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UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF IDAHO

LINDSAY HECOX, et al.,

Plaintiffs,

v.

BRADLEY LITTLE, et al.,

Defendants.

No. 1:20-cv-184-CWD

EXPERT DECLARATION OF DEANNA ADKINS, MD, IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

I, Deanna Adkins, MD, have been retained by counsel for Plaintiffs Lindsay Hecox and Jane Doe, with her next friends, Jean Doe and John Doe, as an expert in connection with the above-captioned litigation.

1. The purpose of this declaration is to provide my expert opinion on: (1) the nature and impact of treatment protocols for transgender youth; and (2) the different biological characteristics of sex and the ways in which they may not align in the same direction within an individual.

2. I have knowledge of the matters stated in this declaration and have collected and cite to relevant literature concerning the issues that arise in this litigation in the body of this declaration.

3. In preparing this declaration, I reviewed the legislative findings for H.B. 500, as enacted, and the sources cited therein. I also relied on my scientific education and training, my research experience, and my knowledge of the scientific literature in the pertinent fields. The materials I have relied upon in preparing this declaration are the same types of materials that experts in my field of study regularly rely upon when forming opinions on these subjects. I may wish to supplement these opinions or the bases for them as a result of new scientific research or publications or in response to statements and issues that may arise in my area of expertise.

BACKGROUND AND QUALIFICATIONS

4. I received my medical degree from the Medical College of Georgia in 1997. I served as the Fellowship Program Director of Pediatric Endocrinology at Duke University School of Medicine for fourteen years and am currently the Director of the Duke Center for Child and Adolescent Gender Care.

5. I have been licensed to practice medicine in the state of North Carolina since 2001.

6. I have extensive experience working with children with endocrine disorders and I am an expert in the treatment of children with differences or disorders of sex development and in the treatment of children with gender dysphoria.

7. I am a member of the American Academy of Pediatrics, the North Carolina Pediatric Society, the Pediatric Endocrine Society, and The Endocrine Society. I am also a member of the World Professional Association for Transgender Health ("WPATH"), the leading association of medical and mental health professionals in the treatment of transgender individuals.

8. I am the founder of the Duke Center for Child and Adolescent Gender Care ("Gender Care Clinic"), which opened in 2015. I currently serve as the director of the clinic. The Gender Care clinic treats children and adolescents age 7 through 22 with gender dysphoria and/or differences or disorders of sex development. I have been caring for these individuals in my routine practice for many years prior to opening the clinic.

9. I currently treat approximately 400 transgender and intersex young people from North Carolina and across the Southeast at the Gender Care clinic. I have treated approximately 500 transgender and intersex young people in my career.

10. As part of my practice, I stay familiar with the latest medical science and treatment protocols related to differences or disorders of sex development and gender dysphoria.

11. I am regularly called upon by colleagues to assist with the sex assignment of infants who cannot be classified as male or female at birth due to a range of variables in which sex-related characteristics are not completely aligned as male or female.

12. I have testified twice as an expert at trial or deposition in the past four years.

TREATMENT PROTOCOLS FOR TRANSGENDER INDIVIDUALS

13. A transgender individual is an individual who has a gender identity that differs from the person's sex designated at birth.

14. A person's gender identity refers to a person's inner sense of belonging to a particular gender, such as male or female.

15. Everyone has a gender identity.

16. Children usually become aware of their gender identity early in life.

17. Most people have a gender identity that aligns with the sex they are designated at birth. However, for some people, their gender identity does not align

with the sex they are given at birth. This lack of alignment can create significant distress for individuals with this experience and can be felt in children as young as 2 years old.

18. A person's gender identity (regardless of whether that identity matches other sex-related characteristics) is fixed, is not subject to voluntary control, cannot be voluntarily changed, and is not undermined or altered by the existence of other sex-related characteristics that do not align with it.

19. According the American Psychiatric Association's Diagnostic & Statistical Manual of Mental Disorders ("DSM V"), "gender dysphoria" is the diagnostic term for the condition where clinically significant distress results from the lack of congruence between a person's gender identity and the sex they are designated at birth. In order to be diagnosed with gender dysphoria, the incongruence must have persisted for at least six months and be accompanied by clinically significant distress or impairment in social, occupational, or other important areas of functioning.

20. Gender dysphoria is a serious medical condition that, if left untreated, can result in severe anxiety and depression, self-harm, and suicidality. Spack NP, Edwards-Leeper L, Feldmain HA, et al. Children and adolescents with gender identity disorder referred to a pediatric medical center. *Pediatrics*. 2012; 129(3):418-425. Olson KR, Durwood L, DeMeules M, McLaughlin KA. Mental health of transgender children who are supported in their identities. *Pediatrics*. 2016; 137:1-8.

21. Before receiving treatment, many individuals with gender dysphoria have high rates of anxiety, depression and suicidal ideation. I have seen in my patients that without appropriate treatment this distress impacts every aspect of life.

22. Attempted suicide rates in the transgender community are over 40%. The only treatment to avoid this serious harm is to recognize the gender identity of patients with gender dysphoria and follow appropriate treatment protocols to affirm gender identity and alleviate distress.

23. When appropriately treated, gender dysphoria is easily managed. I currently treat hundreds of transgender patients. All of my patients have suffered from persistent gender dysphoria, which has been alleviated through clinically appropriate treatment.

24. The Endocrine Society and the World Professional Association for Transgender Health have published widely accepted standards of care for treating gender dysphoria. Hembree WC, et al. Endocrine treatment of gender-dysphoria/gender incongruent persons: An Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2017; 102: 3869–3903; World Prof'l Ass'n for Transgender Health, Standards of Care for the Health of Transsexual, Transgender, and Gender-Nonconforming People (7th Version, 2011), http://www.wpath.org/site_page.cfm?pk_association_webpage_menu=1351&pk_association_webpage=4655.

25. The medical treatment for gender dysphoria is to eliminate the clinically significant distress by helping a transgender person live in alignment with their gender identity. This treatment is sometimes referred to as "gender transition," "transition related care," or "gender affirming care." The American Academy of Pediatrics agrees that this care is safe, effective, and medically necessary treatment for the health and wellbeing of children and adolescents suffering from gender dysphoria. Rafferty J, Committee on Psychosocial Aspects of Child and Family Health, Committee on Adolescence and Section on Lesbian, Gay, Bisexual, and Transgender Health and Wellness, *Pediatrics* October 2018; 142(4): 2018-2162.

26. The precise treatment for gender dysphoria depends on each person's individualized need, and the medical standards of care differ depending on whether the treatment is for a pre-pubertal child, an adolescent, or an adult.

27. Before puberty, treatment does not include any drug or surgical intervention. For this group of patients, treatment is limited to "social transition," which means allowing a transgender child to live and be socially recognized in accordance with their gender identity. This can include allowing children to wear clothing, to cut or grow their hair, to use names and pronouns, and to access restrooms and other sex-separated facilities and activities in line with their gender identity instead of the sex assigned to them at birth. Social transition is a critical part of treatment of patients with gender dysphoria of all ages and it is the only treatment for pre-pubertal children.

28. It undermines social transition – a critical part of gender dysphoria treatment – to force a person with gender dysphoria to live in a manner that does not align with the person's gender identity. Requiring a girl who is transgender, for example, to use facilities or participate in single-sex activities for boys can be deeply harmful and disruptive to treatment. In the context of activities like athletics, which are typically separated by sex, I know from experience with my patients that it can be extremely harmful for a transgender young person to be excluded from the team consistent with their gender identity.

29. For many transgender adolescents, going through endogenous puberty can cause extreme distress. Puberty blocking treatment allows transgender youth to avoid going through their endogenous puberty thereby avoiding the heightened gender dysphoria and permanent physical changes that puberty would cause.

30. Puberty blocking treatment works by pausing endogenous puberty at whatever stage it is at when the treatment begins. This has the impact of limiting the influence of a person's endogenous hormones on the body. For example, after the initiation of puberty blocking treatment, a girl who is transgender will experience none of the impacts of testosterone that would be typical if she underwent her full endogenous puberty.

31. When treating a transgender young person, when medically indicated, I prescribe puberty blocking treatment at the Tanner 2 stage of puberty. For girls who are transgender, this means that puberty is put on pause usually around the time that the patient has circulating testosterone at a level of 50 ng/dL or 1.735

nMol/L. A patient that undergoes puberty blocking treatment at this stage and then proceeds to gender-affirming hormone therapy will never have circulating testosterone above what is typical of non-transgender girls.

32. Under the Endocrine Society Clinical Guidelines, once a transgender adolescent establishes further maturity and competence to make decisions about additional treatment, it may then be medically necessary and appropriate to provide gender-affirming hormone therapy to initiate puberty consistent with gender identity. For girls who are transgender this means administering both testosterone suppressing treatment as well as estrogen to initiate hormonal puberty consistent with the patient's female gender identity. For boys who are transgender this means administering testosterone.

33. Hormone therapy and social transition significantly change a person's physical appearance. For example, boys who are transgender treated with puberty blockers and gender affirming hormones will receive the same amount of testosterone during puberty that non-transgender boys generate with their testes. They will grow darker and thicker facial and body hair, experience fat distribution away from the hips, have decreased breast growth, and develop lower vocal pitch. Likewise, girls who are transgender and treated with puberty blockers and gender affirming hormones will receive the same amount of estrogen during puberty that non-transgender girls generate endogenously. They will develop breast tissue, fat will be distributed to their hips, their skin will soften and their vocal pitch will not deepen further.

34. Adolescents who undergo hormone treatment before the end of puberty may experience some permanent physical changes that a person who transitions later in life would not.

35. Treatment for transgender youth and adolescents is safe, effective and essential for the well-being of transgender young people. My patients who receive medically appropriate hormone therapy and who are treated consistent with their gender identity in all aspects of life experience significant improvement in their health.

36. For many patients, social transition and hormone therapy are sufficient forms of treatment for gender dysphoria. Others also need one or more forms of surgical treatment to alleviate gender dysphoria. Transgender boys may receive chest reconstruction surgery as young as 16. Genital surgery for transgender women and men is not performed until the person has reached the age of at least 18. Genital surgery for transgender women can result in a vulva and vagina—external genitalia typical of women—as well as removal of the testes, which eliminates the need for medical testosterone suppression. Because surgery does not produce ovaries, transgender women who have had this form of surgery typically continue to need estrogen therapy. I do not perform surgery, but I refer my older patients for surgery when clinically appropriate. In my experience, some young adults who would benefit from one or more forms of surgical treatment for gender dysphoria face financial and insurance barriers that prevent them from accessing this care.

37. My clinical experience with my patients, which has also been documented extensively in research, has been that they suffer and experience worse health outcomes when they are ostracized from their peers through policies that exclude them from spaces and activities that other boys and girls are able to participate in consistent with gender identity.

SEX ASSIGNMENT AND BIOLOGICAL SEX CHARACTERISTICS

38. When a child is born, a sex designation usually occurs at birth based on the infant's genitals. This designation is then recorded and usually becomes the sex designation listed on the infant's birth certificate.

39. Usually, though not always, a person's gender identity aligns with the sex designated based on the person's genitals at birth.

40. For transgender people and people with differences of sex development (DSDs), however, there is not complete alignment among sex-related characteristics.

41. Differences of sex development or DSDs refer to the range of variations in which a person's sex-related characteristics don't all align in one direction. Some describe people with these variations as "intersex."

42. Sex-related characteristics include external genitalia, internal reproductive organs, gender identity, chromosomes, and secondary sex characteristics. These biological sex-related characteristics do not always align as completely male or completely female in a single individual. And none of these characteristics exists in a binary.

43. Although we generally label infants as "male" or "female" based on observing their external genitalia at birth, external genitalia are not always clearly identifiable as typically male or typically female. External genitalia do not account for the full spectrum of sex-related characteristics nor are they alone a proxy for how we understand sex.

44. In one out of every 1,000 live births, the infant's genitals are not typically male or female.

45. For individuals with DSDs, sex assignment at birth can involve the evaluation of the chromosomes, the external genitalia, the internal genitalia, hormonal levels, and sometimes, specific genes. There are also cases in which the appearance of the external genitalia can change at puberty as well as variations in the appearance of secondary sex characteristics that may signal a difference in sex development in a person.

46. When designation of sex of an infant with a DSD is made at birth, that assignment is temporary until the individual can express their gender identity. In cases where the initial designation was incorrect, appropriate medical protocols instruct that the sex should be updated to align with the individual's gender identity. Similarly, if the sex designation of an infant without a DSD turns out to be inconsistent with the individual's gender identity, as for transgender people, the sex should be updated to align with the individual's gender identity.

47. Where surgery has been done on children with DSDs prior the child's understanding and expression of their gender identity, significant distress can

result. Many of these children have had to endure further surgeries to reverse earlier surgical intervention because their gender identity did not match the initial sex designation.

48. Out of every 300 people in the world, at least one has an intersex variation meaning that the person's sex characteristics do not all align as typically male or typically female.

49. Some examples of these variations include:

a. Individuals with Complete Androgen Insensitivity (CAIS) have 46,XY chromosomes and internal testes that produce testosterone, but do not have the tissue receptors that respond to testosterone or other androgens. The body, therefore, does not develop a penis, thicker facial hair and other secondary sex characteristics more commonly associated with men. At birth, based on the appearance of the external genitalia, individuals with CAIS are generally assigned female. If their testes are left in place, the body will convert the hormones into estrogen. Many do not find out they have XY chromosomes or testes until they do not start menstruating at the expected age.

b. Androgen Insensitivity can also be partial (known as PAIS). Individuals with PAIS have XY chromosomes, testes, and some (but still lower than typical) response to testosterone. They may be born with genitals that appear like a typical penis, a typical vulva, or somewhere in between.

c. Individuals with Swyer Syndrome have XY chromosomes and "streak" gonads (gonadal tissue that did not develop into testes or ovaries). Externally, a child with Swyer Syndrome usually develops a vulva. Because their gonads do not produce hormones, they will not develop most secondary sex characteristics without hormone treatment.

d. Individuals with Klinefelter Syndrome have 47,XXY chromosomes and internal and external genitalia typically associated with males, however, their testicles may have reduced testosterone production. This may lead to breast development, low muscle mass and body hair, and infertility.

e. Individuals with Turner Syndrome have 45,XO chromosomes, which means they have one fewer copy of the X chromosome than expected. In utero, these individuals form sex characteristics typically associated with females, including internal structures like a uterus and fallopian tubes, but the ovaries may degenerate before birth (or in some cases, not until young adulthood), leading to an inability to make estrogen. Many individuals with Turner Syndrome will not go through puberty without hormone therapy.

f. Individuals with Mosaicism have different sets of chromosomes in different cells. Mosaic karyotypes happen as a result of atypical cell division early in embryonic development and could involve various combinations among XX, XY, XO, XXY, and other chromosome

patterns. Configuration of gonadal tissue, genitals, and hormone production and response can all vary.

g. Individuals with ovotestes (sometimes known as Ovotesticular DSD) have gonads that contain both ovarian and testicular tissue. Their chromosomes may be XX, XY, or Mosaic. Genital appearance at birth can be male-typical, female-typical, or something else.

h. Congenital Adrenal Hyperplasia (CAH) can occur in individuals with XX or XY chromosomes. Individuals with CAH and 46,XX chromosomes have ovaries, a uterus, and a higher-than-typical production of androgens in utero that can lead to the development of genital differences at birth – such as an enlarged clitoris that may look like a penis, or the lack of a vaginal opening. CAH can also cause the development of typically masculine features like increased muscle mass and body hair. Most individuals with CAH and XX chromosomes are assigned female at birth, but many eventually have a male or non-binary gender identity.

i. Individuals with 5-alpha reductase deficiency (5-ARD) have XY chromosomes, but they have an enzyme deficiency that inhibits conversion of testosterone to dihydrotestosterone (the active form of testosterone) to varying degrees. This can impact genital development, and at birth, individuals with 5-ARD may have genitals that appear female-typical, neither male-typical nor female-typical, or mostly male-

typical with differences like hypospadias (where the urethra is located somewhere other than the tip of the penis). During puberty, hormonal changes allow them to make more dihydrotestosterone, causing the development of some secondary sex characteristics typically associated with males, as well as genital masculinization. Many of those who were assigned female based on the appearance of their genitals at birth have a male gender identity and live as males beginning in adolescence or early adulthood.

50. As the examples above underscore, from a medical perspective, chromosomes, reproductive anatomy and endogenous testosterone alone do not determine a person's sex, nor does a single sex-related characteristic.

51. Idaho's new law instructs physicians to "verify" an individual's sex based on chromosomes, reproductive anatomy or endogenous testosterone but none of these characteristics alone or in any combination can "verify" sex.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on April 27, 2020

Deanna Adkins, MD

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on the 30th day of April, 2020, I filed the foregoing electronically through the CM/ECF system, which caused the following parties or counsel to be served by electronic means, as more fully reflected on the Notice of Electronic Filing:

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DATED this 30th day of April, 2020.

/s/ Richard Eppink

EXHIBIT A

DUKE UNIVERSITY MEDICAL CENTER

CURRICULUM VITAE

for
Permanent Record
and the
Appointments and Promotions Committee

Date Prepared: April 27, 2020

Name:	Deanna W. Adkins, MD
Primary Academic Appointment:	Assistant Professor Track IV
Primary Academic Department :	Pediatrics
Secondary Appointment	None
Present Academic Rank and Title	Associate Professor of Pediatrics
Date and Rank of First Duke Faculty Appointment:	July 1, 2004 Clinical Associate
Medical Licensure:	North Carolina
License #:	200100207
Date :	March 15, 2001
Specialty Certification(s) and Dates:	10/16/2001-2018 General Pediatrics 8/18/2003 and current-Pediatric Endocrinology
Date of Birth:	[redacted] 1970
Place :	Albany, GA USA
Citizen of:	USA
Visa Status :	N/A

Education	Institution	Date (Year)	Degree
High School	Tift County High School	1988	Graduated with High Honors
College	Georgia Institute of Technology	1993	BS Applied Biology/Genetics High Honors
Graduate or Professional School	Medical College of Georgia	1997	MD

Professional Training and Academic Career

Institution	Position/Title	Dates
University of North Carolina Hospitals, Chapel Hill, North Carolina	Pediatrics Resident	1997-2000
University of North Carolina Hospitals, Chapel Hill, North Carolina	Pediatric Endocrine Fellow	2000-2004
Duke University Medical Center, Durham, North Carolina	Clinical Associate/Medical Instructor	2004-2008
Duke University Medical Center, Durham, North Carolina	Assistant Professor	2008-2020
Duke University Medical Center, Durham, North Carolina	Fellowship Program Director Pediatric Endocrinology	2008-2010
Duke University Medical Center, Durham, North Carolina	Associate Fellowship Program Director Pediatric Endocrinology	2010-2014
Duke University Medical Center, Durham, North Carolina	Fellowship Program Director Pediatric Endocrinology	2014-12/2019
Duke University Medical Center, Durham, North Carolina	Director Duke Child and Adolescent Gender Care	3/2015-present
Duke University Medical Center, Durham, North Carolina	Medical Director-Duke Children's Specialty of Raleigh	3/2017-present
Duke University Medical Center, Durham, North Carolina	Associate Professor Pediatric	1/2020-present

Publications

Refereed Journals

1. Zeger M, **Adkins D**, Fordham LA, White KE, Schoenau E, Rauch F, Loechner KJ. " Hypophosphatemic rickets in opsismodysplasia," J Pediatr Endocrinol Metab. 2007 Jan;20(1):79-86. PMID: 17315533

2. Worley G, Crissman BG, Cadogan E, Milleson C, **Adkins DW**, Kishnani PS "Down Syndrome Disintegrative Disorder: New-Onset Autistic Regression, Dementia, and Insomnia in Older Children and Adolescents With Down Syndrome".. J Child Neurol. 2015 Aug;30(9):1147-52. doi: 10.1177/0883073814554654. Epub 2014 Nov 3.PMID:25367918

3. Tejwani R, Jiang R, Wolf S, **Adkins DW**, Young BJ, Alkazemi M, Wiener JS, Pomann GM, Purves JT, Routh JC**,"** Contemporary Demographic, Treatment, and Geographic Distribution Patterns for Disorders of Sex Development".Clin Pediatr (Phila). 2017 Jul 1:9922817722013. doi: 10.1177/0009922817722013. PMID:28758411

4. Lapinski J1, Covas T2, Perkins JM3, Russell K4, **Adkins D** 5, Coffigny MC6, Hull S7. "Best Practices in Transgender Health: A Clinician's GuidePrim Care". 2018 Dec;45(4):687-703. doi: 10.1016/j.pop.2018.07.007. Epub 2018 Oct 5. PMID: 30401350 DOI: 10.1016/j.pop.2018.07.007

5. Paula Trief, Nicole Foster, Naomi Chaytor, Marisa Hilliard, Julie Kittelsrud, Sarah Jaser, Shideh Majidi, Sarah Corathers, Suzan Bzdick, **Adkins DW**, Ruth Weinstock; "Longitudinal Changes in Depression Symptoms and Glycemia in Adults with Type 1 Diabetes", Diabetes Care; 2019 Jul;42(7):1194-1201. doi: 10.2337/dc18-2441. Epub 2019 May; PMID: 31221694

6. M. Hassan Alkazemi, MD, MS, Leigh Nicholl, MS, Ashley W. Johnston, MD, Steven Wolf, MS, Gina-Maria Pomann, PhD, Diane Meglin, MSW**, Deanna Adkins, MD**, Jonathan C. Routh, MD, MPH; "Community Perspectives on Difference of Sex Development (DSD) Diagnoses: a Crowdsourced Survey", Journal of Pediatric Urology accepted April 2, 2020

Study Group publications

1. Turner DA, Curran ML, Myers A, Hsu DC, Kesselheim JC, Carraccio CL and the Steering Committee of the Subspecialty Pediatrics Investigator Network (SPIN). Validity of Level of Supervision Scales for Assessing Pediatric Fellows on the Common Pediatric Subspecialty Entrustable Professional Activities. *Acad Med*. 2017 Jul 11. doi: 10.1097/ACM.0000000000001820. PMID:28700462
2. Mink R, Carraccio C, High P, Dammann C, McGann K, Kesselheim J, Herman B. Creating the Subspecialty Pediatrics Investigator Network (SPIN). Creating the Subspecialty Pediatrics Investigator Network Richard Mink, MD, MACM1, Alan Schwartz, PhD2, Carol Carraccio, MD, MA3, Pamela High, MD4, Christiane Dammann, MD5, Kathleen A. McGann, MD6, Jennifer Kesselheim, MD, EdM7, J Peds 2018 Jan;192:3-4.e2. PMID: 29246355 DOI: 10.1016/j.jpeds.2017.09.079
3. Erratum 2018. PMID: 29246355 DOI: 10.1016/j.jpeds.2017.09.079
4. Mink RB[1], Myers AL, Turner DA, Carraccio CL. Competencies, Milestones, and a Level of Supervision Scale for Entrustable Professional Activities for Scholarship. Acad Med. 2018 Jul 10. doi: 10.1097/ACM.0000000000002353. [Epub ahead of print] PMID: 29995669 DOI:10.1097/ACM.0000000000002353 Mink RB, Schwartz A, Herman BE,

Editorials

a. Editorial Charlotte News and Observer-"**NC pediatric specialists say HB2 'flawed' and 'harmful,' call for repeal**"; April 18, 2016; authors: Deanna Adkins, Ali Calikoglu, Nina Jain, Michael Freemark, Nancie MacIver, Robert Benjamin, Beth Sandberg, etc.
b. Editorial Raleigh News and Observer-"**Beverly Gray: Repeal HB2"** May 2016: authors Beverly Gray, Deanna Adkins, Judy Sidenstein, Jonathan Routh, Haywood Brown, Clayton Afonso, William Meyer, Kristen Russell, Caroline Duke, Nancy Zucker, Kevin Weinfurt, Jennifer St. Claire, Angela Annas, Katherine Keitcher

Chapters in Books

1. Endocrinology Chapter writer and editor in **Fetal and Neonatal Physiology for the Advanced Practice Nurse**; Editors: Amy Jnah DNP, NNP-BC, Andrea Nicole Trembath MD, MPH, FAAP. December 21, 2018 ISBN-10 0826157319

Selected Abstracts:

1. Redding-Lallinger RC, **Adkins DW,** Gray N: The use of diaries in the study of priapism in sickle cell disease. Poster Abstract in Blood November 2003
2. **Adkins, D.W.** and Calikoglu, A.S.: Delayed puberty due to isolated FSH deficiency in a male. Pediatric Research Suppl. 51: Abstract #690. page 118A, 2004
3. Zeger, M.P.D**., Adkins, D.W.,** White, K., Loechner, K.L.: Opsismodysplasia and Hypophosphatemic Rickets. Pediatric Research Suppl.-from PAS 2005
4. Kellee M. Miller[1], David M. Maahs[2]**, Deanna W. Adkins[3]**, Sureka Bollepalli[4], Larry A. Fox[5], Joanne M. Hathway[6], Andrea K. Steck[2], Roy W. Beck[1] and Maria J. Redondo[7] for the T1D Exchange Clinic Network; Twins Concordant for Type 1 Diabetes in the T1D Exchange -poster at ADA scientific sessions 6/2014
5. Laura Page, MD; Benjamin Mouser, MD; Kelly Mason, MD; Richard L. Auten, MD; **Deanna Adkins, MD** CHOLESTEROL SUPPLEMENTATION IN SMITH-LEMLI-OPITZ: A Case of Treatment During Neonatal Critical Illness; - poster 06/2014
6. Lydia Snyder**, MD, Deanna Adkins, MD,** Ali Calikoglu, MD; Celiac Disease and Type 1 Diabetes: Evening of Scholarship UNC Chapel Hill 3/2015 poster
7. **Deanna W. Adkins, MD,** Kristen Russell, LCSW, Dane Whicker, PhD, Nancy Zucker, Ph. D**:** Departments of Pediatrics and Psychiatry, Duke University Medical Center*;* Evaluation of Eating Disturbance and Body Image Disturbance in the Trans Youth Population; WPATH International Scientific Meeting June 2016; Amsterdam, The Netherlands
8. Rohit Tejwani**, Deanna Adkins,** Brian J. Young, Muhammad H. Alkazemi,Steven Wolf[3], John S. Wiener, J. Todd Purves, and Jonathan C. Routh; Contemporary Demographic and Treatment Patterns for Newborns Diagnosed with Disorders of Sex Development; Poster presentation at AUA meeting 2016
9. S.A. Johnson, **D.W. Adkins,** Case Report: The Co-diagnosis of Hypopituitarism with Klinefelter in a patient with short stature; Pediatric Academic Society Meeting 2018
10. Lapinski J, Dooley R, Russell K, Whicker D, Gray, B**, Adkins DW; Title:** Developing a Pediatric Gender Care Clinic at a Major Medical Setting in the South; Workshop Philadelphia Trans Wellness Conference 2018
11. Jessica Lapinski, DO, Deanna Adkins, MD, Tiffany Covas, MD, MPH, Kristen Russell, MSW, LCSW; An Interdisciplinary Approach to Full Spectrum Transgender Care; WPATH Conference Buenos Aires, Argentina, November 3, 2018
12. Leigh Spivey, MS, Nancy Zucker, PhD, Erik Severiede, B.S., Kristen Russell, LCSW, Deanna Adkins, MD; USPATH Washington, DC Sept. 2019. Platform presentation;

"Psychological Distress Among Clinically Referred Transgender Adolescents: A latent Profile Analysis"

Non-Refereed Publications

i. Print
   i. Editorial Charlotte News and Observer-"**NC pediatric specialists say HB2 'flawed' and 'harmful,' call for repeal**"; April 18, 2016
   ii. Editorial News and Observer-HB2 May 2016 -"**Beverly Gray: Repeal HB2"** May 2016

ii. Digital
   i. Supporting and Caring for Transgender Children-HRC guide 2017
   ii. Initial endocrine workup and referral guidelines for primary care Providers-Pediatric Endocrine Society Education Committee Website Publication
   iii. Only Human Podcast August 2, 2016; https://www.wnycstudios.org/podcasts/onlyhuman/episodes/id-rather-have-living-son-dead-daughter

iii. Media and Community Interviews
   i. Greensboro News and Record Community Forum October 2017-*Transgender Panel Moderator*
   ii. Playmakers Repertory Company-Chapel Hill: *Draw the Circle* Transgender Community Panel 2017
   iii. Duke Alumni Magazine
   iv. Duke Stories
   v. DukeMed Alumni Magazine
   vi. NPR Podcast Only Human piece on caring for transgender youth and follow up piece 1 year later
   vii. ABC11, WRAL, WNCN News Coverage
   viii. News and Observer: Charlotte and Raleigh
   ix. Duke Chronicle and Daily Tarheel Article
   x. Huffington Post Article

Published Scientific Reviews for Mass Distribution

c. Lapinski J1, Covas T2, Perkins JM3, Russell K4, **Adkins D** 5, Coffigny MC6, Hull S7. Best Practices in Transgender Health: A Clinician's GuidePrim Care. 2018 Dec;45(4):687-703. doi: 10.1016/j.pop.2018.07.007. Epub 2018 Oct 5. PMID: 30401350 DOI: 10.1016/j.pop.2018.07.007

Position and Background Papers

Non-authored Publications

Other

Consultant Appointments:
North Carolina Newborn Screening Committee,
Human Rights Campaign Transgender Youth Advisory Board

Scholarly Societies: None

Professional Awards and Special Recognitions

ESPE Fellows Summer School, 2001
NIH Loan Repayment Program Recipient
Lawson Wilkins AstraZeneca Research Fellow,
2003-2004
HEI 2017 Leaders in LGBTQ Healthcare
Equality
Inside Out Durham Appreciation Award
Duke Health System Diversity and Inclusion
Award January 2018

Editorial Experience
Editorial Boards
Ad Hoc scientific review journals:
Hormone Research, Lancet, NC Medical journal, Journal of Pediatrics, Pediatrics, Transgender Health, International Journal of Pediatric Endocrinology

Organizations and Participation

American Academy of Pediatrics
Council on Information Technology
Member
Reviewer COCIT AAP Annual Meeting
presentations
Member Section on Endocrinology

NC Pediatric Society
The Endocrine Society
Member Education Committee
Writer Web Publication for Pediatrician
WPATH-International Transgender Society

External Support

Approximate Duration	PI	% Effort	Purpose	Amount Duration
Past	JAEB Center-Deanna Adkins	0.5%	Type 1 diabetes research	$ 5yr

Approximate Duration	PI	% Effort	Purpose	Amount Duration
Past	Josiah Trent Foundation Grant-Deanna Adkins	0.5%	Transgender and eating disorder research	$5000 3 yr
Pending: Submitted	NIH-Kate Whetten	0.1%	Analysis of TransgenderHealth in Adolescents in Rural Africa, India, and Thailand	Consultant
submitted	NIH Deanna Adkins	2%	Development of New Gender Dysphoria Measures in Youth	Co PI

Mentoring Activities

Faculty	
Fellows, Doctoral, Post docs	**Nancie MacIver-fellow**
	Dorothee Newbern-fellow
	Krystal Irizarry-fellow
	Kelly Mason-fellow
	Laura Page-fellow
	Elizabeth Sandberg fellow UNC
	Dane Whicker-psychology post doc
Residents	**Yung-Ping Chin-mentor**
	Kristen Moryan-mentor
	Jessica Lapinski-mentor
	Kathryn Blew-research mentor
	Matthew Pizzuto, Breana Scott-Coach
Medical students	
Undergraduates	**Erik Severeide-Duke University** **Lindsay Carey-Dickinson College** **Jeremy Gottleib-Duke University** **Jay Zussman-Duke University**

High School Students	**Aeryn Colton-Intern Apex High School**
Graduate Student MBS program	**Nicholas Hastings**

Educational Activities:

Didactic classes

Undergraduate

1. Duke School of Nursing Course on Sexual and Gender Health guest lecturer: fall 2017, spring 2018, fall 2018, spring 2019, fall 2019, spring 2020
2. Duke School of Nursing Lecture on Transgender Care-recorded for reuse
3. Duke Physician Assistant Program guest lecturer; fall 2017, spring 2018
4. Duke Global Health Course guest lecturer fall 2016
5. Duke Neuroscience course on Gender and Sex guest lecturer fall 2016
6. Duke Ethics Interest group guest lecturer fall 2018
7. Duke Med Pediatrics Interest Group lecture fall 2018
8. Duke EMS group lecture fall 2018

UME:

1. Cultural Determinants of Health and Health Disparities Course: Facilitator and developed one class; 2017-18 and 2018-19 and 2019-2020; Steering Committee member for course development
2. UNC School of Medicine Lecturer for LGBTQ Health series 2016-recorded for reuse

Graduate School Courses:

1. Master of Biomedical Science Program-guest lecturer on Transgender Medicine fall 2016
2. School of Nursing Graduate Intensive Course Lecturer on Sexual and Gender Health; fall 2017, spring 2018, fall 2018, spring 2019
3. Fuqua School of Business Med Pride Panel and presentation fall 2017
4. Master of Biomedical Science Program Mentor 2019-2020

DUHS Employee Education

1. Annual Duke Human Resources Lunch and Learn on Gender Diversity 2016, 2017, 2018
2. Over 40 lectures across the institution on gender including CHC front desk/nursing staff, hospital wide social work/case management, radiology, PDC clinic front desk/nursing staff
3. Steering Committee for Sexual and Gender Identity Epic Module development and Educational module development
4. DCRI Pride invited speaker

GME:

1. Adult Endocrinology Fellows every year on growth and/or gender
2. Pediatric Residency Noon conferences on Growth and Gender-yearly
3. Reproductive Endocrinology Noon Conferences every 2 to 3 years
4. Psychiatry Noon Conferences periodically
5. Family Practice Noon Conference periodically
6. Pediatric Endocrine Fellow lectures twice a year or more
7. Pediatrics grand rounds: Vitamin D, Type 2 diabetes, Pubertal Development, Gender Diverse Youth

Development of Courses Educational programs

1. Pituitary Day October 2019-full day multispecialty seminar for caregivers of patients with hypopituitarism-Organized and developed the curriculum
2. Development of Gender Diversity Education for Health System education
3. Steering Committee for Cultural Determinants and Health Disparities Course
4. Helping to Adapt Resident Coaching Program to Pediatric Fellowships
5. Developed half day course for Duke Student Health on Care of the Gender Diverse Student with multiple disciplines included
6. Course Director: American Diabetes Association Camp Carolina Trails rotation for fellows and residents: 2009, 2011 – 2019
7. Medical Education for Camp Morris 2019

Development of Assessment Tools and Methods

1. Currently under development with Population Health Sciences-method to assess gender dysphoria; received Brief High Intensity Production (BHIP) grant for this collaboration; NIH grant Submitted March 2020; I am writing the portion of grant giving background on the population and the need for better measures.
2. Collaborating with the Duke Chaplain group to develop a spiritual assessment tool for gender diverse children and their families. completed

Educational leadership roles

1. Fellowship Program Director Pediatric Endocrinology 2008-2019
2. Course Director: American Diabetes Association Camp Carolina Trails rotation for fellows and residents: 2009, 2011 to present

Educational Research

1. -Working with national group on SPIN to analyze new EPA's and Milestones Efficacy in Fellow Education
2. -Working with Boston Children's on a Journal Club Curriculum for Pediatric Endocrinology fellows with pre and post assessments
3. -Working with coaching program for residents modified and applied in pediatric fellows

Invited Lectures and Presentations

1. Trent Center for Ethics Lecture May 2017: Transgender Medicine: a Wealth of Ethical Issues
2. Visiting Professorship: ECU Brody School of Medicine Invited Professor October 2017
3. College of Diplomates-pediatric dentistry society-Webinar on transgender care 4/1/2020

International Meetings

1. WPATH Amsterdam 2016
2. WPATH Buenos Aires 2018

National Scientific Meetings (invited)

1. Transgender SIG Developing a Patient Registry
2. Patient Advocacy for Transgender Youth Philadelphia 2018

Instructional Courses, Workshops, Symposiums (National)

1. Time to Thrive Arkansas Children's Hospital April 2018
2. National Transgender Health Summit UCSF Jan 2018: Providers as Advocates Workshop
3. Magic Foundation-Chicago, IL Annual Speaker on Precocious Puberty at National Conference 2016, 2017, 2019
4. The Seminar-Fort Lauderdale, FL Invited Speaker on Care of Transgender Youth 2017

Posters (National and International meetings)

1. WPATH 2018 Meeting Buenos Aires: Building a Multidisciplinary Gender Care Team at an Academic Center; Lapinski, J, Adkins DW
2. Lapinski J, Dooley R, Russell K, Whicker D, Gray, B, Adkins DW; Title: Developing a Pediatric Gender Care Clinic at a Major Medical Setting in the South; Workshop Philadelphia Trans Wellness Conference 2018
3. S.A. Johnson, D.W. Adkins, Case Report: The Co-diagnosis of Hypopituitarism with Klinefelter in a patient with short stature; Pediatric Academic Society Meeting 2018
4. Rohit Tejwani, Deanna Adkins, Brian J. Young, Muhammad H. Alkazemi,Steven Wolf3, John S. Wiener, J. Todd Purves, and Jonathan C. Routh; Contemporary Demographic and Treatment Patterns for Newborns Diagnosed with Disorders of Sex Development; Poster presentation at AUA meeting 2016
5. Deanna W. Adkins, MD, Kristen Russell, LCSW, Dane Whicker, PhD, Nancy Zucker, Ph. D: Departments of Pediatrics and Psychiatry, Duke University Medical Center; Evaluation of Eating Disturbance and Body Image Disturbance in the Trans Youth Population; WPATH International Scientific Meeting June 2016; Amsterdam, The Netherlands

Regional Presentations and Posters

a. North Carolina Pediatric Society: Pubertal Development Presentation– Pinehurst, NC 2017

b. North Carolina Psychiatric Association: Caring for Transgender Children Presentation and Workshop on key concepts in care of transgender child-Asheville, NC 2017
c. ECU Campus Health Presentation Caring for Transgender Patients 2018
d. Radiology Technology Symposium Presentation on Caring for Transgender Patients 2018
e. Duke CME in Wake County-Update on Type 2 Diabetes Treatments Feb 2019
f. Hilton Head Pediatric CME Course-Update on Type 2 Diabetes, Short Stature, and Caring for Transgender Patients June 2019 as well at 2020 discussion lipid disorders and type 2 diabetes

Local Presentations

1. Grand Rounds: 2016 to present-Duke Pediatrics twice, Moses Cones Pediatrics, ECU Ob/Gyn, Duke Ob/Gyn, Duke Psychiatry, Duke Urology, Duke Adult Endocrinology
2. Prior to 2016-Rex Grand rounds: Salt and Water balance, New treatments in Pediatric Diabetes, Adrenal Insufficiency, Duke peds grand rounds Bone Health, Type 2 Diabetes Mellitus
3. Duke Women's Weekend 2018 hosted by Duke Alumni Association
4. NCCAN Social Work Training 2016
5. NAPNAP lecture 2016
6. Profiles in Sexuality Research Presentation at Duke Center for Sexual and Gender Diversity 2017
7. Duke LGBTQ Alumni Weekend Presentation 2017
8. UNC Chapel Hill Campus Health Presentation 2018
9. Duke Student Health Presentation 2017 and 2018

Clinical Activity

1. Duke Consultative Services of Raleigh-2.5 days per week in endocrinology and diabetes
2. Duke Child and Adolescent Gender Care Clinic 1 day per week at the CHC
3. Inpatient Consult Service Pediatric Endocrinology 1 week per month

Clinical Projects:

1. Epic module key stakeholder and steering committee on Sexual Orientation and Gender Identity Module 2018
2. Incorporation of Glooko system to Duke adult and pediatric diabetes clinics to download diabetes data from insulin pumps and continuous glucose sensors for analysis
3. Helped develop the pediatric endocrinology dashboard for Epic/Maestro
4. Helped develop a community advisory board for LGBTQ care at Duke and continue to help run this group which meets quarterly
5. Collaborating with the Duke Chaplain group to develop a spiritual assessment tool for gender diverse children and their families.

Participation in academic and administrative activities of the University and Medical Center

Administrative and Leadership Positions

1. Medical Director Duke Children's and WakeMed Consultative Services of Raleigh
2. Director Duke Child and Adolescent Gender Care Clinic
3. Pediatric Endocrinology Fellowship Program Director 2008-2019

Committees

1. Graduate Medical Education Committee-2008-2019
2. School of Medicine Sexual and Gender Diversity Council
3. Pediatrics Clinical Practice Committee
4. Pediatric Diversity and Inclusion Committee
5. Pediatrics Advocacy Committee

Community

1. Test proctor local schools
2. Guest lecture GSA multiple years
3. Diabetes Camp
4. 100 Women who give a hoot
5. Collaborated to bring "Becoming Johanna" to Duke along with multiple screenings with the director and the lead actor
6. Teddy Bear Hospital volunteer

Signature of Chair Date

Personal Information

Faculty Member's Preferred Familiar Name:	Deanna
Home Address	[redacted]
	Apex, NC [redacted]
Telephone Number:	919-363-5706
Email Address:	Deanna.adkins@duke.edu