believe at that point in time, a lot of conflicting assertions that were being made by different people about whether sex and gender were the same or different, and the arguments were being made pro and con. More specific details, I don't recall.

Q. And you stated that there was controversy about the provision of care for gender dysphoria at the time in the Endocrine Society?

A. That is correct. My first recollection was at one of the national Pediatric Endocrine Society meetings when this new paradigm was introduced. And as I recall, there was a very strong reaction by a number of members of the audience related to what was

amount of experience that somebody who is a clinical -- a full-time clinician versus -- now, I -- I know from my own experience many people that are listed on those clinical studies were not the ones that designed the trial. They're not the ones analyzing the data. Their role usually in those studies, as clinical faculty, are usually in filling out and the protocols that are present for those. And now the specifics of the trial that she's involved with, I would have to look in more detail to assess that in -- in greater detail.

Q. Okay. Do you know what her role is?

A. You'll have to tell me what the study is and -- and give me more information to be able to do that.

Q. Did you review Dr. Ehrensaft's expert -- expert report in this case?

A. I did.

Q. Have you published any peer-reviewed literature regarding gender dysphoria or transgender youth?

A. These are questions that I've already answered, and the answer is no.

Q. Okay. Are you aware that Dr. Ehrensaft has published a number of peer-reviewed articles regarding

# EXHIBIT D

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF WISCONSIN

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ASHTON WHITAKER, a minor, by his mother and next friend, MELISSA WHITAKER,

Plaintiff,

Civ. Action No. 2:16-cv-00943

KENOSHA UNIFIED SCHOOL DISTRICT NO. 1 BOARD OF EDUCATION and SUE SAVAGLIO-JARVIS, in her official capacity as Superintendent of the Kenosha Unified School District No. 1,

Defendants.

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**EXPERT DECLARATION of Paul W Hruz, M.D., Ph.D**

1. I have been retained by counsel for Defendants as an expert in connection with the above-captioned litigation. I have actual knowledge of the matters stated in this declaration. My professional background, experience, and publications are detailed in my curriculum vitae, a true and accurate copy which is attached as Exhibit A to this declaration.

2. I received my doctor of philosophy degree from the Medical College of Wisconsin in 1993. I received my medical degree from the Medical College of Wisconsin in 1994. I am an Associate Professor of Pediatrics in the Division of Pediatric Endocrinology and Diabetes at Washington University School of Medicine. I also have a secondary appointment as Associate Professor of Cellular Biology and Physiology in the Division of Biology and Biological Sciences at Washington University School of Medicine. I served as chief of the Division of Pediatric Endocrinology and Diabetes at Washington University from 2012-2017. I served as the

Director of the Pediatric Endocrinology Fellowship Program at Washington University from 2008-2016.

3. I am board certified in Pediatrics and Pediatric Endocrinology. I have been licensed to practice medicine in Missouri since 2000.

4. My professional memberships include the American Academy of Pediatrics, the Pediatric Endocrine Society, the Endocrine Society, and the American Association for Biochemistry and Molecular Biology.

5. I have extensive experience in treating infants and children with disorders of sexual development and am an active member of the multidisciplinary Disorders of Sexual Development (DSD) program at Washington University. The DSD Team at Washington University is part of the DSD-Translational Research Network, a national multi-institutional research network that investigates the genetic causes and the psychologic consequences of DSD.

6. In the nearly 20 years that I have been in clinical practice I have participated in the care of hundreds of children with disorders of sexual development. In the care of these patients, I have acquired expertise in the understanding and management of associated difficulties in gender identification.

7. In my role as the director of the Division of Pediatric Endocrinology at Washington University, I have extensively studied the existing literature related to the incidence, potential etiology and treatment of gender dysphoria as efforts were made to develop a Transgender clinic at Saint Louis Children's Hospital. I have participated in local and national meetings where the endocrine care of children with gender dysphoria has been discussed and debated. I have met individually with several pediatric endocrinologists, including Dr. Norman Spack, who have developed and led transgender programs in the United States. I have also met with parents of

children with gender dysphoria to understand the unique difficulties experienced by this patient population.

8. Pediatric patients referred to our practice for the evaluation and treatment of gender dysphoria are cared for by an interdisciplinary team of providers that includes a psychologist and pediatric endocrinologist who have been specifically chosen for this role based upon a special interest in this rare patient population. Due to serious concerns regarding the safety, efficacy, and ethics of the current treatment paradigm, I have not directly engaged in hormonal treatment of patients with gender dysphoria.

9. My opinions as detailed in this declaration are based upon my knowledge and direct professional experience in the subject matters discussed. The materials that I have relied upon are the same types of materials that other experts in my field of clinical practice rely upon when forming opinions on the subject. The documents that I have reviewed specifically related to this case are 1.) the medical records for Savanah "Ash" Whitaker (AW0124-AW0223), 2.) the transcript of the deposition of medical expert witness Danial Shumer, MD, MPH, and 3.) the defendants' answer to plaintiff's amended complaint filed on October 18, 2016. A list of the published literature I have relied on is attached as Exhibit B to this declaration.

10. Over my career, I have provided expert medical record review and testified at deposition in less than a dozen cases. I have not given a deposition as an expert witness since 2012 and I have never testified at trial.

11. I am being compensated at an hourly rate for actual time devoted, at the rate of $300 per hour. My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I provide.

**Case Details**

[redacted]

**Basic Terminology**

13. Biological sex is a term that specifically refers to a member of a species in relation to the member's capacity to either donate (male) or receive (female) genetic material for the purpose of reproduction. This remains the standard definition that has been accepted and used by scientists, medical personnel, and society in general.

14. Gender, a term that had traditionally been reserved for grammatical purposes, is currently used to describe the psychologic and cultural characteristics of a person in relation to biological

sex. Gender therefore exists in reference to societal perceptions, not biology.

15. Gender identity refers to a person's individual perception of being male or female.

16. Sexual orientation refers to a person's arousal and desire for sexual intimacy with members of the male or female sex.

**Human sexuality in relation to fundamental biology and observed variations**

17. Sex is genetically encoded at the moment of conception due to the presence of specific DNA sequences (i.e. genes) that direct the production of signals that influence the formation of the gonad to develop either into a testis or ovary. This genetic information is normally present on X and Y chromosomes. Chromosomal sex refers to the normal complement of X and Y chromosomes (i.e. normal human males have one X and one Y chromosome whereas normal human females have two X chromosomes). Genetic signals are mediated through the activation or deactivation of other genes and through programmed signaling of hormones and cellular transcription factors. The default pattern of development in the absence of external signaling is female. The development of the male appearance (phenotype) depends upon active signaling processes.

18. For members of the human species, sex is normatively aligned in a binary fashion (i.e., either male or female) in relation to biologic purpose. Medical recognition of an individual as male or female is typically made at birth according to external phenotypic expression of primary sexual traits (i.e., presence of a penis for males and presence of labia and vagina for females).

19. Due to genetic and hormonal variation in the developing fetus, normative development of the external genitalia in any individual differs with respect to size and appearance while maintaining an ability to function with respect to biologic purpose (i.e. reproduction). Internal

structures (e.g. gonad, uterus, vas deferens) normatively align with external genitalia.

20. Reliance upon external phenotypic expression of primary sexual traits is a highly accurate means to assign biologic sex. In over 99.9% of cases, this designation will correlate with internal sexual traits and capacity for normal biologic sexual function.

**Gender Dysphoria in relation to Biological Sex**

21. Although gender usually aligns with biological sex, some individuals experience discordance in these distinct traits. Specifically, biologic females may identify as males and biologic males may identify as females. As gender by definition is distinct from biological sex, one's gender identity does not change a person's biological sex.

22. Individuals who experience significant distress due to discordance between gender identity and sex are considered to have "gender dysphoria". Although the prevalence of gender dysphoria has not been established by rigorous scientific analysis, estimates reported in in the DSM-V are between 0.005% to 0.014% for adult males and 0.002% to 0.003% for adult females. Thus, gender dysphoria is a rare condition. It is currently unknown whether these estimates are falsely low due to under-reporting, or if changing societal acceptance of transgenderism and the growing number of medical centers providing medical intervention for gender dysphoria affects the number of persons who identify as transgender. Recent data suggests that the number of people seeking care for gender dysphoria is increasing with some estimates as high as 4-fold.

23. There is strong evidence against the theory that gender identity is determined at or before birth and is unchangeable. This comes from identical twin studies where siblings share genetic complements and prenatal environmental exposure but have differing gender identities.

24. Further evidence that gender identity is not fixed comes from established peer

reviewed literature demonstrating that the vast majority (80-95%) of children who express gender dysphoria revert to a gender identity concordant with their biological sex by late adolescence. It is not known whether individuals with gender dysphoria persistence have differing etiologies or severity of precipitating factors compared to desisting individuals.

[redacted]

26. The recently coined concept of "neurological sex" as a distinct entity or a basis for classifying individuals as male or female has no scientific justification. Limited emerging data has suggested structural and functional differences between brains from normal and transgender individuals. These data do not establish whether these differences are innate and fixed or acquired and malleable. The remarkable neuronal plasticity of the brain is known and has been studied extensively in gender-independent contexts related to health and disease, learning and behavior.

**Gender Ideology**

27. The modern attempt to equate gender identity with sex is not based upon sound scientific principles but rather is based upon ideology fueled by advocacy. Although worldviews among scientists and physicians, similar to society at large, differ, science is firmly grounded in physical

reality not perception. The inherent link between human sexual biology and teleology is self-evident and fixed.

28. The claims of proponents of transgenderism, which include opinions such as "Gender defines who one is at his/her core" and "Gender is the only true determinant of sex" must be viewed in their proper philosophical context. There is no scientific basis for redefining sex on the basis of a person's psychological sense of 'gender'.

29. The prevailing, constant and accurate designation of sex as a biological trait grounded in the inherent purpose of male and female anatomy and as manifested in the appearance of external genitalia at birth remains the proper scientific and medical standard. Redefinition of the classification and meaning of sex based upon pathologic variation is not established medical fact.

**Potential Harm Related to Gender Dysphoria Treatments**

30. The fundamental purpose of the practice of medicine is to treat disease and alleviate suffering. An essential tenet of medical practice is to avoid doing harm in the process. Due to the frequent lack of clear and definitive evidence on how to best accomplish this goal, treatment approaches can and do frequently differ among highly knowledgeable, competent, and caring physicians.

31. Persons with gender dysphoria as delineated in the DSM-V experience significant psychological distress related to their condition with elevated risk of depression, suicide, and other morbidities. Thus, attempts to provide effective medical care to affected persons are clearly warranted.

32. Efforts to effectively treat persons with gender dysphoria require respect for the inherent dignity of those affected, sensitivity to their suffering, and maintenance of objectivity in

assessing etiologies and long-term outcomes. Desistance (i.e. reversion to gender identity concordant with sex) provides the greatest lifelong benefit and is the outcome in the majority of patients and should be maintained as a desired goal. Any forced societal intervention that could interfere with the likelihood of gender dysphoria resolution is unwarranted and potentially harmful.

33. There is an urgent need for high quality controlled clinical research trials to determine ways to develop supportive dignity affirming social environments that maintain affirmation of biological reality. To date, three approaches have been proposed for managing children with gender dysphoria. The first approach, often referred to as "conversion" or "reparative therapy", is directed toward actively supporting and encouraging children to identify with their biological sex. The second "neutral" approach, motivated by understanding of the natural history of transgender identification in children, is to neither encourage nor discourage transgender identification, recognizing that the majority of affected children if left alone will eventually realign their gender with their sex. The third "affirming" approach is to actively encourage children to embrace transgender identity with social transitioning followed by hormonal therapy.

34. The gender affirming approach, which includes use of a child's preferred pronouns, use of sex-segregated bathrooms, other intimate facilities and sleeping accommodations corresponding to a child's gender identity, has limited scientific support for short-term alleviation of dysphoria and no long-term outcomes data demonstrating superiority over the other approaches. Claims that the other approaches have been scientifically disproven are false. Decades of research, most notably the pioneering work of Dr. Kenneth Zucker, have supported the efficacy of a more conservative approach for the majority of patients experiencing gender dysphoria.

35. Feelings of anxiety, depression, isolation, frustration, and embarrassment are not unique to children with gender dysphoria, but rather are common to children who differ physically or psychologically from their peers. Difficulties are accentuated as children progress through the normal stages of neurocognitive and social development. In the clinical practice of pediatric endocrinology, this is most commonly seen in children with diabetes. Attempts to deny or conceal the presence of disease rather than openly acknowledge and address specific needs can have devastating consequences including death. With proper acknowledgment of the similarity and differences between children with gender dysphoria and other developmental challenges, prior experience can guide the development of effective approaches to both alleviate suffering and minimize harm to school aged children experiencing gender dysphoria.

36. The Endocrine Society published in 2009 clinical guidelines for the treatment of patients with persistent gender dysphoria. The recommendations include temporary suppression of pubertal development of children with GnRH agonists (hormone blockers normally used for children experiencing precocious puberty) followed by hormonal treatments to induce the development of secondary sexual traits consistent with one's gender identity. This guideline was developed using the GRADE (Recommendations, Assessment, Development, and Evaluation) system for rating clinical guidelines. As directly stated in the Endocrine Society publication, "the strength of recommendations and the quality of evidence was low or very low." According to the GRADE system, low recommendations indicate "Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate". Very low recommendations mean that "any estimate of effect is very uncertain".

37. Clinical Practice Guidelines published by the World Professional Association for Transgender Health (WPATH), similarly, though less explicitly, acknowledge the limitation of

existing scientific data supporting their recommendations given and "the value of harm-reduction approaches".

38. Treatment of gender dysphoric children who experience persistence of symptoms with hormones (pubertal suppression and cross-hormone therapy) carries significant risk. It is generally accepted, even by advocates of transgender hormone therapy, that hormonal treatment results in sterility which in many cases is irreversible. Emerging data also show that treated patients have lower bone density which may lead to increased fracture risk later in life. Other potential adverse effects include disfiguring acne, high blood pressure, weight gain, abnormal glucose tolerance, breast cancer, liver disease, thrombosis, and cardiovascular disease.

39. Since strategies for the treatment of transgendered children as summarized by the Endocrine Society guidelines are relatively new, long-term outcomes are unknown. Evidence presented as support for short term reductions in psychological distress following social transition in a "gender affirming" environment remains inconclusive. When considered apart from advocacy based agendas, multiple potential confounders are evident. The most notable deficiencies of existing research are the absence of proper control subjects and lack of randomization in study design. Although appropriate caution is warranted in extrapolating the outcomes observed from prior studies with current treatments, adults who have undergone social transition with or without surgical modification of external genitalia continue to have rates of depression, anxiety, substance abuse and suicide far above the background population.

40. Evidence cited to support societal measures that promote or encourage gender transition, including the plaintiff's demand for use of preferred pronouns by teachers and the use of public restrooms, other intimate facilities and sleeping accommodations corresponding with the plaintiff's gender identity, as a medically necessary treatment for gender dysphoria is limited.

Recent studies reporting reductions in dysphoria following social transition of adolescent patients are small, poorly controlled and of insufficient duration to draw definitive conclusions regarding long-term efficacy. Long-term follow up of patients with gender dysphoria who have undergone social and hormonal transition with or without surgical intervention has shown persistent psychological morbidity far above non-transgendered individuals with suicide attempts 7-fold and completed suicides19-fold above the general population.

41. Of particular concern is the likelihood that forced societal affirmation including a requirement that the Kenosha Unified School District allow students to use sex-segregated bathrooms corresponding to gender identity rather than access to single unit facilities or provision of sleeping accommodations based upon gender identity rather than sex, will interfere with known rates of gender resolution. Any activity that encourages or perpetuates transgender persistence for those who would otherwise desist can cause significant harm, particularly in light of the current treatment paradigm for persisting individuals. As noted, permanent sterility can be expected with hormonal or surgical disruption of normal gonadal function. This is particularly concerning given that children are likely incapable of making informed consent to castrating treatments.

42. Dignity affirming support for adolescents with gender dysphoria does not necessitate facilitation of a false understanding of human sexuality in schools. Rather, policy requirements that can increase persistence of transgender identification have significant potential for inducing long-term harm to affected children.

43. There remains a significant and unmet need to better understand the biological, psychological, and environmental basis for the manifestation of discordance of gender identity and biological sex in affected individuals. In particular, there is a concerning lack of randomized

controlled trials comparing outcomes of youth with gender dysphoria who are provided mandated access to sex-segregated bathroom facilities corresponding with gender identity to youth provided single user facilities. This includes understanding of how forced public encouragement of social gender transition affects the usual progression to resolution of gender dysphoria in affected children. Such studies can be ethically designed and executed with provision of other dignity affirming measures to both treatment groups. Without this scientific evidence, it is impossible to assert that the approach using sex-segregated bathrooms is an essential component of treatment.

Pursuant to 28 U.S.C § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Date: April 26, 2017

Signed: Paul W Hruz

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

# EXHIBIT A

# Curriculum Vitae

## Paul W. Hruz, M.D., Ph.D.

Date: 04/26/2017 04:18 PM

### Personal Information

Birthplace: WI
Citizenship: USA

### Address and Telephone Numbers

University: Washington University in St. Louis
School of Medicine
Department of Pediatrics
Endocrinology and Diabetes
660 S. Euclid

Campus Box 8208

Phone: 314-286-2797
Fax: 314-286-2892
eMail: Hruz_P@kids.wustl.edu

### Present Positions

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

### Education and Training

| | |
|---|---|
| 1987 | BS, Chemistry, Marquette University, Milwaukee, WI |
| 1993 | PhD, Biochemistry, Medical College of Wisconsin, Milwaukee, WI |
| 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 |

### Academic Positions and 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 |
| 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 |

**Appointments and Committees**

NIH Study Sections

| | |
|---|---|
| 2005 | NIH- NIDDK Special Emphasis Panel ZDK1 GRB-6 |
| 2009 | NIH- ACE Competitive Revisions ZRG1 AARR-H (95) S |
| 2009 | NIH- AIDS and AIDS Related Research IRG |
| 2011 | NIH- Pediatric Endocrinologist K12 ZDK1 GRB-C |
| 2014 | NIH- Special Empahsis Panel ZRG1 BBBPY 58 |
| 2014 | NIH- AIDS and AIDS Related Research IRG |
| 2015 | NIH- Cardiovascular and Respiratory Sciences Special Emphasis Panel ZDK1 GRB-J (02) |
| 2015 | NIH- NIDDK Special Emphasis Panel ZRG1 CVRS-Q (80) |
| 2016 | NIH Special Emphasis Panel ZRG1 AAR-M |
| 2016 | American Diabetes Association Research Grant Review Committee |

University Affiliations

| | |
|---|---|
| 2008 - 2016 | Director, Pediatric Endocrinology & Diabetes Fellowship Program |
| 2010 - Pres | Pediatric Computing Facility Advisory Committee |
| 2012 - 2017 | Director, Division of Pediatric Endocrinology & Diabetes |
| 2012 - Pres | Disorders of Sexual Development Multidisciplinary Care Program |
| 2013 - Pres | Molecular Cell Biology Graduate Student Admissions Committee |
| 2014 - Pres | Research Consultant, ICTS Research Forum - Child Health |
| 2014 - Pres | Director, Pediatric Diabetes Research Consortium |

Hospital Affiliations

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

| Thesis Committees (*Chair) | | Advisor |
|---|---|---|
| 2008 - 2011 | Kelly Diggs-Andrews | Simon Fisher |
| 2008 - 2010 | Irwin Puentes | Simon Fisher |
| 2008 - 2010 | Tony Frovola | Kelle Moley |
| 2009 - 2010 | Lauren Flessner | Kelle Moley |
| 2010 - 2012 | Katie Boehle | Kelle Moley |
| 2010 - 2013 | Candace Reno | Simon Fisher |
| 2011 - 2016 | Thomas Kraft | Paul Hruz |
| 2013 - 2015 | Chi Lun Pui | Audrey Odom |
| 2013 - 2016 | Leah Imlay | Audey Odom |
| 2014 - Pres | Anne Robinson | Katie Henzler-Wildman |
| 2015 - Pres | Allyson Mayer | Brian DeBosch |

Scholarship Oversight Committees

| | |
|---|---|
| 2013 - 2016 | Brittany Knipsein (Advisor: David Rudnick) |
| 2016 - Pres | Pamela Smith (Advisor: Michael Whyte) |

**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 |

**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 |

Editorial Boards

| | |
|---|---|
| 2014 - Pres | Endocrinology and Metabolism Clinics of North America |

**Professional Societies and Organizations**

| | |
|---|---|
| 1992 - 2004 | American Medical Association |
| 1994 - 2005 | American Academy of Pediatrics |
| 1995 - 2014 | American Association for the Advancement of Science |
| 1998 - Pres | American Diabetes Association |
| 1998 - Pres | Endocrine Society |
| 1999 - Pres | Pediatric Endocrine Society |
| 2004 - Pres | American Society for Biochemistry and Molecular Biology |
| 2004 - Pres | Society for Pediatric Research |
| 2004 - 2007 | American Chemical Society |
| 2005 - Pres | Full Fellow of the American Academy of Pediatrics |
| 2013 - Pres | International Society for Pediatric and Adolescent Diabetes |

**Major Invited Professorships and Lectures**

| | |
|---|---|
| 2002 | St. Louis Children's Hospital, Pediatric Grand Rounds, 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 | The Collaborative Institute of Virology, Complications Committee Meeting, Boston, MA |
| 2005 | University of Indiana, Endocrine Grand Rounds, Indianapolis, IN |
| 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 | Medical College of Wisconsin, MSTP Annual Visiting Alumnus Lecture, Milwaukee, WI |
| 2007 | St Louis Children's Hospital, Pediatric Grand Rounds, St Louis, MO |
| 2007 | University of Arizona, Minority Access to Research Careers Seminar, Tucson AZ |
| 2008 | Boston University, Division of Endocrinology, Diabetes and Nutrition, Boston, MA |
| 2009 | St Louis Children's Hospital, Pediatric Grand Rounds, St Louis, MO |
| 2010 | American Diabetes Association Scientific Sessions, Symposium Lecture Orlando, FL |
| 2010 | University of Missouri Kansas City, School of Biological Sciences, Kansas City, MO |
| 2011 | Life Cycle Management Advisory Board Meeting, Bristol-Myers Squibb, Chicago, IL |
| 2013 | St Louis Children's Hospital, Pediatric Grand Rounds, St Louis MO |
| 2013 | St Louis Children's Hosptial CPU Lecture, St Louis MO |
| 2014 | Pediatric Academic Societies Meeting, Vancouver, Canada, May 5, 2014 |
| 2014 | American Diabetes Association 74th Scientific Sessions, San Francisco, CA, June 13, 2014 |
| 2017 | University of Michigan, Division of Pediatric Endocrinology, Ann Arbor MI |

**Consulting Relationships and Board Memberships**

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

**Research Support**

**Non-Governmental Support**

(Hruz)
Gilead Pharma
Novel HIV Protease Inhibitors and GLUT4

MHI-2017-593 (DeBosch) 2/1/2017- 1/31/2020
CDI
Prevention And Treatment Of Hepatic Steatosis Through Selective Targeting Of GLUT8

**Completed Support**

II (Hruz) 2/1/2012- 1/31/2015
CDI
Solution-State NMR Structure and Dynamics of Facilitative Glucose Transport Proteins

R01 (Hruz) 9/20/2009- 5/31/2014
NIH
Direct Effects of Antiretroviral Therapy on Cardiac Energy Homeostasis
The goal of this project is to characterize the influence of antiretroviral therapies on myocardial energy homeostasis and to elucidate how these changes in substrate delivery adversely affect cardiac function in the stressed heart.

Research Program (Hruz) 6/1/2009- 5/31/2012
MOD
Regulation of GLUT4 Intrinsic Activity
The major goals of this project are to investigate the ability of the GLUT4 tethering protein TUG and an UBL-domain containing N-terminal fragment of this protein to alter the intrinsic activity of the insulin responsive facilitative glucose transporter, to determine whether protein ubiquitination influences this association, and to characterize the role of the GLUT4 binding site on the modulation of glucose transport.

R01 (Hruz) 4/1/2007- 1/31/2012
NIH
Mechanisms for Altered Glucose Homeostasis During HAART
The goal of this project is to identify the cellular targets of HIV protease inhibitors that lead to peripheral insulin resistance, impaired beta-cell function, and alterations in hepatic glucose production and to elucidate the molecular mechanisms of these effects.

R01 Student Supp (Hruz) 6/10/2009- 8/31/2011
NIH
Mechanisms for Altered Glucose Homeostasis During HAART
The goal of this project is to identify the cellular targets of HIV protease inhibitors that lead to peripheral insulin resistance, impaired beta-cell function, and alterations in hepatic glucose production and to elucidate the molecular mechanisms of these effects.

(Hruz) 3/9/2010- 6/8/2011
Bristol-Myers Squibb
Protective Effect of Saxagliptin on a Progressive Deterioration of Cardiovascular Function

II (Hruz) 2/1/2008- 1/31/2011
CDI
Insulin Resistance and Myocardial Glucose Metabolism in Pediatric Heart Failure

**Past Trainees**

2014 - 2014 David Hannibal, Clinical Research Trainee

2005 - 2005 Dominic Doran, DSc, Postdoctoral Fellow
Study area: HIV Protease Inhibitor Effects on Exercize Tolerance

2002 - 2010 Joseph Koster, PhD, Postdoctoral Fellow
Study area: Researcher

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

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

2005 - 2005 Helena Johnson, Graduate Student

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

2006 - 2006 Ramon Jin, Graduate Student
Study area: Research

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

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

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

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

2005 - 2005 Jeremy Etzkorn, Medical Student
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

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

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

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

2004 - 2005 Carl Cassel- High School Student, Other
Study area: Research

2004 - 2004 Christopher Hawkins- Undergraduate Student, Other
Study area: Researcher

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

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

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

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

2004 - 2004 Kaiming Wu- High School Student, Other
Study area: Research

2011 - 2012 Lisa Becker- Undergraduate Student, Other

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

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

2002 - 2002 Nishant Raj- Undergraduate Student, Other
Study area: Researcher

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

**Clinical Responsibilities**

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

**Teaching Responsibilities**

| | |
|---|---|
| | Facilitator, Cell Biology Graduate Student Journal Club, 4 hour/year |
| | Facilitator, Discussion: Pituitary, Growth & Gonadal Cases, 2 hours/year |
| 2000 - Pres | Lecturer, Medical Student Growth Lecture (Women and Children's Health Rotation): Variable |
| 2000 - Pres | Lecturer, Metabolism Clinical Rounds/Research Seminar: Presentations twice yearly |
| 2000 - Pres | Lecturer, Pediatric Endocrinology Journal Club: Presentations yearly |
| 2009 - Pres | Lecturer, Markey Course-Diabetes Module |
| 2009 - Pres | Facilitator, Medical Student Endocrinology and Metabolism Course, Small group |
| 2009 - Pres | Facilitator, Biology 5011- Ethics and Research Science, 6 hours/year |
| 2016 - Pres | Facilitator, Medical Student Endocrinology and Metabolism Course, Small group |
| 2016 - Pres | Lecturer, Cell Signaling Course, Diabetes module, 3 hours/year |

**Publications**


1. Hruz PW, Narasimhan C, Miziorko 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, Miziorko 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, Miziorko 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, Miziorko 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, Miziorko 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. Hruz PW, Murata H, Mueckler M. Adverse metabolic consequences of HIV protease inhibitor therapy: the search for a central mechanism. *Am J Physiol Endocrinol Metab*. 2001;280(4):E549-53. PMID:11254460
11. 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
12. 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
13. Murata H, Hruz PW, Mueckler M. Indinavir inhibits the glucose transporter isoform Glut4 at physiologic concentrations. *AIDS*. 2002;16(6):859-63. PMID:11919487
14. 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
15. 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
16. 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
17. 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
18. 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. PMCID:PMC1360159 PMID:16280693
19. Hruz PW. Molecular Mechanisms for Altered Glucose Homeostasis in HIV Infection. *Am J Infect Dis*. 2006;2(3):187-192. PMCID:PMC1716153 PMID:17186064

20. 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
21. Hruz PW, Yan Q. Tipranavir without ritonavir does not acutely induce peripheral insulin resistance in a rodent model. *J Acquir Immune Defic Syndr*. 2006;43(5):624-5. doi:10.1097/01.qai.0000245883.66509.b4 PMID:17133213
22. 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
23. 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 PMCID:PMC2680222 PMID:19373039
24. 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 PMCID:PMC3170409 PMID:19171928
25. 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 PMCID:PMC2712781 PMID:19509018
26. 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 PMCID:PMC2783673 PMID:19762785
27. 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 PMCID:PMC2978568 PMID:20864532
28. 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 PMCID:PMC2991544 PMID:20967828
29. 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 PMCID:PMC3179492 PMID:21966466
30. 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 PMCID:PMC3040766 PMID:21359201
31. 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 PMCID:PMC3067185 PMID:21245443
32. Hruz PW. Molecular mechanisms for insulin resistance in treated HIV-infection. *Best Pract Res Clin Endocrinol Metab*. 2011;25(3):459-68. doi:10.1016/j.beem.2010.10.017 PMCID:PMC3115529 PMID:21663839
33. 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 PMCID:PMC3178299 PMID:21813803
34. 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 PMCID:PMC3416696 PMID:22681646
35. 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 PMCID:PMC3686315 PMID:23795310
36. 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 PMCID:PMC4047383 PMID:24706759
37. Hruz PW. HIV and endocrine disorders. *Endocrinol Metab Clin North Am*. 2014;43(3):xvii-xviii. PMID:25169571
38. 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 PMID:25847249
39. 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 PMID:26402434
40. 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 PMCID:PMC4576095 PMID:26248369
41. Hruz PW. Commentary. *Clin Chem*. 2015;61(12):1444. PMID:26614228
42. 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 PMID:26905426
43. 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 PMID:27302065
44. 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. PMCID:PMC5119023 PMID:27736766
45. 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. PMCID:PMC5138640 PMID:27922102
46. Edwards, R, Brothers RC, Wang X, Maron MI, Tsang PS, Kraft TE, Hruz PW, Williamson KC, Dowd CS, Odom John AR. MEPicides: potent antimalarial prodrugs targeting isoprenoid biosynthesis *Sci Rep*. 2016;Submitted.

47. Shanmugam M, Heitmeier MR, Hruz PW and Schiltz G. Development of selective GLUT4 antagonists for treating multiple myeloma *J Med Chem*. 2016;Submitted.

**Invited Publications**

1. Hruz PW, Mueckler MM. Structural analysis of the GLUT1 facilitative glucose transporter (review). *Mol Membr Biol*. 2001;18(3):183-93. PMID: 11681785
2. Hruz PW, Murata H, Mueckler M. Adverse metabolic consequences of HIV protease inhibitor therapy: the search for a central mechanism. *Am J Physiol Endocrinol Metab*. 2001;280(4):E549-53. PMID: 11254460
3. 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
4. Hruz PW. Molecular Mechanisms for Altered Glucose Homeostasis in HIV Infection. *Am J Infect Dis*. 2006;2(3):187-192. PMCID: PMC1716153 PMID: 17186064
5. 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. PMCID: PMC3170411 PMID: 18566314
6. 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. PMCID: PMC2680222 PMID: 19373039
7. 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. PMCID: PMC3170409 PMID: 19171928
8. Hruz PW. Molecular mechanisms for insulin resistance in treated HIV-infection. *Best Pract Res Clin Endocrinol Metab*. 2011;25(3):459-68. PMCID: PMC3115529 PMID: 21663839
9. Hruz PW. HIV and endocrine disorders. *Endocrinol Metab Clin North Am*. 2014;43(3): xvii–xviii. PMID: 25169571
10. Hruz PW. Commentary. *Clin Chem*. 2015;61(12):1444. PMID: 26614228

**Book Chapters (most recent editions)**

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: Lippincott Williams and Wilkins; 2008:321-328.

# EXHIBIT B

## Exhibit B


1. Aitken, M., T.D. Steensma, R. Blanchard, D.P. VanderLaan, H. Wood, A. Fuentes, C. Spegg, L. Wasserman, et al., *Evidence for an altered sex ratio in clinic-referred adolescents with gender dysphoria.* J Sex Med, 2015. **12**(3): p. 756-63.
2. Aitken, M., D.P. VanderLaan, L. Wasserman, S. Stojanovski, and K.J. Zucker, *Self-Harm and Suicidality in Children Referred for Gender Dysphoria.* J Am Acad Child Adolesc Psychiatry, 2016. **55**(6): p. 513-20.
3. Beek, T.F., B.P. Kreukels, P.T. Cohen-Kettenis, and T.D. Steensma, *Partial Treatment Requests and Underlying Motives of Applicants for Gender Affirming Interventions.* J Sex Med, 2015. **12**(11): p. 2201-5.
4. Blanchard, R., K.J. Zucker, P.T. Cohen-Kettenis, L.J. Gooren, and J.M. Bailey, *Birth order and sibling sex ratio in two samples of Dutch gender-dysphoric homosexual males.* Arch Sex Behav, 1996. **25**(5): p. 495-514.
5. Blom, R.M., R.C. Hennekam, and D. Denys, *Body integrity identity disorder.* PLoS One, 2012. **7**(4): p. e34702. PMCID: PMC3326051.
6. Bradley, S.J., R. Blanchard, S. Coates, R. Green, S.B. Levine, H.F. Meyer-Bahlburg, I.B. Pauly, and K.J. Zucker, *Interim report of the DSM-IV Subcommittee on Gender Identity Disorders.* Arch Sex Behav, 1991. **20**(4): p. 333-43.
7. Bradley, S.J., B. Steiner, K. Zucker, R.W. Doering, J. Sullivan, J.K. Finegan, and M. Richardson, *Gender identity problems of children and adolescents: the establishment of a special clinic.* Can Psychiatr Assoc J, 1978. **23**(3): p. 175-83.
8. Bradley, S.J. and K.J. Zucker, *Gender identity disorder and psychosexual problems in children and adolescents.* Can J Psychiatry, 1990. **35**(6): p. 477-86.
9. Bradley, S.J. and K.J. Zucker, *Gender identity disorder: a review of the past 10 years.* J Am Acad Child Adolesc Psychiatry, 1997. **36**(7): p. 872-80.
10. Buu, A., A. Dabrowska, M. Mygrants, L.I. Puttler, J.M. Jester, and R.A. Zucker, *Gender differences in the developmental risk of onset of alcohol, nicotine, and marijuana use and the effects of nicotine and marijuana use on alcohol outcomes.* J Stud Alcohol Drugs, 2014. **75**(5): p. 850-8. PMCID: PMC4161704.
11. Cohen-Kettenis, P.T., A. Owen, V.G. Kaijser, S.J. Bradley, and K.J. Zucker, *Demographic characteristics, social competence, and behavior problems in children with gender identity disorder: a cross-national, cross-clinic comparative analysis.* J Abnorm Child Psychol, 2003. **31**(1): p. 41-53.
12. Cohen-Kettenis, P.T., S.E. Schagen, T.D. Steensma, A.L. de Vries, and H.A. Delemarre-van de Waal, *Puberty suppression in a gender-dysphoric adolescent: a 22-year follow-up.* Arch Sex Behav, 2011. **40**(4): p. 843-7. PMCID: PMC3114100.
13. Cohen-Kettenis, P.T., T.D. Steensma, and A.L. de Vries, *Treatment of adolescents with gender dysphoria in the Netherlands.* Child Adolesc Psychiatr Clin N Am, 2011. **20**(4): p. 689-700.
14. Cohen-Kettenis, P.T., M. Wallien, L.L. Johnson, A.F. Owen-Anderson, S.J. Bradley, and K.J. Zucker, *A parent-report Gender Identity Questionnaire for Children: A cross-national, cross-clinic comparative analysis.* Clin Child Psychol Psychiatry, 2006. **11**(3): p. 397-405.
15. Curran, G.M., S.F. Stoltenberg, E.M. Hill, S.A. Mudd, F.C. Blow, and R.A. Zucker, *Gender differences in the relationships among SES, family history of alcohol disorders and alcohol dependence.* J Stud Alcohol, 1999. **60**(6): p. 825-32.
16. Daniolos, P.T., *Gender identity: on being versus wishing.* J Am Acad Child Adolesc Psychiatry, 2013. **52**(6): p. 569-71.

17. Davis, G., *Normalizing Intersex: The Transformative Power of Stories.* Narrat Inq Bioeth, 2015. **5**(2): p. 87-9.
18. de Vries, A.L., T.A. Doreleijers, T.D. Steensma, and P.T. Cohen-Kettenis, *Psychiatric comorbidity in gender dysphoric adolescents.* J Child Psychol Psychiatry, 2011. **52**(11): p. 1195-202.
19. de Vries, A.L., J.K. McGuire, T.D. Steensma, E.C. Wagenaar, T.A. Doreleijers, and P.T. Cohen-Kettenis, *Young adult psychological outcome after puberty suppression and gender reassignment.* Pediatrics, 2014. **134**(4): p. 696-704.
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# EXHIBIT E

**UNITED STATES DISTRICT COURT**
**~~EASTERN~~ FOR THE MIDDLE DISTRICT OF**
**~~WISCONSIN~~FLORIDA**
**JACKSONVILLE DIVISION**

~~ASHTON WHITAKER~~DREW ADAMS, a minor, by and through his ~~mother and~~ next friend~~, MELISSA WHITAKER~~ and mother, ERICA ADAMS KASPER,

*Plaintiff,*

v.

~~KENOSHA UNIFIED SCHOOL DISTRICT NO. 1 BOARD OF EDUCATION and SUE SAVAGLIO-JARVIS, in her official capacity as Superintendent of the Kenosha Unified School District No. 1~~THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA,

*Defendant~~s~~.*

Civil Action No. 3:17-cv-00739-TJCJBT

~~Civ. Action No. 2:16-cv-00943~~

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**EXPERT DECLARATION of Paul W Hruz, M.D., Ph.D**

1. I have been retained by counsel for Defendants as an expert in connection with the above-captioned litigation. I have actual knowledge of the matters stated in this declaration. My professional background, experience, and publications are detailed in my curriculum vitae, a true and accurate copy which is attached as Exhibit A to this declaration.

2. I received my doctor of philosophy degree from the Medical College of Wisconsin in 1993. I received my medical degree from the Medical College of Wisconsin in 1994. I am an Associate Professor of Pediatrics in the Division of Pediatric Endocrinology and Diabetes at Washington University School of Medicine. I also have a secondary appointment as Associate Professor of Cellular Biology and Physiology in the Division of Biology and Biological Sciences at Washington University School of Medicine. I served as chief of the Division of Pediatric

Endocrinology and Diabetes at Washington University from 2012-2017. I served as the Director of the Pediatric Endocrinology Fellowship Program at Washington University from 2008-2016.

3. I am board certified in Pediatrics and Pediatric Endocrinology. I have been licensed to practice medicine in Missouri since 2000.

4. My professional memberships include the American Academy of Pediatrics, the Pediatric Endocrine Society, the Endocrine Society, and the American Association for Biochemistry and Molecular Biology.

5. I have extensive experience in treating infants and children with disorders of sexual development and am an active member of the multidisciplinary Disorders of Sexual Development (DSD) program at Washington University. The DSD Team at Washington University is part of the DSD-Translational Research Network, a national multi-institutional research network that investigates the genetic causes and the psychologic consequences of DSD.

6. In the nearly 20 years that I have been in clinical practice I have participated in the care of hundreds of children with disorders of sexual development. In the care of these patients, I have acquired expertise in the understanding and management of associated difficulties in gender identification.

7. In my role as the director of the Division of Pediatric Endocrinology at Washington University, I have extensively studied the existing literature related to the incidence, potential etiology and treatment of gender dysphoria as efforts were made to develop a Transgender clinic at Saint Louis Children's Hospital. I have participated in local and national meetings where the endocrine care of children with gender dysphoria has been discussed and debated. I have met individually with several pediatric endocrinologists, including Dr. Norman Spack, who have developed and led transgender programs in the United States. I have also met with parents of children with gender dysphoria to understand the unique difficulties experienced by this patient

population.

8. Pediatric patients referred to our practice for the evaluation and treatment of gender dysphoria are cared for by an interdisciplinary team of providers that includes a psychologist and pediatric endocrinologist who have been specifically chosen for this role based upon a special interest in this rare patient population. Due to serious concerns regarding the safety, efficacy, and ethics of the current treatment paradigm, I have not directly engaged in hormonal treatment of patients with gender dysphoria.

9. My opinions as detailed in this declaration are based upon my knowledge and direct professional experience in the subject matters discussed. The materials that I have relied upon are the same types of materials that other experts in my field of clinical practice rely upon when forming opinions on the subject. The documents that I have reviewed specifically related to this case are 1.) The ~~medical records for Savanah "Ash" Whitaker (AW0124-AW0223), 2.) the transcript of the deposition of medical expert witness Danial Shumer, MD, MPH, and 3.) the defendants' answer to plaintiffs~~ first amended complaint ~~filed on October 18, 2016.~~for declaratory, injunctive, and other relief for Drew Adams, 2.) The plaintiffs first amended rule 26(a) disclosure and 3.) Drew Adams' medical records. A list of the published literature I have relied on is attached as Exhibit B to this declaration.

10. Over my career, I have provided expert medical record review and testified at deposition in less than a dozen cases. ~~I have not given a deposition as an expert witness since 2012 and~~Related to the litigation of issues of sex and gender, I have been designated as an expert witness in *Joaquin Carcano et al vs. Patrick Mccrory, Jane Doe vs Board of Education of the Highland School District*, and *Ashton Whitaker vs. Kenosha Unified School District.* I have been deposed in the last of these cases. In the past 4 years I have also served as an expert witness in *Dakota Humphrey vs. Stanley Block* and *Liston Ward et al. vs. Janssen Pharmaceuticals.* I have never testified at trial.

11. I am being compensated at an hourly rate for actual time devoted, at the rate of $~~300~~350

per hour. My compensation does not depend on the outcome of this litigation, the opinions I express, or the testimony I provide.

**Case Details**

[redacted]

[redacted]

**Basic Terminology**

13. Biological sex is a term that specifically refers to a member of a species in relation to the member's capacity to either donate (male) or receive (female) genetic material for the purpose of reproduction. This remains the standard definition that has been accepted and used by scientists, medical personnel, and society in general.

14. Gender, a term that had traditionally been reserved for grammatical purposes, is currently used to describe the psychologic and cultural characteristics of a person in relation to biological sex. Gender therefore exists in reference to *societal* perceptions, not biology.

15. Gender identity refers to a person's individual perception of being male or female.

16. Sexual orientation refers to a person's arousal and desire for sexual intimacy with members of the male or female sex.

**Human sexuality in relation to fundamental biology and observed variations**

17. Sex is genetically encoded at the moment of conception due to the presence of specific DNA sequences (i.e. genes) that direct the production of signals that influence the formation of ~~the~~bipotential gonad to develop into either ~~into~~ a testis or ovary. This genetic information is normally present on X and Y chromosomes. Chromosomal sex refers to the normal complement of X and Y chromosomes (i.e. normal human males have one X and one Y chromosome whereas normal human females have two X chromosomes). Genetic signals are mediated through the activation or deactivation of other genes and through programmed

signaling of hormones and cellular transcription factors. The default pattern of development in the absence of external signaling is female. The development of the male appearance (phenotype) depends upon active signaling

processes.

18. For members of the human species, sex is normatively aligned in a binary fashion (i.e., either male or female) in relation to biologic purpose. Medical recognition of an individual as male or female is typically made at birth according to external phenotypic expression of primary sexual traits (i.e., presence of a penis for males and presence of labia and vagina for females).

19. Due to genetic and hormonal variation in the developing fetus, normative development of the external genitalia in any individual differs with respect to size and appearance while maintaining an ability to function with respect to biologic purpose (i.e. reproduction). Internal structures (e.g. gonad, uterus, vas deferens) normatively align with external genitalia.

20. Reliance upon external phenotypic expression of primary sexual traits is a highly accurate means to assign biologic sex. In over 99.9% of cases, this designation will correlate with internal sexual traits and capacity for normal biologic sexual function. Sex is therefore not "assigned at birth" but is rather recognized at birth.

21. Due the complexity of signals that are involved in normal sexual development, it is not surprising that a small number of individuals are born with defects in this process. Defects can occur either through inherited or *de nova* mutations in genes that are involved in sexual determination or through environmental insults during critical states of sexual development. Persons who are born with such abnormalities are considered to have a disorder of sexual development (DSD). Most often, this is first detected as ambiguity in the appearance of the external genitalia.

22. Normal variation in external genital appearance (e.g. phallic size) does not alter the basic biologic nature of sex as a binary trait. "Intersex" conditions represent disorders of normal

development, not a third sex.

23. Medical care of persons with DSDs is primarily directed toward identification of the etiology of the defect and treatment of any associated complications. Similar to other diseases, tools such as the Prader scale are used to stage the severity of the deviation from normal. In children with DSDs, characterization based upon phenotype alone does not reliably predict chromosomal sex nor does it necessarily correlate with potential for biological sexual function. Decisions on initial sex assignment in these rare cases require detailed assessment by a team of expert medical providers.

24. Standard medical practice in the treatment of persons with DSDs has evolved with growing understanding of the physical and psychologic needs and outcomes for affected individuals. Previously, it was felt that a definitive sex assignment was necessary shortly after birth with the belief that this would allow patients with DSDs to best conform to the assigned sex. Current practice is to defer sex assignment until the etiology of the disorder is determined and, if possible, a prediction can be made on likely biologic and psychologic outcomes. When this cannot be done with confidence, a presumptive sex assignment is made. Factors used in making such decisions include chromosomal sex, phenotypic appearance of the external genitalia, and parental desires. The availability of new information can in rare circumstances lead to sex reassignment. Decisions on whether to surgically alter the external genitalia to align with sex are generally deferred until the patient is able to provide consent.[1]

**Gender Dysphoria in relation to Biological Sex**

~~21.~~25. Although gender usually aligns with biological sex, some individuals experience discordance in these distinct traits. Specifically, biologic females may identify as males and biologic males may identify as females. As gender by definition is distinct from biological sex, one's gender identity does not change a person's biological sex.

~~22.~~26. Individuals who experience significant distress due to discordance between gender identity and sex are considered to have "gender dysphoria".[2] Although the prevalence of gender dysphoria has not been established by rigorous scientific analysis, estimates reported in in the DSM-V are between 0.005% to 0.014% for adult males and 0.002% to 0.003% for adult females. Thus, gender dysphoria is a rare condition. It is currently unknown whether these estimates are falsely low due to under-reporting, or if changing societal acceptance of transgenderism and the growing number of medical centers providing medical intervention for gender dysphoria affects the number of persons who identify as transgender. Recent data ~~suggests~~indicates that the number of people seeking care for gender dysphoria is increasing with some estimates as high as 420-fold.[3,4]

~~23.~~27. There is strong evidence against the theory that gender identity is determined at or before birth and is unchangeable. This comes from identical twin studies where siblings share genetic complements and prenatal environmental exposure but have differing gender identities.[5]

~~24.~~28. Further evidence that gender identity is not fixed comes from established peer-reviewed literature demonstrating that the vast majority (80-95%) of children who express gender dysphoria revert to a gender identity concordant with their biological sex by late adolescence.[6,7] It is not known whether individuals with gender dysphoria persistence have differing etiologies or severity of precipitating factors compared to desisting individuals.

[redacted]

~~25.~~30. The etiology of gender dysphoria in ~~these persons~~individuals with gender dysphoria remains to be identified. Theories include prenatal hormone exposure, genetic variation, and postnatal environmental influences. Based upon the currently available but incomplete dataset,

it is likely that gender dysphoria is multifactorial with differing qualitative and quantitative influences in any given individual.

~~26.~~31. The recently coined concept of "neurological sex" as a distinct entity or a basis for classifying individuals as male or female has no scientific justification. Limited emerging data has suggested structural and functional differences between brains from normal and transgender individuals. These data do not establish whether these differences are innate and fixed or acquired and malleable. The remarkable neuronal plasticity of the brain is known and has been studied extensively in gender-independent contexts related to health and disease, learning and behavior.

**Gender Ideology**

~~27.~~32. The modern attempt to equate gender identity with sex is not based upon sound scientific principles but rather is based upon ideology fueled by advocacy. Although worldviews among scientists and physicians, similar to society at large, differ, science is firmly grounded in physical reality not perception. The inherent link between human sexual biology and teleology is self-evident and fixed.

~~28.~~33. The claims of proponents of transgenderism, which include opinions such as "Gender ~~defines who one~~identity is ~~at his/her core~~the primary factor determining a person's sex" and "Gender is the only true determinant of sex" must be viewed in their proper philosophical context. There is no scientific basis for redefining sex on the basis of a person's psychological sense of 'gender'.

~~29.~~34. The prevailing, constant and accurate designation of sex as a biological trait grounded in the inherent purpose of male and female anatomy and as manifested in the appearance of external genitalia at birth remains the proper scientific and medical standard. Redefinition of the classification and meaning of sex based upon pathologic variation is not established medical fact.

**Potential Harm Related to Gender Dysphoria Treatments**

~~30.~~35. The fundamental purpose of the practice of medicine is to treat disease and alleviate suffering. An essential tenet of medical practice is to avoid doing harm in the process. Due to the frequent lack of clear and definitive evidence on how to best accomplish this goal, treatment approaches can and do frequently differ among highly knowledgeable, competent, and caring physicians.

~~31.~~36. Persons with gender dysphoria as delineated in the DSM-V experience significant psychological distress related to their condition with elevated risk of depression, suicide, and other morbidities. Thus, attempts to provide effective medical care to affected persons are clearly warranted.

~~32.~~37. Efforts to effectively treat persons with gender dysphoria require respect for the inherent dignity of those affected, sensitivity to their suffering, and maintenance of objectivity in assessing etiologies and long-term outcomes. Desistance (i.e. reversion to gender identity concordant with sex) provides the greatest lifelong benefit and is the outcome in the majority of patients and should be maintained as a desired goal. Any forced societal intervention that could interfere with the likelihood of gender dysphoria resolution is unwarranted and potentially harmful.

~~33.~~38. There is an urgent need for high quality controlled clinical research trials to determine ways to develop supportive dignity affirming social environments that maintain affirmation of biological reality. To date, three approaches have been proposed for managing children with gender dysphoria.[8] The first approach, often referred to as "conversion" or "reparative therapy", is directed toward actively supporting and encouraging children to identify with their biological sex. The second "neutral" approach, motivated by understanding of the natural history of transgender identification in children, is to neither encourage nor discourage transgender identification, recognizing that the majority of affected children if left alone will eventually realign their gender with their sex. The third "affirming" approach is to actively encourage

children to embrace transgender identity with social transitioning followed by hormonal therapy.

~~34.~~39. The gender affirming approach, which includes use of a child's preferred pronouns, use of sex-segregated bathrooms, other intimate facilities and sleeping accommodations corresponding to a child's gender identity, has limited scientific support for short-term alleviation of dysphoria and no long-term outcomes data demonstrating superiority over the other approaches. Claims that the other approaches have been scientifically disproven are false. Decades of research, most notably the pioneering work of Dr. Kenneth Zucker, have supported the efficacy of a more conservative approach for the majority of patients experiencing gender dysphoria.[8,9]

~~35.~~40. Feelings of anxiety, depression, isolation, frustration, and embarrassment are not unique to children with gender dysphoria, but rather are common to children who differ physically or psychologically from their peers. Difficulties are accentuated as children progress through the normal stages of neurocognitive and social development. In the clinical practice of pediatric endocrinology, this is most commonly seen in children with diabetes. Attempts to deny or conceal the presence of disease rather than openly acknowledge and address specific needs can have devastating consequences including death. With proper acknowledgment of the similarity and differences between children with gender dysphoria and other developmental challenges, prior experience can guide the development of effective approaches to both alleviate suffering and minimize harm to school aged children experiencing gender dysphoria.

~~36.~~41. The Endocrine Society published in 2009 clinical guidelines for the treatment of patients with persistent gender dysphoria.[10] The recommendations include temporary suppression of pubertal development of children with GnRH agonists (hormone blockers normally used for children experiencing precocious puberty) followed by hormonal treatments to induce the development of secondary sexual traits consistent with one's gender identity. This guideline was developed using the GRADE (Recommendations, Assessment, Development, and Evaluation) system for rating clinical guidelines. As directly stated in the Endocrine Society

publication, "the strength of recommendations and the quality of evidence was low or very low." According to the GRADE system, low recommendations indicate "Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate". Very low recommendations mean that "any estimate of effect is very uncertain". An updated set of guidelines was published in September of 2017.[11] The low quality of evidence presented in this document persist.

~~37.~~42. Clinical Practice Guidelines published by the World Professional Association for Transgender Health (WPATH), which is currently in its 7th iteration, similarly, though less explicitly, acknowledge the limitation of existing scientific data supporting their recommendations given and "the value of harm-reduction approaches".

~~38.~~43. Treatment of gender dysphoric children who experience persistence of symptoms with hormones (pubertal suppression and cross-hormone therapy) carries significant risk. It is generally accepted, even by advocates of transgender hormone therapy, that hormonal treatment results in sterility which in many cases is irreversible.[12] Emerging data also show that treated patients have lower bone density which may lead to increased fracture risk later in life.[13] Other potential adverse effects include disfiguring acne, high blood pressure, weight gain, abnormal glucose tolerance, breast cancer, liver disease, thrombosis, and cardiovascular disease.[14]

~~39.~~44. Since strategies for the treatment of transgendered children as summarized by the Endocrine Society guidelines are relatively new, long-term outcomes are unknown. Evidence presented as support for short term reductions in psychological distress following social transition in a "gender affirming" environment remains inconclusive. When considered apart from advocacy based agendas, multiple potential confounders are evident. The most notable deficiencies of existing research are the absence of proper control subjects and lack of randomization in study design. Although appropriate caution is warranted in extrapolating the outcomes observed from prior studies with current treatments, adults who have undergone social transition with or without surgical modification of external genitalia continue to have rates of

depression, anxiety, substance abuse and suicide far above the background population.[15,16]

~~40.~~45. Evidence cited to support societal measures that promote or encourage gender transition, including the plaintiffs demand for use of ~~preferred pronouns by teachers and the use of public~~multi-user sex-segregated restrooms~~, other intimate facilities and sleeping accommodations~~ corresponding with the plaintiff's gender identity, as a medically necessary treatment for gender dysphoria is limited. Recent studies reporting reductions in dysphoria following social transition of adolescent patients are small, poorly controlled and of insufficient duration to draw definitive conclusions regarding long-term efficacy. Long-term follow up of patients with gender dysphoria who have undergone social and hormonal transition with or without surgical intervention has shown persistent psychological morbidity far above non-transgendered individuals with suicide attempts 7-fold and completed suicides19-fold above the general population.[15,16]

~~41.~~46. Of particular concern is the likelihood that forced societal affirmation including a requirement that the ~~Kenosha Unified~~St. John's County School District allow students to use sex-segregated bathrooms corresponding to gender identity rather than access to single unit facilities~~ or provision of sleeping accommodations based upon gender identity rather than sex~~, will interfere with known rates of gender resolution. Any activity that encourages or perpetuates transgender persistence for those who would otherwise desist can cause significant harm, particularly in light of the current treatment paradigm for persisting individuals. As noted, permanent sterility can be expected with hormonal or surgical disruption of normal gonadal function. This is particularly concerning given that children are likely incapable of making informed consent to castrating treatments.[17]

~~42.~~47. Dignity affirming support for adolescents with gender dysphoria does not necessitate facilitation of a false understanding of human sexuality in schools. Rather, policy requirements that can increase persistence of transgender identification have significant potential for inducing long-term harm to affected children.

~~43.~~48. There remains a significant and unmet need to better understand the biological,

psychological, and environmental basis for the manifestation of discordance of gender identity and biological sex in affected individuals.[18] In particular, there is a concerning lack of randomized controlled trials comparing outcomes of youth with gender dysphoria who are provided mandated access to sex-segregated bathroom facilities corresponding with gender identity to youth provided single user facilities. This includes understanding of how forced public encouragement of social gender transition affects the usual progression to resolution of gender dysphoria in affected children. Such studies can be ethically designed and executed with provision of other dignity affirming measures to both treatment groups. Without this scientific evidence, it is impossible to assert that the approach using sex-segregated bathrooms is an essential component of treatment.

49. Limitations on this report: My opinions and hypotheses in this matter are subject to the limitations of all documentary and related evidence, the impossibility of absolute prediction, as well as the limitations of social and medical science. I have not met with, nor interviewed, plaintiff Drew Adams. As always, I have no expert opinions regarding the veracity of witnesses in this case. I have not yet reviewed all of the evidence in this case and my opinions are subject to change at any time as new information becomes available to me. Only the trier of fact can determine the credibility of witnesses and how scientific research may or may not be related to the specific facts of any particular case. A key role of an expert witness is to help the court, lawyers, parties, and the public understand and apply reliable scientific, technical, and investigative principles, hypotheses, methods, and information. I have transmitted this confidential expert report directly to attorney Michael Spellman, for distribution as consistent with the relevant laws.

Pursuant to 28 U.S.C § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

# EXHIBIT F

**UNITED STATES DISTRICT COURT**
**FOR THE MIDDLE DISTRICT OF FLORIDA**
**JACKSONVILLE DIVISION**

DREW ADAMS, et al.,

*Plaintiff*,

v.

THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA,

*Defendant*.

**No. 3:17-cv-00739-TJC-JBT**

**DECLARATION OF DR. NORMAN P. SPACK, M.D.**

I, Norman P. Spack, pursuant to 28 U.S.C. § 1746, hereby declare as follows:

1. I am over the age of eighteen and submit this declaration based on my personal knowledge.

2. If called to testify, I would testify truthfully based on my own experience and knowledge regarding the matters discussed herein.

3. I am a pediatric endocrinologist. I began practicing pediatric endocrinology in 1976 at Boston Children's Hospital. I have an undergraduate degree from Williams College, a medical degree from the University of Rochester, and completed my pediatrics residency and fellowship in Pediatric Endocrinology and Adolescent Medicine at Boston Children's Hospital.

4. I am an Associate Physician in Medicine at Boston Children's Hospital, the Co-Founder and Co-Director *Emeritus* of the Gender Management Service (GeMS) Program at Boston Children's Hospital, and an Associate Clinical Professor of Pediatrics at Harvard Medical School in Massachusetts.

5. In 2007, I co-founded the GeMS Program at Boston Children's Hospital. The first-of-its-kind program in the United States, GeMS provides comprehensive care to the unique group of gender nonconforming and transgender children and adolescents. The GeMS team consists of providers from Endocrinology, Psychology, and Social Work, and works closely with specialists in other departments in the hospital such as Adolescent Medicine, Urology, and Plastic Surgery to develop individual care plans that meet every child's medical and emotional needs, as well as the family's need for information and support.

6. Since its founding, the GeMS Program has been replicated by over 60 similar programs at pediatric academic centers in North America, including the now Transgender Center at St. Louis Children's Hospital.

7. In 2012, I was awarded a Bicentennial Medal by Williams College in recognition for distinguished achievement in the field of pediatric endocrinology and for helping reduce the suicide rate among transgender adolescents through my work with GeMS.

8. On or about October 9, 2013, I gave a presentation at St. Louis Children's Hospital regarding the founding of GeMS, the workings of a gender management program at pediatric hospital, and the medical treatment and care of ender nonconforming and transgender children and adolescents.

9. Following my presentation, I privately met with medical staff, including endocrinologists, at St. Louis Children's Hospital to answer their questions and share my knowledge and experience.

10. It was in the aforementioned context that I also met privately with Dr. Paul W. Hruz at St. Louis Children's Hospital when he approached me after my presentation.

11. During my private meeting with Dr. Hruz, Dr. Hruz directly expressed that he had "a significant problem with the entire issue" and "whole idea of transgender."

12. Dr. Hruz followed up his comments by stating, "For me, it is a matter of my faith."

13. During our conversation, Dr. Hruz did not discuss or mention that his issues or concerns were based on science.

14. In my experience, someone who acts out of science would go and see how gender management clinics work in order to form their opinions.

This declaration was executed on this ___ day of December, 2017 in Boston, Massachusetts.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

_____

Norman P. Spack, M.D.

9. Following my presentation, I privately met with medical staff, including endocrinologists, at St. Louis Children's Hospital to answer their questions and share my knowledge and experience.

10. It was in the aforementioned context that I also met privately with Dr. Paul W. Hruz at St. Louis Children's Hospital when he approached me after my presentation.

11. During my private meeting with Dr. Hruz, Dr. Hruz directly expressed that he had "a significant problem with the entire issue" and "whole idea of transgender."

12. Dr. Hruz followed up his comments by stating, "For me, it is a matter of my faith."

13. During our conversation, Dr. Hruz did not discuss or mention that his issues or concerns were based on science.

14. In my experience, someone who acts out of science would go and see how gender management clinics work in order to form their opinions.

This declaration was executed on this 5 day of December, 2017 in Boston, Massachusetts.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Norman P. Spack, M.D.

# EXHIBIT G

UNITED STATES DISTRICT COURT
FOR THE
MIDDLE DISTRICT OF FLORIDA

DREW ADAMS, a minor, )
)
Plaintiff, )
)
vs. )Civil Action
)No.3:17-cv-00739-TJC-JBT
THE SCHOOL BOARD OF ST. JOHNS COUNTY, FLORIDA, )
)
Defendant. )

TELEPHONIC DEPOSITION OF KIM G. HUTTON
Taken on behalf of Defendant
December 5, 2017
(Starting time of the deposition: 3:00 p.m.)

I N D E X O F E X A M I N A T I O N



(No exhibits were marked.)

UNITED STATES DISTRICT COURT
FOR THE
MIDDLE DISTRICT OF FLORIDA

DREW ADAMS, a minor, )
)
Plaintiff, )
)
vs. )Civil Action
)No.3:17-cv-00739-TJC-JBT
THE SCHOOL BOARD OF ST. )
JOHNS COUNTY, FLORIDA, )
)
Defendants. )

TELEPHONIC DEPOSITION OF WITNESS, KIM G. HUTTON, produced, sworn, and examined on the 5th day of December, 2017, between the hours of nine o'clock in the forenoon and six o'clock in the evening of that day, at the offices of Veritext Legal Solutions, 515 Olive Street, Suite 300, St. Louis, Missouri before BRENDA ORSBORN, a Certified Court Reporter within and for the State of Missouri, in a certain cause now pending in the United States District Court for the Middle District of Florida, wherein Drew Adams, a minor, is the Plaintiff and The School Board of St. Johns County, Florida is the Defendant.

A P P E A R A N C E S

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IT IS HEREBY STIPULATED AND AGREED, by and between Counsel For Plaintiff and Counsel for Defendant that the TELEPHONIC DEPOSITION OF KIM G. HUTTON, may be taken in shorthand by Brenda Orsborn, a Certified Court Reporter, and afterwards transcribed into typewriting; and the signature of the witness is expressly not waived.

* * * * *

KIM G. HUTTON,

of lawful age, being produced, sworn and examined on behalf of the Defendant, deposes and says:

EXAMINATION

QUESTIONS BY MR. HARMON:

Q. Good afternoon, Ms. Hutton. My name is Terry Harmon, and I am an attorney for the St. John's County School Board. I know we've never talked or met before, but is it possible, and I know because I'm appearing telephonically, other than the court reporter and Ms. Hutton and Mr. Gonzalez-Pagan, is there anyone else in the room?

A. No, there's not.

Q. Okay. Okay. I just wanted to make sure.

A. Uh-huh.

Q. Ms. Hutton, have you ever been deposed before?

center in St. Louis.

And that's how that happened. Dr. Hruz e-mailed me -- it's either the same day or the next day, and invited me to lunch.

Q. Where did you go -- did you end up going to lunch?

A. We did.

Q. Where did you go?

A. At the Wild Flower in the Central West End.

Q. And what -- you said it was in 2013?

A. Yes.

Q. Do you recall what month?

A. October.

Q. Okay. Was anybody else at the lunch?

A. No.

Q. Do you recall approximately how long the lunch was?

A. Maybe 45 minutes.

Q. Was your conversation recorded?

A. No.

Q. I guess, to your knowledge, you may not know, right?

A. To my knowledge. I did not record it.

Q. Okay. What -- what did you -- when you were going to have that lunch with Dr. Hruz, what was the

purpose of it, in your mind?

A. Well, the e-mail that he sent me stated that he wanted to meet to -- I think he kind of positioned it as wanting to learn more about this experience, and he shared that he -- he was well aware that Dr. Abby Hollander was working with me, or that I had approached her about starting a pediatric gender center inside the hospital, and that he was having great difficulty being open to that concept based on his morals.

He said that he did not -- part of the note I remember said something about he did not agree with the -- the recommended standards of care, or something like that, for our children, that he didn't believe that it was appropriate medically or spirit -- or that it -- or that it wouldn't meet their spiritual needs, or something like that.

And so I realized -- I realized -- I felt like it was going to be not a great meeting, but I was still willing to meet with him because I felt that maybe, you know, the parent perspective could be helpful to him.

Q. Now, was that document, was that in an e-mail that he conveyed that information to you?

A. Yes.

Q. Do you still have that e-mail?
A. I do.
Q. Okay. Have you shown that e-mail to counsel in the room?
A. I did.
Q. Do you have it with you now?
A. I don't.
Q. Okay. To the best of your knowledge, can you tell me everything, aside from what you've already told me, that that e-mail says in it?
A. Those -- those were the sticking points for me, because I found it very odd that he would be talking about faith or morals or spiritual needs in the context of this conversation. It was not -- I talk to many medical professionals in my work with TransParent, and it's the first time that somebody was so overtly upfront that it was problematic due to their faith on some -- at least on some level. So I can't remember it. It wasn't -- it was longer -- the -- the note was longer than that, but those were the points that have stuck out with me.
Q. Okay. Other than that e-mail, do you have any other document that reflects communication you have had with Dr. Hruz?
A. There's -- I mean, after he e-mailed me, I

e-mailed him and told him that I, you know, was very excited to meet with him, although I was -- you know, I think I expressed some disappointment because Dr. Spack had shared that he was, you know, I guess against a pediatric gender center at St. Louis Children's Hospital and -- but that, you know, I was -- I would be very happy to have the conversation or something like that. And then he e-mailed me back and said, "Thank you for responding so quickly," and he would have his secretary reach out to me to set a date and time.

Q. Okay. So this meeting that you were going to have with him that ended up being a lunch, was any part of that meeting in the context of receiving medical care, opinions or services?

A. No.

Q. Okay. Were you going to learn anything from Dr. Hruz you would personally use with you or your family members when it comes to treatment for any type of disorders?

A. No.

Q. Was it just to learn about Dr. Hruz's position on the pediatric gender center at the Washington University?

A. Well, he called the meeting, so I -- I --

again, I really wanted to go, because I understood that he had a lot of influence on whether or not the center moved forward. And I had been talking with other doctors and people on their DSD team at St. Louis Children's Hospital about moving this forward, but it really had stalled.

And so I -- I just felt like being the head of Endocrine, that he would have a lot of influence over that decision. And so for me, that is why I wanted to go and meet with him, to see if I could say anything that would might make -- that might make him more interested in doing something like that.

Q. So would you characterize this as a business meeting?

A. Not really. I'm -- not really. I guess -- I guess --

Q. Were you hoping to come away from that meeting with some type of support from Dr. Hruz for the establishment of the pediatric gender center?

A. I guess I just felt like all of the treatment for our kids was going through a person that reported to Dr. Hruz. And so I guess I felt like he may not have enough information to support it or not support it. He wasn't seeing any of our kids. There -- there were only a handful of our kids at the

time.

You know, this is four years ago before everything really opened up in St. Louis as far as treatment and care for kids. But I just understood that he -- and especially since he had already said in his e-mail that he didn't support the center, I guess I was hopeful that the parent perspective might be helpful.

Q. Okay. Now, did I understand you to say that you were aware that Dr. Hruz was providing treatment to your -- when you say "our kids," are you referring to TransParent --

A. Yes.

Q. -- members' kids?

A. Yes.

Q. Okay. So to your knowledge, as of 2013, to your knowledge, was Dr. Hruz treating transgender children?

A. He was not, that I -- to my knowledge.

Q. Okay. So in terms of that -- that lunch meeting, can you tell me everything you can remember from the meeting?

A. Yes.

MR. GONZALEZ-PAGAN: Form.

Q. (By Mr. Harmon) Well, let me ask it a

different way. Can you tell me, to the best of your recollection, everything Dr. Hruz said to you during the lunch meeting?

MR. GONZALEZ-PAGAN: Form. You can answer.

THE WITNESS: Oh.

Q. (By Mr. Harmon) Yeah, you can answer.

A. Yeah. So after, you know, introducing ourselves I started off with trying to tell him a little bit about my family and our experience, but I -- I really didn't get very far. He interrupted me fairly quickly, probably within a minute or so, two minutes tops, and said that he had reviewed my brochure from TransParent and that he knew that my aim was to normalize the transgender experience, but that it would never be a normal experience. It was not a normal experience, and it would never be normal.

We went on to talk more about, you know, his -- he -- he actually started talking about Pope John Paul II's writings on gender and -- and how they explain God's plan for gender, and that I should consider reading them. And he said, you know, this idea that -- the idea of doing surgeries on transgender people is -- is wrong, that, you know, we should not be, you know, changing bodies.

And I said -- I -- I argued with him on that

point that, you know, there are men that have man boobs, and I said they have theirs surgically removed or altered. And I said wouldn't that be the same thing, and -- and why is that okay, but not removing the breast for a transgender boy, and he said, "Because male breasts aren't used for anything, but female breasts lactate and provide nourishment to babies. So, therefore, it would be -- it would go against, you know, God's plan to remove breasts from women." Something -- something very close that.

He said several times during this conversation, as I tried to tell him, you know, how hard it was for my child living a transgender life, you know, but that -- but what a great -- what a great son I've had since I allowed him to transition, how happy he was. And he said that, you know, what a -- I kept saying, "What a normal life -- like if you met my son, you would never know. He's a very normal little boy."

And he kept saying, he kept insisting that my child was not normal and would never be normal. And he said that to me at least three or four times during our conversation.

He said -- and -- and at the same time he just kept saying, "If only you would read Pope John

Paul II's writings. If only you would read them, you would understand everything." And I said, "Well, you know, the Bible tells a story about, you know, man was -- woman was created from the rib of man," and I said, "You know, maybe this all started with Adam and Eve because God took a rib from a woman -- or from a man and put it into women, and maybe he crossed that DNA, you know, at the very beginning, and maybe that's why we have transgender people."

He said -- he got very irritated with me, and he said, "Not all the stories in the Bible are true."

And I said, "Well, then how do you decide which ones you're going to believe and which ones you're not? How do you determine that, like, which ones you follow and which ones you don't follow?"

And he -- he reverted right back to -- he goes, "You just need to read Pope John Paul II's writings on gender. It will -- it will explain it all to you."

And I said, "Do you realize that kids like mine are at a 41 percent risk of suicide if they don't have acceptance and -- and care from their parents and -- and if they don't get their medical needs met?"

And he said, "Some children are born in this

world to suffer and die." And he said, "Do you think I don't ask myself all the time why some people get cancer?" He goes, "I -- I ask myself that all the time."

And I said, "Well, people with cancer, at least we try to help them. At least we give them care." And I think the conversation ended shortly after that, and he stood up, and he said, "I -- I have to tell you there will never be a pediatric gender center at St. Louis Children's Hospital. I won't allow it." And I --

Q. Did he say why?

A. Pardon me?

Q. Did he say why he would not allow it?

A. Well, based on every -- no, he did not say why. That's how he ended the conversation, but my interpretation would have been based on everything we -- he had just shared with me that he was in disagreement from -- based on his faith.

Q. Did he ever say that he would not allow a gender center because of his faith?

A. He did not.

Q. Okay. That was your interpretation of --

A. Yes.

Q. -- what the conversation was?

A. I am.
Q. How are you aware of what his position is now?
A. I saw a -- some papers that he's publishing, and I understand that he is involved in other cases involving students, so Internet searches.
Q. Did your conversation with Dr. Hruz anger you?
A. My conversation?
Q. Yes.
A. It -- it perplexed me. I found --
Q. Why did it perplex you?
A. Again, because it was so religious-based. I -- I was very taken off guard by the religious tone of the conversation, because I -- I figured it would at least be based on science. He would have some science behind his feelings over children like mine, but that is not what I heard in our conversation at all.
Q. So your conversation with Dr. Hruz, is it fair to say that it was based on religion and moral viewpoints as opposed to science?
A. Yes.
MR. GONZALEZ-PAGAN: Form.
Q. (By Mr. Harmon) What was the answer?