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No. 1-18-0294

IN THE APPELLATE COURT OF ILLINOIS
FIRST APPELLATE DISTRICT

NOVA MADAY,

Plaintiff-Appellant,

v.

TOWNSHIP HIGH SCHOOL DISTRICT 211,

Defendant-Appellee,

and

STUDENTS AND PARENTS FOR PRIVACY, a voluntary unincorporated association,

Intervenor-Appellee.

Appeal from the Circuit Court of Cook County, Illinois, County Department, Chancery Division

Case No. 17 CH 15791

Hon. Thomas R. Allen,
Judge Presiding

BRIEF OF *AMICI CURIAE* PAUL R. MCHUGH, M.D., AND PAUL W. HRUZ, M.D., PH.D., IN SUPPORT OF TOWNSHIP HIGH SCHOOL DISTRICT 211 AND STUDENTS AND PARENTS FOR PRIVACY

GERARD V. BRADLEY*
NOTRE DAME LAW SCHOOL
3156 Eck Hall of Law
Notre Dame, IN 46556
(574) 631-8385
Gerard.V.Bradley.16@nd.edu

SHAREE S. LANGENSTEIN
IL ARDC #6256848
THE LANGENSTEIN LAW OFFICE
308 N. 9TH ST.
Murphysboro, IL 62966
(618) 528-0030
ShareeLangenstein@yahoo.com

Pro Hac Vice application forthcoming

Attorneys for Amici Curiae

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INTEREST OF *AMICI CURIAE*

Amicus curiae Paul R. McHugh, M.D. is the University Distinguished Service Professor of Psychiatry at the Johns Hopkins University School of Medicine. From 1975 until 2001, Dr. McHugh was the Henry Phipps Professor of Psychiatry and the director of the Department of Psychiatry and Behavioral Science at Johns Hopkins. At the same time, he was psychiatrist-in-chief at the Johns Hopkins Hospital with overall responsibility for the proper care and treatment of patients with, among other issues, sexual disorders.

Amicus curiae Paul W. Hruz, M.D., Ph.D. is Associate Professor of Pediatrics and Chief of Pediatric Endocrinology at Washington University School of Medicine. He also holds an appointment as Associate Professor of Cell Biology and Physiology. Dr. Hruz is an active member of the Washington University Disorders of Sexual Development ("DSD") Interdisciplinary Team. Over the past twenty years, Dr. Hruz has participated in the care of hundreds of children with DSDs.

Drs. McHugh and Hruz, appear as *amici* to critically evaluate, on the basis of their clinical and scientific expertise, Maday's proposal that school districts (and other affected entities) enforce policies and practices to affirm the self-determined gender of adolescent students who are struggling with gender dysphoria or claim a gender that differs from their biological sex. These policies include providing those children with full access to sex-separated, multi-user privacy facilities—including restrooms, showers, locker rooms and

overnight accommodations on school trips—according to their self-identified gender.

Amici do not in this Brief address the considerable distress that a young girl is likely to experience if she encounters someone who identifies as having a feminine gender, but whose sex is male in a privacy facility. *Amici* instead focus on the children these policies are intended to help – those (like Appellant) who are "transgendered" in that they have an insistent, persistent and consistent identification as the opposite sex.

Amici consider the medical and scientific evidence bearing upon the question: Do Maday's proposed legal requirements help or harm these vulnerable and needy children?

SUMMARY OF ARGUMENT

Amici are physician scientists who do not hold themselves out as experts in any area of the law, including statutory construction. They proffer no account of the Illinois legislature's intent in adopting nondiscrimination provisions. *Amici* leave the legal arguments to others.

Amici nonetheless observe that the legal issues in this lawsuit involve construing the terms sex and gender. *Amici* further observe that, for the duration of their long professional careers (McHugh graduated from Harvard Medical School in 1956 and Hruz has treated sexual disorders in children for over twenty years), the term sex has almost invariably referred to one's being male or female in the objective, biological sense. *Amici* note too that the term gender came into use to indicate something quite different from sex – namely,

a society's expectations for how males and females should behave. Sex is innate, fixed, and binary; gender is a fluid cultural construct.

Amici do not claim to know exactly how or why Maday came to so thoroughly confuse sex and gender (or to transpose them, as if gender were innate and fixed at birth, while sex was malleable and the body configurable to one's sense of gender identity).[1] But this confusion is surely founded, at least in part, upon a host of mostly unsupported, and some glaringly mistaken, assertions regarding what the contemporary scientific research has shown.

Maday maintains that, although in every biological and physiological way a boy, she is really a girl.[2] But gender is culturally defined. Currently in the United States, it is defined as a persistent identification with a set of norms promoted by society as the behaviors, attitudes, and preferences associated with each sex. The definition is not biological. Choosing to live in accord with a specified gender neither is caused by nor causes any biological changes. There is no credible scientific literature that suggests that a person's perception of gender affects their biology in any way. One's sense of self and one's desire to

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[1] *See*, *e.g.*, A065 ¶ 4 (emphasis added) (stating "I have known since I was very young that *I am female*" but acknowledging "the *male designation* that [Maday] was given at birth.").

[2] Maday avers being designated "male . . . at birth" and recounts "avoid[ing] mirrors and photographs, because [Maday] did not want to see [self-] images . . . as a boy" because Maday "knew that [Maday is] a girl." A065, ¶¶ 4-5; *see also* A067 (taking issue with the schools "message" as conveying that Maday is "not a 'real' girl").

present to others as a member of the opposite sex have no bearing upon the objective biological reality that one is male or female.

Amici do not discount that many people, including some children, experience disquiet with their sex. Some feel a distressing and persisting incongruity between their sex and their sense of themselves as male or female. Because gender dysphoria—no matter how much it disturbs an individual—does not affect the objective reality of the individual's sex being imprinted and continuous from the time of conception, mandating the treatment that Maday suggests is similar to mandating that a person suffering from anorexia nervosa be affirmed in the belief that she is overweight when in reality she is dangerously underweight. *Amici* thus differ from Maday and Maday's *amici* in their approach to the question of how to treat children and adolescents, who, like Maday,[3] suffer from a psychological disorder.[4] More exactly, *amici* critically evaluate the scientific bases, if any, for the gender-affirming policies that Maday alleges are required by law.

According to Maday, school districts must treat students in accordance with their asserted gender identity instead of their biological sex. There is, however, no compelling scientific evidence that such a gender-affirming mandate is beneficial to the children it aims to help.

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[3] Although Maday is a legal adult, A064, Maday proposes policies that would apply to all students in Township High School District, the vast majority of which are legal minors.

[4] In this Brief, *amici* leave aside all questions about how best to treat gender dysphoria in postadolescents.

In fact, and to the contrary, there is abundant scientific evidence that (1) the policy Maday urges this Court to enforce does none of the children it is meant to serve any real or lasting good; (2) it harms the vast majority of them; and (3) it leads to catastrophic outcomes for many such afflicted children.

Amici conclude, based upon decades of academic study and clinical experience in the fields of psychiatry, psychology, and the biological bases of both of those fields, that the policies advocated by Maday are a scientifically unwarranted, dangerous experiment upon our nation's children, with no apparent consideration at all of its far-reaching implications.

ARGUMENT

I. A Child's *Gender Identity* Has No Bearing on His or Her *Sex*.

Sex and gender represent two very distinct features of our world. While sex is binary and objective, determined fundamentally by one's chromosomal constitution, and ultimately by clearly defined reproductive capacities, gender is a subjective sense of a social role generated by cultural norms. Maday maintains that one's subjective sense of self – i.e., Maday's gender identity – is and should be accepted as one's sex. That is simply not the case.

The central underlying basis for sex is the distinction between the reproductive roles of males and females. *See* Lawrence S. Mayer and Paul R. McHugh, *Sexuality and Gender: Findings from the Biological, Psychological, and Social Sciences*, New Atlantis, Fall 2016, at 89-90. In biology, an organism is male or female if it is biologically and physiologically designed to perform one of the respective roles in reproduction. This definition does not depend

upon amorphous physical characteristics or behaviors; it requires understanding the reproductive system and its processes. Reproductive roles provide the conceptual basis for the differentiation of animals into the biological categories of male and female. There is no other widely accepted biological classification for the sexes. But one's reality as male or female is more than a matter of internal or external reproductive anatomy. Sex is a physiological reality which permeates every cell of an organism.

Sex is thus innate and immutable. The genetic information directing development of male or female gonads and other primary sexual traits, which normally are encoded on chromosome pairs "XY" and "XX," are present immediately upon conception. As early as eight weeks' gestation, endogenously produced sex hormones cause prenatal brain imprinting that ultimately influences postnatal behaviors. *See* Francisco I. Reyes et al., *Studies on Human Sexual Development*, 37 J. of Clin. Endocrinology & Metabolism 74-78 (1973); Michael Lombardo, *Fetal Testosterone Influences Sexually Dimorphic Gray Matter in the Human Brain*, 32 J. of Neuroscience 674-80 (2012); P.C. Sizonenko, *Human Sexual Differentiation*, Geneva Foundation for Medical Education and Research (2017), available at http://www.gfmer.ch/Books/Reproductive_health/Human_sexual_differentiation.html. It is therefore not the reproductive system alone that carries one's sexual identity. Every cell in the body is marked with a sexual identity by its chromosomal constitution XX or XY.

Thus, sex is not "assigned" at birth, as Maday suggests; rather, it "declares itself anatomically in utero and is acknowledged at birth." Michelle A. Cretella, *Gender Dysphoria in Children and Suppression of Debate*, 21 J. of Am. Physicians & Surgeons 50, 51 (2016). A baby's sex – male or female – is recognized and recorded at birth.

In contrast, gender has come to refer to "the socially constructed roles, behaviors, activities, and attributes that a given society considers appropriate for boys and men or girls and women," which "influence the ways that people act, interact, and feel about themselves." American Psychological Association, *Answers to Your Questions About Transgender People*, *Gender Identity and Gender Expression* (2011), available at http://www.apa.org/topics/lgbt/transgender.pdf. A child's gender reflects the extent to which he or she conforms to or deviates from socially normative behavior for boys or girls.

When it is defined in this manner, gender is fuzzy and mercurial. There is no objective definition for what it means to behave like a boy or a girl. Moreover, what is considered gender-typical behavior for boys and girls changes over time within a given culture[5] and varies between cultures. A girl who behaves like a tomboy may modify her behavior as she ages, and a boy

[5] Just a few decades ago, in the United States it would have been atypical for women to attend law school or medical school. It is projected that women will outnumber men in law schools in 2017. Debra Cassens Weiss, *Women Could Be a Majority of Law Students in 2017; These Schools Have 100-Plus Female Majorities*, ABA Journal, Mar. 16, 2016, http://www.abajournal.com/news/article/women_could_be_majority_of_law_students_in_2017_these_schools_have_100_plus.

who prefers quiet play may eventually develop an interest in sports or hunting. Consequently, gender is a fluid concept with no truly objective meaning. Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity* 6-7 (1990) (stating that "[g]ender is neither the causal result of sex nor as seemingly fixed as sex," but rather "a free-floating artifice, with the consequence that *man* and *masculine* might just as easily signify a female body as a male one, and *woman* and *feminine* a male body as easily as a female one") (emphases in original).

II. *Gender Dysphoria* Is a Psychological Disorder Distinguished by Confused and Distressed Thinking About the Reality of One's Sex.

A gender dysphoric child or adolescent such as Maday experiences a marked sense of incongruity between the gender expectations linked to the adolescent's biological sex and the adolescent's biological sex itself. Tomer Shechner, *Gender Identity Disorder: A Literature Review from a Developmental Perspective*, 47 Isr. J. of Psychiatry & Related Sci. 132-38 (2010). Gender dysphoric boys subjectively feel as if they are girls, and gender dysphoric girls subjectively feel as if they are boys – according to their sense (at whatever stage of childhood they happen to be) of what that feeling of being a member of the opposite sex must be like. *See* American Psychiatric Association, *Diagnostic & Statistical Manual of Mental Disorders* [hereinafter, "DSM-5"] 452 (5th ed. 2013).

Yet those subjective feelings, strong as they may be, cannot and do not constitute (or transform) objective reality. Cretella, *supra*, at 51 ("[T]his 'alternate perspective' of an 'innate gender fluidity' arising from prenatally

'feminized' or 'masculinized' brains trapped in the wrong body is an ideological belief that has no basis in rigorous science."); J. Michael Bailey and Kiira Triea, *What Many Transsexual Activists Don't Want You to Know and Why You Should Know It Anyway*, 50 Perspectives in Biology & Med. 521-34 (2007) (finding little scientific basis for the belief that male-to-female transsexuals are women trapped in men's bodies). A gender dysphoric girl is not a boy trapped in a girl's body, and a gender dysphoric boy is not a girl trapped in a boy's body.[6] Appellant is a boy, even though he feels the way he thinks a girl feels.

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[6] Studies of brain structure and function have not demonstrated any conclusive, biological basis for transgenderism. *See* Giuseppina Rametti *et al.*, *White Matter Microstructure in Female to Male Transsexuals Before Cross-sex Hormonal Treatment. A Diffusion Tensor Imaging Study*, 45 J. of Psychiatric Res. 199-204 (2011) (offering no evidence to support the hypothesis that transgenderism is caused by differences in the structure of the brain); Giuseppina Rametti *et al.*, *The Microstructure of White Matter in Male to Female Transsexuals Before Cross-sex Hormonal Treatment. A DTI Study*, 45 J. of Psychiatric Res. 949-54 (2011) (same); Emiliano Santarnecchi *et al.*, *Intrinsic Cerebral Connectivity Analysis in an Untreated Female-to-Male Transsexual Subject: A First Attempt Using Resting-State fMRI*, 96 Neuroendoctrinology 188-93 (2012) (in a study of brain activity, finding that a transsexual's brain profile was more closely related to his biological sex than his desired one); Hans Berglund *et al.*, *Male-to-Female Transsexuals Show Sex-Atypical Hypothalamus Activation When Smelling Odorous Steroids*, 18 Cerebral Cortex 1900-08 (2008) (in a study of brain activity, finding no support for the hypothesis that transgenderism is caused by some innate, biological condition of the brain). Some researchers believe that transgenderism can be attributed to other biological causes, such as hormone exposure in utero. *See, e.g.*, Nancy Segal, *Two Monozygotic Twin Pairs Discordant for Female-to-Male Transsexualism*, 35 Archives of Sexual Behav. 347-58 (2006) (examining two sets of twins and hypothesizing, without evidence, that uneven prenatal androgen exposures led one twin in each set to be transsexual). Presently, no scientific evidence supports that belief.

III. There Is No Scientific or Medical Support for Treating Gender Dysphoric Children in Accordance with Their *Gender Identity* Rather than Their *Sex.*

In standard medical and psychological practice, a child who has a persistent, mistaken belief that is inconsistent with reality is not encouraged in his or her belief. *See* Cretella, *supra*, at 51 (listing other similar such conditions); Anne Lawrence, *Clinical and Theoretical Parallels Between Desire for Limb Amputation and Gender Identity Disorder*, 35 Archives of Sexual Behavior 263-78 (2006) (finding similarities between body integrity identity disorder and gender dysphoria). For instance, an anorexic child is not encouraged to lose weight. She is not treated with liposuction; instead, she is encouraged to align her belief with reality – i.e., to see herself as she really is. Affirming the anorexic's "false assumption" risks "alleviat[ing] the patient's emotional distress" at the risk of causing physical harm and fails to "address the underlying psychological problem." Cretella, *supra* at 51.

Until recently, these considerations predominated in how gender dysphoric children were treated. Dr. Kenneth Zucker, long acknowledged as one of the foremost authorities on gender dysphoria in children, spent years helping his patients align their subjective gender identity with their objective biological sex. He used psychosocial treatments (talk therapy, organized play dates, and family counseling) to treat gender dysphoria and had much success.[7]

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[7] In a follow-up study by Dr. Zucker and colleagues of children treated by them over the course of thirty years at the Center for Mental Health and Addiction in Toronto, they found that gender dysphoria persisted in only three of the twenty-five girls they had treated. Kelley D. Drummond *et al.*, *A Follow-up*

See Cretella, *supra*, at 51 (describing his work); Kenneth J. Zucker et al., *A Developmental, Biopsychosocial Model for the Treatment of Children with Gender Identity Disorder*, 59 J. of Homosexuality 369-97 (2012).

Dr. Zucker's eminently sound practice is anchored by recognition of the ineradicable reality that each child is immutably either male or female. It is also influenced by the universally recognized fact that gender dysphoria in children is almost always transient: the vast majority of gender dysphoric children naturally reconcile their gender identity with their biological sex. All competent authorities agree that between 80 and 95 percent of children who say that they are transgender naturally come to accept their sex and to enjoy emotional health by late adolescence. Peggy Cohen-Kettenis et al., *The Treatment of Adolescent Transsexuals: Changing Insights*, 5 J. of Sexual Medicine 1892, 1893 (2008). Indeed, as many as 98 percent of gender dysphoric boys, and 88 percent of gender dysphoric girls, naturally desist. *DSM-5*, *supra*, at 455.

Traditional psychosocial treatments for gender dysphoria, such as those employed by Dr. Zucker, are therefore prudent and natural; they work with and not against the facts of science and the predictable rhythms of children's psycho-sexual development. They give gender dysphoric children the opportunity to reconcile their subjective gender identity with their objective

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Study of Girls with Gender Identity Disorder, 44 Developmental Psychology 34-45 (2008).

biological sex without any irreversible effects or the use of harmful medical treatments.

Although some researchers report that they have identified certain factors which are associated with the persistence of gender dysphoria into adulthood,[8] there is no evidence that any clinician can identify the perhaps one-in-twenty children for whom gender dysphoria will last with any level of certainty. Because such a large majority of these children will surely naturally resolve their confusion, proper medical practice calls for a cautious, wait-and-see approach for all gender dysphoric children. This sensible approach can be and often is rightly supplemented in many cases by family or individual psychotherapy to identify and treat the underlying problems which present as the belief that one belongs to the opposite sex.

Policies and protocols that treat children who experience gender-atypical thoughts or behavior as if they belong to the opposite sex, on the contrary, interfere with the natural progress of psycho-sexual development. Such treatments encourage a gender dysphoric child or adolescent like Maday to adhere to a false belief that he is the opposite sex. These treatments are symptomatic rather than holistic in that they focus on eliminating the child's distress by, among other aspects, requiring others in the child's life to go along with the child's confused thinking—rather than identifying or eliminating the

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[8] *See, e.g.*, Thomas D. Steensma *et al.*, *Factors Associated with Desistence and Persistence of Childhood Gender Dysphoria: A Quantitative Follow-up Study*, 52 J. of the Am. Acad. of Child & Adolescent Psychiatry 582-90 (2013).

underlying cause of the incongruence between the child's perceived gender and actual sex. Importantly, there are no long-term, longitudinal, control studies that support the use of gender-affirming policies and treatments for gender dysphoria. Cretella, *supra*, at 52.[9] Moreover, "children 'encouraged' . . . to live socially in the [child's] desired gender" may "show higher rates of persistence [of gender dysphoria]." *DSM-5*, *supra*, at 455. This is particularly concerning as the treatment course moves from social and verbal affirmation to medical interventions. *See* Paul W. Hruz, Lawrence S. Mayer & Paul R. McHugh, *Growing Pains: Problems with Puberty Suppression in Treating Gender Dysphoria*, The New Atlantis, Spring 2017, at 6 (discussing the plasticity of gender identity in children and postulating that "[i]f the increasing use of gender-affirming care does cause children to persist with their identification as the opposite sex, then many children who would otherwise not need ongoing medical treatment would be exposed to hormonal and surgical interventions.").

The gender-affirming therapy which Maday asserts is legally required is therefore a novel—and dangerous—experiment. In light of all the existing scientific evidence – some more of which we shall explore forthwith – it

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[9] Nonetheless, gender affirmance is on the rise – particularly among children. Chris Smyth, *Better Help Urged for Children With Signs of Gender Dysphoria*, The Times (London), October 25, 2013, http://www.thetimes.co.uk/tto/health/news/article3903783.ece (stating that the United Kingdom saw a fifty percent increase in the number of children referred to gender dysphoria clinics from 2011 to 2012). There are now forty gender clinics across the United States that provide and promote gender-affirming treatments. Cretella, *supra*, at 52.

represents bad medicine based upon ideology rather than sound scientific evidence.

IV. Gender-Affirming Policies Generally Harm, Rather than Help, Gender Dysphoric Children.

Maday asks this Court to require those within reach of its writ and who interact with him to affirm (at least implicitly, by action or inaction) that he is a girl. Maday's false belief would thus be perpetuated through name and pronoun changes, the "successful" impersonation of the opposite sex within and outside of the home, and "acceptance" (forced, from some) by others that he is really a female. This could be viewed by some as a necessary but basically harmless expedient, a bit of playacting to help those like Maday to feel better about themselves during a difficult time in their lives.

There is substantial evidence, however, that this approach is harmful – even when it is viewed on its own terms as a way to help the afflicted child get through a tough time.

> There is an obvious self-fulfilling nature to encouraging young [gender dysphoric] children to impersonate the opposite sex and then institute pubertal suppression. If a boy who questions whether or not he is a boy (who is meant to grow into a man) is treated as a girl, then has his natural pubertal progression to manhood suppressed, have we not set in motion an inevitable outcome? All of his same-sex peers develop into young men, his opposite sex friends develop into young women, but he remains a pre-pubertal boy. He will be left psycho-socially isolated and alone.

American College of Pediatricians, *Gender Ideology Harms Children*, Aug. 17, 2016; c.f. Hruz, *Growing Pains*, *supra*, at 23 (noting that when puberty-suppressing hormones are withdrawn in girls who have been treated for a

condition that causes the early onset of puberty, menstruation began at "essentially the average age as the general population"—age 13—but noting that beginning to suppress puberty at age 12 for gender-dysphoric children may create physical or psychological challenges to "simply resum[ing] normal puberty down the road").

It is well-recognized, too, that repetition has some effect on the structure and function of a person's brain. This phenomenon, known as neuroplasticity, means that a child who is encouraged to impersonate the opposite sex may be less likely to reverse course later in life.[10] For instance, if a boy repeatedly behaves as a girl, his brain is likely to develop in such a way that eventual alignment with his biological sex is less likely to occur. Cretella, *supra*, at 53. Obviously then, some number of gender dysphoric children who would naturally come to peacefully accept their true sex would be prevented from doing so by the gender-affirming policies which this Court is being asked to mandate.

Policies that encourage gender dysphoric children to pursue transgender lifestyles do not exist in an ideological vacuum. Because they are not supported by medical or scientific evidence, one should not be surprised to discover that

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[10] One study showed that the white matter microstructure of specific brain areas in female-to-male transsexuals was more similar to that of heterosexual males than to that of heterosexual females. *See* Giuseppina Rametti *et al.*, *White Matter Microstructure in Female to Male Transsexuals Before Cross-sex Hormonal Treatment. A Diffusion Tensor Imaging Study*, 45 J. of Psychiatric Res. 199-204 (2011). The results of that study may be explained by neuroplasticity.

such policies are nested within a larger ideology about how to "help" children who believe that they are trapped in the wrong bodies. Although these gender-affirming policies do not themselves require pharmaceutical or surgical interventions, corresponding medical treatments – puberty suppression, hormone therapy, and surgical interventions – are a common complement. The more that gender affirmance is promoted to children, the more that children can be expected to accept, and even to pursue, these drastic medical courses.

The gender dysphoric child surrounded by adults and peers who go along with his delusion is likely to perceive his natural biological development as a source of distress. Puberty suppressing hormones are then typically used, beginning at age eleven, to prevent the appearance of natural but (in this case) unwanted characteristics of any maturing member of the child's sex. Henriette A. Delemarre-van de Waal and Peggy T. Cohen-Kettenis, *Clinical Management of Gender Identity Disorder in Adolescents: A Protocol on Psychological and Pediatric Endocrinology Aspects*, 155 Eur. J. of Endocrinology S131, S132 (2006). Then, starting at age sixteen, cross-sex hormones are administered in order to induce something like the process of puberty that would normally occur for the opposite sex. *Id.* at S133.

These medical treatments are "neither fully reversible nor harmless." Cretella, *supra*, at 53; Hruz, *supra*, at 21-26 (analyzing claims of reversibility). Puberty suppression hormones prevent the development of secondary sex characteristics, arrest bone growth, decrease bone accretion, prevent full

organization and maturation of the brain, and inhibit fertility. Cretella, *supra*, at 53. Cross-gender hormones increase a child's risk for coronary disease and sterility. *Id.* at 50, 53. Oral estrogen, which is administered to gender dysphoric boys, may cause thrombosis, cardiovascular disease, weight gain, hypertriglyceridemia, elevated blood pressure, decreased glucose tolerance, gallbladder disease, prolactinoma, and breast cancer. *Id.* at 53 (citing Eva Moore et al., *Endocrine Treatment of Transsexual People: A Review of Treatment Regimens, Outcomes, and Adverse Effects*, 88 J. of Clin. Endocrinology & Metabolism 3467-73 (2003)). Similarly, testosterone administered to gender dysphoric girls may negatively affect their cholesterol; increase their homocysteine levels (a risk factor for heart disease); cause hepatotoxicity and polycythemia (an excess of red blood cells); increase their risk of sleep apnea; cause insulin resistance; and have unknown effects on breast, endometrial and ovarian tissues. *Id.* (citing Moore, *supra*, at 3467-73). Finally, girls may legally obtain a mastectomy at sixteen, which carries with it its own unique set of future problems, especially because it is irreversible. *Id.* (citing Lauren Schmidt, *Psychological Outcomes and Reproductive Issues Among Gender Dysphoric Individuals*, 44 Endocrinology Metabolism Clinics of N. Am. 773-85 (2015). The Hayes Directory reviewed all the relevant literature on these treatments in 2014 and gave them its lowest possible rating: the research findings were "too sparse" and "too limited" to suggest conclusions.

Hayes, Inc., Hormone Therapy for the Treatment of Gender Dysphoria, *Hayes Medical Technology Directory* (2014).

Children are not capable of assessing the severity of these risks or weighing the perceived benefits of gender affirmance (if any) against their many harms. Neurologically, the adolescent brain is immature and lacks an adult capacity for risk assessment prior to the early to mid-20s. Cretella, *supra*, at 53. Yet, gender-affirming policies urge gender dysphoric children to forgo their fertility and jeopardize their physical health in order to avoid the distress of natural physical development.

Parents or guardians would of course have to consent to these interventions on behalf of their minor children. Even assuming that these adults have the true best interests of their children at heart, how many of them are going to be well-informed of the truth about gender dysphoria, especially where their children have already been treated (at school, and anywhere else that this Court's mandate runs) as members of the sex to which these interventions promise greater access?

Finally, gender-affirming policies aggressively promote the false notion that a child or adolescent such as Maday is trapped in the wrong body; indeed, that is precisely these policies' presupposition, even their raison d'etre. Naturally, then, many gender dysphoric children will seek (once they reach the age of maturity) the closest thing to their desired body which modern medicine can offer them. Simply put: policies such as those at issue in this lawsuit will

cause some young adults who would have realigned with their true sex to instead attempt to change it through surgery.

Sadly, there is no good evidence that this dramatic surgery produces lasting benefits.[11] Upon reviewing all the evidence for the beneficial effects of attempted sex reassignment surgery, the Hayes Directory stated that "only weak conclusions" were possible, due to "serious limitations" in the research to date. Hayes, Inc., Sex Reassignment Surgery for the Treatment of Gender Dysphoria, *Hayes Medical Technology Directory* (2014); *see also* Cecilia Dhejne et al., *Long-Term Follow-up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden*, PLoS ONE, Feb. 22, 2011 (suggesting that sex reassignment surgery may not rectify the comparatively poor health outcomes associated with transgender populations); Annette Kuhn et al., *Quality of Life 15 Years After Sex Reassignment Surgery for Transsexualism*, 92 Fertility & Sterility 1685-89 (2009) (finding considerably lower general life satisfaction in post-surgical transsexuals as compared with females who had at least one pelvic surgery in the past); Jon K. Meyer and Donna J. Reter, *Sex Reassignment: Follow-up*, 36 Archives of Gen. Psychiatry 1010-15 (1979) (in an assessment comparing the well-being of post-operative transsexuals to transsexuals who did not have surgery, concluding that "sex

[11] One study (Annelou L.C. de Vries *et al.*, *Young Adult Psychological Outcomes After Puberty Suppression and Gender Reassignment*, 134 Pediatrics 696-704 (2014)) reported some short-term benefits. But the authors made no effort to assess long-term effects, and their study was, in any event, not properly controlled.

reassignment surgery confers no objective advantage in terms of social rehabilitation").

There is considerable evidence, on the other hand, that surgery to conform one's physical appearance to one's subjectively chosen gender poses very serious health risks. *See* David Batty, *Mistaken Identity*, The Guardian, July 30, 2014, http://www.theguardian.com/society/2004/jul/31/health.socialcare (in an assessment of more than 100 follow-up studies on post-operative transsexuals, concluding that none of the studies proved that sex reassignment is beneficial for patients or thoroughly investigated "[t]he potential complications of hormones and genital surgery, which include deep vein thrombosis and incontinence"). One "risk" is for sure: anyone who follows the course of gender-affirming treatment will never be able to engage in a reproductive sexual act. Hruz, *supra* at 25 ("[M]edical technology does not make it possible for a patient to actually grow the sex organs of the opposite sex. . . . Infertility is therefore one of the major side effects of the course of treatment.").

CONCLUSION

Maday would have this Court mandate an experimental "one-size-fits-all" policy of gender affirmance. Underlying that directive is the assumption that treating gender dysphoric children in accordance with their self-proclaimed gender identity rather than their biological sex is beneficial to them. But there is no scientific evidence to support that rosy presupposition; on the contrary, the evidence shows that affirming any child's mistaken belief

that he or she is a prisoner of the wrong body is ultimately harmful to that child. This Court should not require schools to condition children into the harmful belief that they are of the sex opposite to their own.

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Respectfully submitted,

/s/ Sharee S. Langenstein

GERARD V. BRADLEY*
NOTRE DAME LAW SCHOOL
3156 Eck Hall of Law
Notre Dame, IN 46556
(574) 631-8385
Gerard.V.Bradley.16@nd.edu

SHAREE S. LANGENSTEIN
IL ARDC #6256848
THE LANGENSTEIN LAW OFFICE
308 North 9th Street
Murphysboro, IL 62966
(618) 528-0030
ShareeLangenstein@yahoo.com

*_Pro Hac Vice_ application forthcoming

Counsel for Amici Curiae

CERTIFICATE OF COMPLIANCE

I certify that this brief conforms to the requirements of Rules 341(a) and (b). The length of this brief, excluding the pages or words contained in the Rule 341(d) cover, the Rule 341(h)(1) statement of points and authorities, the Rule 341(c) certificate of compliance, the certificate of service, and those matters to be appended to the brief under Rule 342(a), is 21 pages.

/s/ Sharee S. Langenstein
Attorney for Amici Curiae

CERTIFICATE OF SERVICE

I hereby certify that on April 18, 2018, I caused true and correct copies of the foregoing Brief of *Amici Curiae*, and all referenced attachments, to be served via email delivery on April 18, 2018, before the hour of 5 p.m., sent from Murphysboro, upon all counsel of record to their email addresses shown in the attached Service List.

Under penalties as provided by law pursuant to Section 1-109 of the Code of Civil Procedure, the undersigned certifies that the statements set forth in this instrument are true and correct, except as to matters therein stated to be on information and belief and as to such matters the undersigned certifies as aforesaid that he verily believes the same to be true.

/s/ Sharee S. Langenstein
Attorney for Amici Curiae

Service List

John Knight
Ghirlandi Guidetti
Roger Baldwin Foundation of ACLU, Inc.
150 N. Michigan Ave., Ste. 600
Chicago, IL 60601
(312) 201-9740
jknight@aclu-il.org
gguidetti@aclu-il.org

Jeffrey H. Bergman
Mandell Menkes, LLC
1 N. Franklin Street, Ste. 3600
Chicago, IL 60202
(312) 251-1000
jbergman@mandellmenkes.com

Neil Lloyd
Meredith DeCarlo

Carly E. Weiss
Schiff Hardin LLP, Attorney No. 90219
233 S. Wacker Drive, Suite 7100
Chicago, IL 60606
nlloyd@schiffhardin.com
mdecarlo@schiffhardin.com
cweiss@schiffhardin.com

Counsel for Plaintiff-Appellant

Sally J. Scott
Michael A. Warner, Jr.
Jennifer A. Smith
Franczek Radelet, P.C.
300 S. Wacker Dr., Ste. 3400
Chicago, IL 60606
sjs@franczek.com
maw@franczek.com
jas@franczek.com

Counsel for Defendant-Appellee

Thomas Brejcha
Thomas Olp
Thomas More Society
19 S. La Salle Street, Suite 603
Chicago, IL 60603
tbrejcha@thomasmoresociety.org
tolp@thomasmoresociety.org

Gary McCaleb
Jeana Hallock
Alliance Defending Freedom
15100 N 90th Street
Scottsdale, AZ 85260
gmccaleb@ADFlegal.org
jhallock@ADFlegal.org

Doug Wardlow
14033 Commerce Ave. NE #300-310
Prior Lake, MN 55372
dwardlowlaw@gmail.com

Counsel for Intervenor-Appellee