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**BACK TO THE BINARY:
HOW THE OLYMPICS STRUGGLE WITH SEPARATION OF
MALE AND FEMALE**

*Anna Boyd**

“[I]t is problematic to impose a binary division on human beings who are far more diverse than the assumptions behind the labels ‘male’ and ‘female.’”¹

I. INTRODUCTION

When a woman gets pregnant, the most prevalent question she gets asked is, “[b]oy or girl?”² Family and friends celebrate the new arrival of the child with baby showers and, more recently, gender reveal parties.³ If gender is a black and white concept (or, rather, blue and pink), then one would expect the separation of male and female athletes to be a breeze.⁴ This is simply not the case.⁵ This comment will examine the legal rights individuals have when changing, altering, or amending their legal classification for sex/gender in the context of the Olympics.⁶

Part II will examine the Olympics’ historical struggle to determine how gender and sex are verified and classified as well as constitutional issues regarding discrimination and invasion of privacy.⁷ Parts III and IV will describe the most recent athlete, Dutee Chand, who challenged the Olympics’ hyperandrogenism regulations and her partial success.⁸ Part V will briefly examine the commonly proposed options for how the Olympics could split athletes for competition and the legal issues

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¹ Erin Buzuvis, *Hormone Check: Critique of Olympic Rules on Sex and Gender*, 31 WIS. J. L. GENDER & SOC’Y 29, 29 (pontificating complexities of humans in regards to gender, gender identity, and sex categories in relation to generally-accepted notions of sport categorization).

² See Jen Willsea, *Please Stop Asking If My Baby Is a Boy or a Girl*, HUFFPOST (Jun. 5, 2017, 2:56 PM, updated Jun. 6, 2017), http://www.huffingtonpost.com/entry/please-stop-asking-if-my-baby-is-a-boy-or-a-girl_us_5935a65de4b0cfcda9169b3f (critiquing important of sex before baby is even born).

³ See Martie Sirois, *A Word of Caution on Gender Reveal Parties*, HUFFPOST (Aug. 8, 2016, 8:38 PM, updated Aug. 9, 2016) http://www.huffingtonpost.com/entry/a-word-of-caution-on-gender-reveal-parties_us_57a8f834e4b08f5371f1d001 (“Gender reveal parties are one of the hottest trends among today’s expectant parents. They’ve been going on for at least eight years, but in case you aren’t familiar, gender reveal parties are meant to be exactly what they imply: getting a group of friends and/or family together with the expectant parents for a party, and “revealing” the baby’s gender at one time so that everyone present can celebrate the biological sex of the upcoming birth.”).

⁴ See INT’L OLYMPIC COMM., *Olympic Charter* (Aug. 2, 2016) (neglecting to define gender or sex within the International Olympic Committee charter).

⁵ See Russel Goldman, *Here’s a List of 58 Gender Options for Facebook Users*, ABC NEWS (Feb. 13, 2014), <http://abcnews.go.com/blogs/headlines/2014/02/heres-a-list-of-58-gender-options-for-facebook-users/> (listing fifty-eight different gender options that Facebook users can select when creating a profile).

⁶ For a full discussion of legal rights both internationally and in the U.S., see *infra* notes 53–72 and accompanying text.

⁷ For a historical analysis of sex and gender verification in the Olympic Games, see *infra* notes 73–109 and accompanying text.

⁸ For a discussion of Dutee Chand’s appeal to the Court of Arbitration for Sport see *infra* notes 103–174.

stemming therefrom.⁹ The last section of Part V will propose a new approach to athletic classification in the Olympic arena, consider constitutional issues this proposal faces, and explain why hormone ranges remain the best option the Olympics Committee has.¹⁰ This last proposal encompasses a dramatic shift toward the hormone testing of all athletes regardless of sex and rids the Olympics of sex/gender classification, which best combats the constitutional and legal issues surrounding all other options available to the Olympic Games.¹¹

II. BACKGROUND

The Olympics are a time-honored tradition.¹² Families from all over the globe crowd around their televisions every other year to watch as world-renowned athletes compete for medals in their country's honor.¹³ Athletes, however, are funneled into one of two sex categories when attempting to achieve their goals as a competitor.¹⁴ With the rise in acceptance of genders other than the "traditional" male and female labels, the Olympics have been challenged with competition categories.¹⁵

A. Definitions

In order to have a conversation about gender, sex, and transgender athletes, it is important to establish the meaning of these words.¹⁶ Sex is defined by Black's Law Dictionary as "[t]he sum of the peculiarities of structure and function that distinguish a male from a female organism; gender."¹⁷ This raises the first point of contention, because sex and gender are *not* the same; however, it is clear that under the guise of the law, they are treated equally.¹⁸ Black's Law Dictionary defines gender as the "difference between men and women based on culturally and socially constructed mores, politics, and affairs" while many other legal sources use sex and gender interchangeably.¹⁹ Pending lawsuits struggle to find a difference between gender and

⁹ For common proposals on how to remedy the sex/gender classification/verification issue, see *infra* notes 202–280 and accompanying text.

¹⁰ For a new approach regarding athletic categories, see *infra* notes 256–280 and accompanying text.

¹¹ See *infra* notes 256–280 and accompanying text.

¹² See John J. MacAloon, *Double Visions: Olympic Games and American Culture*, THE KENYON REVIEW Vol. 4 No. 1, 98–112 (1982) (describing the prevalence of the Olympics in American culture and stating all Americans have seen the Olympics at least once).

¹³ See *id.* (stating approximately one third of humans alive in 1976 watched the Olympics).

¹⁴ See Linda Sheryl Greene, *Mirror, Mirror on the Wall – Gender, Olympic Competition and Persistence of the Feminine Ideal*, 31 WIS. J. L. GENDER & SOC'Y 57, 60 ("The [IOC's] conference produced a document entitled 'Women's Participation in Athletics' which imposed substantial limitations and noted distinctions between male and female Olympic competition and provided a basis for the imposition of limits on those who qualify as female for purposes of Olympic competition.").

¹⁵ See Goldman, *supra* note 5 (listing fifty-eight different gender options that Facebook users can select when creating a profile).

¹⁶ For the definitions that will control this article see *infra* notes 17–37 and accompanying text.

¹⁷ *Sex*, BLACK'S LAW DICTIONARY (10th ed. 2014) (including as a definition of 'sex,' 'gender').

¹⁸ See *Sex*, THE MERRIAM-WEBSTER DICTIONARY (11th ed. 2003) ("Either of the two main form of individuals that occur in many species and that are distinguished respectively as female or male especially on the basis of their reproductive organs and structures.")

¹⁹ *Gender*, BLACK'S *supra* note 17.

sex.²⁰ Gender, as this article will treat it, is “[t]he behavioral, cultural, or psychological traits typically associated with one sex.”²¹ Gender, unlike sex, cannot be determined based on biological criteria, but is rather defined by a person’s gender identity.²²

Gender and sex have been long misunderstood concepts in courts in the U.S.²³ Courts have consistently misused terminology and conflated sex and gender into one concept.²⁴ It is not uncommon for courts to interchangeably use the terms “sex” and “gender” as well as “transsexual” and “transgender.”²⁵ In addition to conflating the two terms, courts have referred to individuals as both transsexual and transgender regardless of whether they have undergone sex reassignment surgery.²⁶ Lastly, courts have created terms such as “gender non-conformity” instead of referring to individuals as breaking gender norms and “gender transition” instead of sex reassignment surgery or simply transition.²⁷ The former is problematic because gender is a chosen characteristic of an individual, a person cannot be “gender non-conforming.”²⁸ The latter is problematic because a person can only receive surgery to reassign his or her sex organs, not his or her gender identity.²⁹

If a person’s biological or assigned sex conflicts with his or her gender identity, then that person *may* pursue sex reassignment surgery.³⁰ Even without the sex reassignment surgery, a person whose gender identity conflicts with his or her assigned

²⁰ See, e.g., Elise Bloom & Andrew Smith, *Does ‘Sex’ in Title IX Include Gender Identity?*, THE NAT’L LAW JOURNAL (Dec. 5, 2016)

<http://www.law.com/nationallawjournal/almID/1202773792254/?slreturn=20170922151932> (describing courts’ trouble interpreting sex, gender, gender identity in lawsuits).

²¹ *Gender*, MERRIAM-WEBSTER, *supra* note 18.

²² See *Gender identity*, NAT’L CTR. FOR TRANSGENDER EQUAL., <https://www.transequality.org> (last visited Aug. 29, 2017) (defining gender identity as a person’s elected gender)

²³ For a discussion regarding how courts in the U.S. have struggled with compartmentalizing sex and gender as concepts see *infra* notes 24–29.

²⁴ Compare *Schroer v. Billington*, 577 F. Supp. 2d 293, 295 (U.S.D.C. 2008) (characterizing male-to-female transsexual correctly and offering a definition for gender identity); with *Macy v. Holder*, 2012 WL 1435995 (E.E.O.C. 2012) (using correct definitions of ‘transgender,’ ‘gender identity,’ and ‘change of sex’); with *Chavez v. Credit Nation Auto Sales, LLC*, 641 Fed. App’x. 883, 883 (11th Cir. 2016) (“Sex discrimination includes discrimination against a transgender person for gender non-conformity”) (citing *Glenn v. Brumby*, 663 F.3d 1312, 1316–17 (11th Cir. 2011)) (stating terms such as ‘gender non-conformity’ and ‘gender transition,’ where neither are accurate statements because gender is chosen by individuals); with *Hively v. Ivy Tech Cmty. Coll.*, 830 F.3d 698 (7th Cir. 2016) (referring to ‘gender non-conformity’ and interchangeably using ‘sex’ and ‘gender’).

²⁵ See *Chavez*, 641 Fed. App’x. at 883 (discussing gender transition instead of sex reassignment surgery); see also *Hively*, 830 F.3d 698 (referring to ‘gender non-conformity’ and interchangeably using ‘sex’ and ‘gender’).

²⁶ See generally *Chavez*, 641 Fed. App’x. at 883 (discussing gender transition instead of sex reassignment surgery).

²⁷ See *id.* at 883 (using the term gender non-conformity when referring to stereotyping and gender norms); see also generally *Hively*, 830 F.3d 698 (using gender non-conformity).

²⁸ See *Chavez*, 641 Fed. App’x. at 883 (using the term gender non-conformity when referring to stereotyping and gender norms); see also generally *Hively*, 830 F.3d 698 (using gender non-conformity); for a full discussion on the difference between sex and gender see *supra* notes 17–22.

²⁹ See *Chavez*, 641 Fed. App’x. at 883 (using the term gender non-conformity when referring to stereotyping and gender norms); see also generally *Hively*, 830 F.3d 698 (using gender non-conformity); for a full discussion on gender identity versus sex reassignment surgery see *infra* notes 30–33.

³⁰ See *Sex Reassignment Surgery*, NAT’L CTR. FOR TRANSGENDER EQUAL., *supra* note 22 (defining sex reassignment surgery as the process of physically changing one’s biological sex organs to conform with one’s gender identity).

or biological sex is transgender.³¹ The process of changing one's gender expression (the outward expression or appearance of a person) to conform with one's gender identity is called transitioning.³² If an individual decides to pursue sex reassignment surgery, there is one for each of the sexes.³³

When a person does not exhibit any identifying or classifying sexual organs, he or she is intersex.³⁴ Although an individual may be intersex and may have ambiguous genitals, many are unaware of their difference in sex development (DSD) and grow up associating with their predominantly visible sex (whichever sex for which they develop more characteristic traits).³⁵ Some experts contend that testosterone is the biological hormone that differentiates males from females, but intersex individuals with hyperandrogenism and androgen insensitivities “cause[] a person to produce high levels of hormones” without necessarily absorbing them.³⁶ The measure employed by the Olympics to determine hormone levels consists of sampling how many nano moles of testosterone there are per liter of serum in the blood.³⁷

³¹ See *Transgender*, MERRIAM-WEBSTER, *supra* note 18 (“Of, relating to, or being a person whose gender identity differs from the sex the person had or was identified as having at birth.”); see also *Transgender*, NAT’L CTR. FOR TRANSGENDER EQUAL., *supra* note 22 (using a definition highly comparable to Merriam-Webster).

³² See *Transitioning*, NAT’L CTR. FOR TRANSGENDER EQUAL., *supra* note 22 (defining transitioning as a lifestyle change during which an individual begins to live as his or her gender identity).

³³ See *Male-to-Female*, NAT’L CTR. FOR TRANSGENDER EQUAL., *supra* note 22 (“MTF [male-to-female]: A person who transitions from ‘male-to-female,’ meaning a person who was assigned male at birth, but identifies and lives as a female. Also known as a ‘transgender woman.’”); see also *Female-to-Male*, NAT’L CTR. FOR TRANSGENDER EQUAL., *supra* note 22 (“FTM [female-to-male]: A person who transitions from ‘female-to-male,’ meaning a person who was assigned female at birth, but identifies and lives as a male. Also known as a ‘transgender male.’”)

³⁴ See *Intersex*, NAT’L CTR. FOR TRANSGENDER EQUAL., *supra* note 22 (“A term used for people who are born with a reproductive or sexual anatomy and/or chromosome pattern that does not seem to fit typical definitions of male or female. Intersex conditions are also known as differences of sex development (DSD).”)

³⁵ See, e.g., *Chand v. AFI & LAAF*, CAS 2014/A/3759 at 4–5 (Jul. 24, 2015) (stating facts regarding Dutee Chand’s medical testing leading to discovery of her intersex condition).

³⁶ *Hyperandrogenism Explained and What it Means for Athletics*, USA TODAY (Aug. 2, 2016, 3:35 AM), <https://www.usatoday.com/story/sports/olympics/2016/08/02/hyperandrogenism-explained-and-what-it-means-for-athletics/87944968/> (explaining that hyperandrogenism presents in many forms but most common in Olympics regulation is overproduction of testosterone by intersex female athletes); see *Androgen Insensitivity Syndrome*, U.S. NAT’L LIBRARY OF MED., <https://medlineplus.gov/ency/article/001180.htm> (last updated Aug. 16, 2017) (“Androgen insensitivity syndrome (AIS) is when a person who is genetically male (who has one X and one Y chromosome) is resistant to male hormones (called androgens). As a result, the person has some or all of the physical traits of a woman, but the genetic makeup of a man.”); see also *Testosterone*, MERRIAM-WEBSTER, *supra* note 18 (defining testosterone as the sex hormone typically associated with males); for a full discussion of the impact of testosterone on an athlete’s athletic advantage, see *infra* notes 92-105 and accompanying text.

³⁷ See, e.g., *Chand*, CAS 2014/A/3759 (explaining levels of testosterone in “normal” males and females as well as those present in Dutee Chand and other intersex athletes); see also Ruth Padawer, *The Humiliating Practice of Sex-Testing Female Athletes*, THE NEW YORK TIMES MAGAZINE (June 28, 2016), <https://www.nytimes.com/2016/07/03/magazine/the-humiliating-practice-of-sex-testing-female-athletes.html> (differentiating levels of testosterone in average males and females as opposed to intersex athletes); see also Grace Carr, *Here’s What the 2018 Olympic Gender Regulations Look Like*, THE DAILY CALLER NEWS FOUND. (Jul. 3, 2017, 2:28 PM), <http://dailycaller.com/2017/07/03/heres-what-the-2018-olympic-gender-regulations-look-like/> (differentiating levels of testosterone in average males and females as opposed to intersex athletes); see also Christie Aschwanden, *The Olympics are Still*

B. Emergence of the Issue

A vast majority of sports fans have probably never given a second thought to gender classifications in the Olympics.³⁸ However, the issue is far more common than most would suspect.³⁹ A new look at gender classification in the Olympics emerged over the past few years with Caitlyn Jenner's transition, Caster Semanya's triumphant win of several gold medals at the Rio Olympics, and Dutee Chand's high-profile case against the International Association of Athletics Federation (IAAF) and Athletic Federation of India (AFI).⁴⁰ Chand, who has gained notoriety over challenging the IAAF and AFI, was recommended for hormonal testing after a preliminary round of the Olympics.⁴¹ The appeal that Chand filed with the Court of Arbitration for Sport (CAS) was decided in 2015 and gave the IAAF until 2017 to introduce new evidence.⁴² The CAS suspended hormonal gender testing unless and until the IAAF could produce verification that higher testosterone levels gave female athletes an athletic advantage proportional to the normal male-to-female advantage.⁴³

In response to Chand's case with the CAS, the International Olympics Committee (IOC) suspended gender testing for the upcoming South Korea games in

Struggling to Define Gender, FIVETHIRTYEIGHT (Jun. 28, 2016, 3:24 PM), <https://fivethirtyeight.com/features/the-olympics-are-still-struggling-to-define-gender/> (differentiating levels of testosterone in average males and females as opposed to intersex athletes); for a full discussion on the levels of testosterone accepted for male and female professional athletes, see *infra* notes 92–105 and accompanying text.

³⁸ For a discussion on how this issue reemerged in recent years, see *infra* notes 40–43 and accompanying text.

³⁹ See, e.g., Greene, *supra* note 14, at 60–61 (“A stunning female success by Helen Stephens . . . gave rise to charges that she was a female imposter; an official examined her genitals in order to confirm her gender.”); see also Buzuvis, *supra* note 1, at 32 (discussing several instances in which female athletes were accused of “gender fraud”); see also UNIV. OF MINNESOTA, *Rio Olympics Raise New Questions About Sex-Testing Athletes* (Aug. 4, 2016), <https://consortium.umn.edu/news/rio-olympics-raise-new-questions-about-sex-testing-athletes> (discussing Helen Stephens and Stella Walsh as examples of females accused of gender fraud).

⁴⁰ See, e.g., Aschwanden, *supra* note 37 (discussing Jenner's view on IOC's regulations); see generally Guardian Sport, *What is an Intersex Athlete? Explaining the Case of Caster Semanya*, THE GUARDIAN (Jul. 29, 2016, 7:13 PM), <https://www.theguardian.com/sport/2016/jul/29/what-is-an-intersex-athlete-explaining-the-case-of-caster-semenya> (detailing Semanya's case against the IAAF); see generally Chand, CAS 2014/A/3759.

⁴¹ See Buzuvis, *supra* note 1, at 42–43 (discussing CAS's use of suspicion-based testing in modern era as opposed to mandatory testing for all women).

⁴² See generally Chand, CAS 2014/A/3759 (holding in interim arbitral award that Hyperandrogenism Regulations are suspended for following two years and that IAAF is permitted to submit further evidence of hormone advantage during this time).

⁴³ See generally *id.* (holding partially that IAAF has ability to submit further evidence any time before July 2017) (holding also that average male-to-female competitive athletic advantage is 10-13% as opposed to 1-3% advantage for hyperandrogenic women over women without DSDs); for a more detailed discussion on Chand's appeal to the CAS, see *infra* notes 140–161 and accompanying text.

2018.⁴⁴ Previously, the IOC adopted the IAAF's testosterone rule from 2014.⁴⁵ The CAS suspended the IAAF's testosterone rule due to lack of evidence of athletic advantage for those with higher testosterone levels.⁴⁶ Further, testosterone levels of Olympic-level athletes tend to be skewed due to over-training, athleticism, and the use of performance enhancing drugs.⁴⁷ Typical females and males have a large separation of testosterone levels, but Olympic-level athletes tend to have a constant range where males and females overlap.⁴⁸ Further, a normal male-to-female athletic advantage is estimated to be between 10–13%, while there is little to no data to suggest that intersex female athletes carry this same advantage in relation to women without DSDs.⁴⁹ In fact, it is hypothesized that female athletes with hormonal issues only experience a 1–3% advantage over females that produce an average amount of testosterone and other hormones.⁵⁰ Lastly, there is no scientific evidence that testosterone alone accounts for the advantage between males and females.⁵¹ Testosterone is the most highly produced

⁴⁴ See generally Chand, CAS 2014/A/3759; see also IOC Consensus Meeting on Sex Reassignment and Hyperandrogenism November 2015, INT'L OLYMPIC COMMITTEE (Nov. 2015), https://stillmed.olympic.org/Documents/Commissions_PDFfiles/Medical_commission/2015-11_ioc_consensus_meeting_on_sex_reassignment_and_hyperandrogenism-en.pdf (stating that IOC Consensus Meeting recommends IOC suspend IAAF's Hyperandrogenism Regulations until resolution of Chand's appeal or introduction of new evidence by IAAF).

⁴⁵ See Chand, CAS 2014/A/3759 at 14–25 (listing in detail all of IAAF's regulations regarding female athletes, especially those who are intersex and/or those who have hyperandrogenism); see also Robert W. Luckinbill & Ronald S. Katz, *Changing Sex/Gender Roles and Sport*, 28 STANFORD LAW & POLICY REVIEW 215, 232–34 (2017) (describing evolution of IOC's and IAAF's regulations regarding hyperandrogenism as well as IOC's adoption of IAAF policies).

⁴⁶ See, e.g., Buzuvis, *supra* note 1, at 42–43 (explaining that 10 nmol/L is cutoff between men and women); see also Amanda Schaffer, *Gender Games: The Olympics Has a New Way to Test Whether Athletes Are Men or Women. Is it Fair?*, SLATE (Jul. 25, 2012, 7:30 AM) (reviewing a study in which more than one quarter of Olympic-level male athletes had testosterone levels “below the normal male range”).

⁴⁷ See, e.g., Robert Wood, *Gender Testing at the Olympic Games*, TOPEND SPORTS, <http://www.topendsports.com/events/summer/gender-testing.htm> (last visited Aug. 29, 2017) (reviewing difficulties when determining cutoff for Olympic-level athletes, as women were typically below 3 nmol/L, men ranged between 7 and 30 nmol/L).

⁴⁸ See, e.g., The Associated Press, *Naturally High Testosterone Snares Female Athletes in Rio*, NBC NEWS (Aug. 15, 2016, 3:52 PM) (explaining normal females typically have testosterone below 3 nmol/L while Olympic-level females tend to have higher levels of testosterone, partially due to fact that Olympic-level female athletes are 140 times more likely to be hyperandrogenic).

⁴⁹ See, e.g., Buzuvis, *supra* note 1, at 36–9 (explaining that intersex female athletes and those with androgen insensitivities are unable to absorb the extra levels of testosterone in their bloodstream, providing them no advantage similar to males); see also Greene, *supra* note 14, at 69–80 (differentiating between endogenous and exogenous testosterone and the absorption abilities of both within the female body).

⁵⁰ See Johanna Gretschel, *IAAF Releases New Study as it Tries to Reinstate Rules on Testosterone*, FLOTRACK (Jul. 6, 2017) (restating new finding by IAAF that the unabsorbed testosterone provides little to no advantage for androgen insensitive female athletes, which creates only a 2–4% advantage).

⁵¹ See generally Chand, CAS 2014/A/3759 (holding higher levels of testosterone were not proven to give hyperandrogenic athletes a competitive edge); see also Associated Press, *IOC Rules Transgender Athletes Can Take Part in Olympics Without Surgery*, THE GUARDIAN (Jan. 24, 2016, 8:04 PM), <https://www.theguardian.com/sport/2016/jan/25/ioc-rules-transgender-athletes-can-take-part-in-olympics-without-surgery> (reiterating idea that higher levels of testosterone have not been proven to give athletes competitive advantage).

androgenic hormone, but it is not the only factor that can produce a difference between the genders.⁵²

C. International Legal Gender Recognition

The Olympics, as an international organization, required transgender athletes to complete sex reassignment surgery before reclassification of gender occurred.⁵³ However, several countries restrict or prohibit sex reassignment surgery.⁵⁴ In 2012, there was an international move to recognize transgender individuals without first requiring the surgeries.⁵⁵ Argentina was the first country to offer “sex-change surgery [as] a legal right.”⁵⁶ Argentina “include[s] the procedure] in both public and private health care plans.”⁵⁷ Denmark’s Parliament was the first European country to institute a similar policy to Argentina, which “allow[s] legal gender recognition for transgender people over the age of 18, solely based on their self-determination – without any medical intervention.”⁵⁸ More specifically, countries such as Colombia, Ireland, and Malta eliminated barriers to legal gender recognition.⁵⁹ Several countries even legally recognized a third gender beyond the typical male-female dichotomy.⁶⁰ In Nepal, the “third gender category [is recognized] on voter rolls (2010), the federal census (2011), citizenship documents (2013), and passports (2015).”⁶¹ “New Zealand and Australia now offer the option to have gender listed as ‘unspecified’ on official documents.”⁶²

⁵² See generally *Chand*, CAS 2014/A/3759 (accepting testosterone as predictive factor of athletic advantage without scientific proof); see also Myron Genel, MD, Joe Leigh Simpson, MD & Albert de la Chapelle, MD, PhD, *The Olympic Games & Athletic Sex Assignment*, THE JAMA NETWORK (Oct. 4, 2016), <http://jamanetwork.com/article.aspx?doi=10.1001/jama.2016.11850> (reviewing other types of congenital mutations that can create competitive advantage).

⁵³ See generally INT’L OLYMPIC COMM., *supra* note 44 (disbanding Stockholm Consensus that was approved in 2004 and required transgender athletes to undergo sex reassignment surgery before eligible competition); for full discussion and description of transgender athlete requirements, see *infra* notes 92–99 and accompanying text.

⁵⁴ See generally Neela Ghoshal & Kyle Knight, *Rights in Transition: Making Legal Recognition for Transgender People a Global Priority*, HUMAN RIGHTS WATCH (2011), <https://www.hrw.org/world-report/2016/rights-in-transition> (explaining that some countries have actively enforced laws disallowing ‘posing’ as the opposite gender including Nigeria, Kuwait, and Malaysia).

⁵⁵ See, e.g., *id.* (“[Argentina revised its law in 2012, stating] anyone over the age of 18 can choose their gender identity, undergo [sex] reassignment and revise official documents without any prior judicial or medical approval.”).

⁵⁶ Azadeh Ansari, *Transgender Rights: These Countries are Ahead of the U.S.*, CNN (Feb. 23, 2017, 12:28 PM), <http://www.cnotescom/2017/02/23/health/transgender-laws-around-the-world/index.html> (rejecting previous laws to allow for sex reassignment surgery as a right rather than a privilege).

⁵⁷ *Id.* (requiring health insurance to allow insured individuals access to sex reassignment surgery).

⁵⁸ *Id.* (stating that 34 countries in Europe require medical intervention or a psychiatric diagnosis in order to obtain changed gender recognition).

⁵⁹ See Ghoshal & Knight, *supra* note 54 (detailing Ireland’s identity-based legal gender recognition system put in place after same-sex marriage referendum passed).

⁶⁰ See, e.g., *id.* (including countries such as Pakistan, Bangladesh, and India, who all recognize the third gender *hijras*); see also Ansari, *supra* note 56 (detailing Malta’s, Iran’s, and India’s legal changes).

⁶¹ Ghoshal & Knight, *supra* note 54; see generally Michael Bochenek & Kyle Knight, *Establishing a Third Gender Category in Nepal: Process and Prognosis*, 26 EMORY INT’L L. REV. 11 (2012) (explaining history and current standing of Nepal’s “third gender” laws).

⁶² Ghoshal & Knight, *supra* note 54 (describing several countries’ initiatives allowing for third gender category on official documents).

Canada has joined the movement along with “[a]t least seven countries [that] currently allow citizens to choose a non-binary option on their passports.”⁶³

D. U.S. Legal Gender Recognition

The United States leaves issuing new birth certificates and other identification mostly up to the individual states.⁶⁴ Of the fifty states, four do not allow for a change in birth certificate recognition.⁶⁵ The other forty five states and the District of Columbia (with the exception of Washington, who remains silent on the issue) will allow for the issuance of a new birth certificate, but all require that sex reassignment surgery has been completed.⁶⁶ There has been a national move toward recognizing nonbinary individuals, however.⁶⁷ Oregon was the first state to legally recognize nonbinary as a gender.⁶⁸ California’s Governor Jerry Brown recently signed a bill that will go into effect in 2019 and will legally recognize a third gender.⁶⁹ California’s Senate Bill 179 will also provide easier access for individuals changing their on state-issued documents, which previously required doctor approval.⁷⁰ The federal government issues passports with a changed sex classification, but requires a “medical certification that indicates [a person is] in the process of or ha[s] had appropriate clinical treatment for gender transition.”⁷¹ The federal government, however, does not require that a person’s “citizenship evidence (e.g. U.S. birth certificate) and ID” match the updated gender marker on one’s passport.⁷²

⁶³ Andrew Blake, *Third Gender Option Planned for Canadian Passports*, THE WASHINGTON TIMES, LLC (May 5, 2017) <http://www.washingtontimes.com/news/2017/may/5/third-gender-option-planned-canadian-passports/> (describing Canada’s effort to join other international powers to recognize third gender category on official documents).

⁶⁴ For a some of the statutes specifying when individuals can change sex classification on birth certificates, see *infra* notes 65–66 and accompanying text.

⁶⁵ See Idaho Code § 39-250 (2005); see K.S.A. § 65-2422c (2009); see *In re Estate of Gardiner*, 29 Kan. App. 2d 92 (2001) (overruling administrative rule that allowed birth certificate gender change in limited circumstances); see Ohio Rev. Code § 3705.15 (2006); see Tenn. Code § 68-3-203(d) (2006).

⁶⁶ Compare Ala. Code § 22-9A-19(d) (2004); with Ga. Code § 31-10-23(e) (2005); with N.J. Stat. § 26:8-40.12 (2006); with W. Va. Code § 16-5-25 (2006).

⁶⁷ See Hazel Cills, *California Officially Recognizes Third Gender*, JEZEBEL (Oct. 16, 2017) <https://jezebel.com/california-officially-recognizes-third-gender-1819502627> (reporting California’s move to recognize gender outside of the binary).

⁶⁸ See *id.* (detailing history of other U.S. states’ move toward recognizing third gender) (“Last year Oregon legally recognized ‘nonbinary’ as a gender. This year Washington, D.C. began offering non-binary drivers licenses, and New York is considering similar legislation . . .”).

⁶⁹ See *id.* (explaining Governor’s support to legally recognize third gender option).

⁷⁰ For a list of states that require sex reassignment surgery or medical approval in order to change state-issued identification and birth certifications, see *supra* notes 65–66 and accompanying text.

⁷¹ *Gender Designation Change*, U.S. DEP’T OF STATE, <https://travel.state.gov/content/passports/en/passports/information/gender.html> (last visited Aug. 29, 2017) (underlining omitted); (“[A person’s] physician determines what appropriate clinical treatment is according to acceptable medical practices, standards and guidelines, and certifies that [a person] ha[s] had appropriate clinical treatment for gender transition to either male or female. Surgery is not a requirement to get a U.S. passport.”) (bold lettering omitted).

⁷² *Id.* (showcasing federal government’s reliance on genitals as indicator of gender).

E. History of Olympics' Gender⁷³ Verification

Women were not always allowed to participate in the Olympics.⁷⁴ Once women were allowed to participate, the sports that were open to them were limited.⁷⁵ Further, a fear developed among athletes that men would pretend to be women so as to win an Olympic medal more easily.⁷⁶ This fear became so widespread that officials took notice and, in 1966, the IOC forced women to participate in naked parades to verify their genitals.⁷⁷ Men were excluded from these naked parades because a woman masquerading as a man would provide her with no athletic benefit or advantage, a modernly-held belief according to the IAAF and IOC.⁷⁸ This method of determining sex left intersex athletes as targets.⁷⁹

Nude parades also forced the idea that a person's gender was directly related to their biological sex.⁸⁰ Athletes were barred from competing as their gender identity if it conflicted with their genitals.⁸¹ Sex reassignment surgeries during the mid-twentieth century were unsafe and rare, which restricted transgender athletes from competing in the body of their gender identity.⁸² In fact, there are no records of a transgender athlete participating in the Olympics while sex reassignment surgery was

⁷³ For a discussion regarding the differences between sex, gender, and gender identity see *supra* notes 17–31 and accompanying text; see *supra* note 53 for reference to transgender athletes being able to compete without sex reassignment surgery.

⁷⁴ See, e.g., Buzuvis, *supra* note 1, at 31 (discussing long and tumultuous history of women gaining access to athletic competition); see also Greene, *supra* note 14, at 59 (discussing emergence of women in sport); see also Laura A. Wackwitz, *Verifying the Myth: Olympic Sex Testing and the Category "Woman,"* 26 INT'L WOMEN'S STUDIES FORUM 553, 553 (2003) (discussing emergence of women in sport).

⁷⁵ See Greene, *supra* note 14, at 60 ("The [IOC's] conference produced a document entitled 'Women's Participation in Athletics' which imposed substantial limitations and noted distinctions between male and female Olympic competition and provided a basis for the imposition of limits on those who qualify as female for purposes of Olympic competition.").

⁷⁶ See, e.g., *id.* at 60–61 (using Helen Stephens as example of woman whose gender was questioned based on athletic excellence); see also Buzuvis, *supra* note 1, at 32 (discussing several instances in which female athletes were accused of "gender fraud"); see also UNIV. OF MINNESOTA, *supra* note 39 (discussing Helen Stephens and Stella Walsh as examples of females accused of gender fraud).

⁷⁷ See, e.g., Greene, *supra* note 14, at 61 (discussing nude parades initiated by IOC in order to verify sex of athletes); see also Buzuvis, *supra* note 1, at 32–33 (discussing nude parades initiated by IOC in order to verify sex of athletes).

⁷⁸ See generally *Chand*, CAS 2014/A/3759 (ruling only women need to be tested for hormone levels).

⁷⁹ See, e.g., Greene, *supra* note 14, at 61 (discussing gender suspicion and several instances of female athletes having ambiguous genitalia); see also Buzuvis, *supra* note 1, at 32–33 (listing examples of female athletes attacked for suspicions of gender fraud); for a definition of the term 'intersex,' see *supra* notes 34–37 and accompanying text.

⁸⁰ For a definition of each and discussion of why these terms are different, see *supra* notes 16–32 and accompanying text.

⁸¹ For a discussion on how this is changing and the current transgender rules adopted by the IOC, see *infra* note 96 and accompanying text.

⁸² See, e.g., Horatia Harrod, *The Tragic True Story Behind the Danish Girl*, THE TELEGRAPH (Feb. 28, 2016, 8:30 PM), <http://www.telegraph.co.uk/films/2016/04/14/the-tragic-true-story-behind-the-danish-girl/> (outlining the history of first sex reassignment surgery in Germany in 1930 of Einar Wegener to Lili Elbe, who died one year after completion of surgery); see also The News Letter, *Hopkins Hospital: A History of Sex Reassignment*, THE JOHNS HOPKINS NEWS-LETTER (May 1, 2014), <http://www.jhunewsletter.com/2014/05/01/hopkins-hospital-a-history-of-sex-reassignment-76004/> (discussing history of sex reassignment surgery in United States, including first sex reassignment surgery at U.S. academic institution in 1965).

a requirement.⁸³ A prevailingly modern view, even in the medical community, is that gender identity and sex organs need not be linked – a person can identify as a female without having characteristically female genitalia and it makes no difference on her psyche.⁸⁴

Nude parades gave way to chromosomal testing due to the emergence of differences of sex development, such as intersex and androgen insensitivities.⁸⁵ Chromosomal testing occurs in the form of a buccal smear, which is an invasive testing method requiring blood and other body fluid samples.⁸⁶ The test is designed to detect the “silent X” chromosome in females.⁸⁷ If the silent X did not present in the test, it was assumed that the second chromosome was a Y and that the athlete was a male.⁸⁸ Not only did this present issues for intersex athletes, who can develop physically as a woman but have the chromosomes associated with males (XY), but it also presented issues for athletes that had other biological mutations.⁸⁹ Athletes with biological mutations that caused them to have three chromosomes instead of two failed the buccal smear and were disqualified from Olympic competition.⁹⁰ Buccal smears were replaced with the current method of testing which measures the testosterone hormone levels of athletes.⁹¹

Hormonal testing is an invasive method similar to buccal smears except that it tests for the nano mole per liter (nmol/L) levels of testosterone within an athlete’s blood serum.⁹² The IOC and other sports federations required transgender athletes to undergo hormone testing; however, only male-to-female transgender athletes were

⁸³ See Associated Press, *supra* note 51 (arguing in favor of transgender athletes not requiring sex reassignment surgery and detailing IOC’s overruling of 2003 regulation that required reassignment surgery).

⁸⁴ See The News Letter, *supra* note 82 (“[Sexual Behavior Consultation Unit] Chair Jon Meyer . . . concluded that those who had the surgery were not more adjusted to society than those who did not have the surgery. Meyer told The New York Times . . . ‘My personal feeling is that surgery is not proper treatment for a psychiatric disorder, and it’s clear to me that these patients have severe psychological problems that don’t go away following surgery.’”)

⁸⁵ For definitions of ‘intersex’ and ‘androgen insensitivities,’ see *supra* notes 34–37 and accompanying text.

⁸⁶ See, e.g., Buzuvis, *supra* note 1, at 32–35 (explaining how buccal smear test and presence of “silent X” differentiates males from females); see also Greene, *supra* note 14, at 61–63 (discussing buccal smear test); see also Wood, *supra* note 47 (discussing buccal smear test).

⁸⁷ See, e.g., Buzuvis, *supra* note 1, at 32–35 (explaining how buccal smear test and presence of “silent X” differentiates males from females); see also Greene, *supra* note 14, at 61–63 (discussing buccal smear test); see also Wood, *supra* note 47 (discussing buccal smear test).

⁸⁸ See, e.g., Buzuvis, *supra* note 1, at 32–35 (explaining how buccal smear test and presence of “silent X” differentiates males from females); see also Greene, *supra* note 14, at 61–63 (discussing buccal smear test); see also Wood, *supra* note 47 (discussing buccal smear test).

⁸⁹ See, e.g., Buzuvis, *supra* note 1, at 32–35 (explaining how buccal smear test and presence of “silent X” differentiates males from females); see also Greene, *supra* note 14, at 61–63 (discussing buccal smear test); see also Wood, *supra* note 47 (discussing buccal smear test).

⁹⁰ See, e.g., Buzuvis, *supra* note 1, at 32–35 (explaining how chromosomal combinations of XXY led to disqualification of athletes despite biological development as female); see also Greene, *supra* note 14, at 61–63 (discussing buccal smear test); see also Wood, *supra* note 47 (discussing buccal smear test).

⁹¹ See, e.g., INT’L OLYMPIC COMM., *supra* note 44 (noting IOC’s use of hormonal testing – specifically testosterone – as current method of gender verification).

⁹² See, e.g., *id.* (stating IOC’s cut-off for testosterone level for female athletes as 10 nmol/L).

required to submit to hormone level regulation.⁹³ Female-to-male transgender athletes were not required to undergo sex reassignment surgery or hormone testing due to the lack of biological advantage or physical superiority present.⁹⁴ Male-to-female transgender athletes were determined to have both physical and biological advantages over other female athletes and were required to submit to hormonal testing during and after their transition.⁹⁵ IOC guidelines in 2015 required any transgender woman to be legally recognized as such for four years before she could participate as a female in the Olympic Games.⁹⁶ Further, her testosterone levels had to remain below 10 nmol/L before and during competition or she risked being disqualified from both categories of competition.⁹⁷

⁹³ See, e.g., Buzuvis, *supra* note 1, at 35 (“[T]he policy seems to be concerned only about the transition of transgender women . . . The fact that this purportedly general policy only makes sense when applied to transgender women belies its drafters’ biased assumption of the athletic inferiority of natal females.”).

⁹⁴ See, e.g., *id.* at 34–36 (discussing discriminatory nature of hormone testing due to emphasis on male-to-female transgender athletes).

⁹⁵ See, e.g., *id.* (discussing disproportionate effect on male-to-female transgender athletes due to perceived inherent athletic advantage of men)

⁹⁶ 1) Transgender guidelines

A. Since the 2003 Stockholm Consensus on Sex Reassignment in Sports, there has been a growing recognition of the importance of autonomy of gender identity in society, as reflected in the laws of many jurisdictions worldwide.

B. There are also, however, jurisdictions where autonomy of gender identity is not recogni[z]ed in law at all.

C. It is necessary to ensure insofar as possible that trans athletes are not excluded from the opportunity to participate in sporting competition.

D. The overriding sporting objective is and remains the guarantee of fair competition. Restrictions on participation are appropriate to the extent that they are necessary and proportionate to the achievement of that objective.

E. To require surgical anatomical changes as a pre-condition to participation is not necessary to preserve fair competition and may be inconsistent with developing legislation and notions of human rights . . .

G. These guidelines are a living document and will be subject to review in light of any scientific or medical developments . . .

1. Those who transition from female to male are eligible to compete in the male category without restriction.

2. Those who transition from male to female are eligible to compete in the female category under the following conditions:

2.1. The athlete has declared that her gender identity is female. The declaration cannot be changed, for sporting purposes, for a minimum of four years.

2.2. The athlete must demonstrate that her total testosterone level in serum has been below 10 nmol/L for at least 12 months prior to her first competition (with the requirement for any longer period to be based on a confidential case-by-case evaluation, considering whether or not 12 months is a sufficient length of time to minimize any advantage in women’s competition).

2.3. The athlete’s total testosterone level in serum must remain below 10 nmol/L throughout the period of desired eligibility to compete in the female category.

2.4. Compliance with these conditions may be monitored by testing. In the event of non-compliance, the athlete’s eligibility for female competition will be suspended for 12 months.

INT’L OLYMPIC COMM., *supra* note 44 (providing explicitly that men are perceived to have inherent athletic advantage so only male-to-female athletes are subject to regulations).

⁹⁷ See *id.* (explaining requirements for transgender athletes to remain eligible).

Hormonal testing raised issues not only for transgender athletes, but for those with intersex conditions, androgen insensitivities, and other congenital disorders.⁹⁸ Intersex athletes and those with androgen insensitivities tend to produce higher levels of testosterone than other female athletes.⁹⁹ Hyperandrogenism, which is a congenital disorder, leads to elevated levels of testosterone due to an androgen insensitivity.¹⁰⁰ Hyperandrogenism causes individuals to develop as females but have higher levels of testosterone, leading many to be unaware of their condition.¹⁰¹ Further, other congenital disorders can result in increased athletic ability but are not detected by testosterone regulation.¹⁰² There is little to no evidence suggesting that intersex athletes and those with androgen insensitivities have a competitive advantage over women that produce less testosterone.¹⁰³ In fact, an androgen insensitivity inherently means that that female is unable to absorb the extra testosterone in her blood.¹⁰⁴ This means that a woman with an insensitivity could absorb potentially the same levels of testosterone as normally-producing women.¹⁰⁵

The guidelines proffered by the IOC and the IAAF have been challenged before by athletes accused of gender fraud or a competitive advantage.¹⁰⁶ The most recent case that resulted in a challenge to the hyperandrogenism rules came in the form of Dutee Chand's appeal to the CAS.¹⁰⁷ Chand was suspected of having a competitive advantage based on her exceptional sprinting times and her gait that resembled that of a male despite her small frame.¹⁰⁸ Chand's appeal was met with the IOC's suspension of its hyperandrogenism rules, as well as a recommendation from the IOC Consensus Meeting to "revert to CAS with arguments and evidence to support the reinstatement of its hyperandrogenism rules."¹⁰⁹

⁹⁸ For definitions of intersex and androgen insensitivity, see *supra* notes 34–37 and accompanying text.

⁹⁹ *Id.* (defining hyperandrogenism and fact that this DSD inherently results in overproduction of testosterone).

¹⁰⁰ *Id.* (providing within definition of 'hyperandrogenism' that androgen insensitivities result in overproduction but non-absorption of testosterone).

¹⁰¹ See generally *Chand*, CAS 2014/A/3759 (describing facts that led to Chand's appeal as well as how she was unaware of her hyperandrogenic condition); see *infra* notes 140–161 and accompanying text for a discussion of Chand's legal battle and discussion of how she was unaware of her DSD.

¹⁰² Genel, et al, *supra* note 52 (discussing other congenital mutations that lead to heightened athletic performance yet do not disqualify athletes from competition).

¹⁰³ See, e.g., *Chand*, CAS 2014/A/3759 at 2–5 (differentiating between endogenous and exogenous testosterone and explaining Chand's higher levels of testosterone are due to androgen insensitivity – i.e., hyperandrogenism).

¹⁰⁴ See, e.g., *id.* (differentiating between exogenous testosterone and endogenous testosterone, as one is naturally occurring within the body and the other is supplied intravenously as a way to 'dope').

¹⁰⁵ See generally *id.* (hinting at fact that women with DSDs produce excess testosterone but have a condition that makes them insensitive to testosterone and other androgens, which means they may not be absorbing any excess hormones).

¹⁰⁶ See generally *Guardian Sport*, *supra* note 40 (detailing Semenya's case against the IAAF).

¹⁰⁷ See *Chand*, CAS 2014/A/3759 at 2–14 (detailing procedural posture of case).

¹⁰⁸ *Id.* (discussing suspicion-based testing and reasons for members of SAI and AFI to suspect Chand of DSD).

¹⁰⁹ INT'L OLYMPIC COMM., *supra* note 44 (explaining posture and outcome of Chand's appeal).

F. Legal Issues Raised in CAS

1. Constitutional Issues

The right to privacy in the United States can be found in both the Fourth and the Fourteenth Amendments.¹¹⁰ The Fourth Amendment right to privacy protects individuals from warrantless searches and seizures.¹¹¹ This right was first protected in *Katz* where the court found that individual citizens have a reasonable expectation of privacy against these searches and seizures.¹¹² Since *Katz*, the Fourth Amendment protection has moved toward reasonableness of state action.¹¹³ This viewpoint was contested early on in Fourth Amendment progeny in both *Terry* and *Schmerber* where the court focused on dignity and bodily integrity.¹¹⁴ *Terry* was a stop and frisk case that aimed to protect against “intrusion upon the sanctity of the person.”¹¹⁵ Although the *Schmerber* court did not find a violation of the individual’s right to privacy, the case centered on a blood sample taken to be used as evidence in an upcoming trial.¹¹⁶ Regardless of *Terry* and *Schmerber*, the court has continued its move toward reasonableness of state action and away from constitutional liberties typically protected under the Fourteenth Amendment.¹¹⁷

The Fourteenth Amendment’s right to privacy was founded in *Griswold* as a penumbra of the First, Third, Fifth, and Ninth Amendments.¹¹⁸ *Roe* expanded this right to privacy and stated that the right was “founded in the Fourteenth Amendment’s

¹¹⁰ See generally Elise Holtzman, “*I am Cait*,” *But it’s None of Your Business: The Problem of Invasive Transgender Policies and a Fourth Amendment Solution*, 68 FLA. L. REV. 1943 (2016) (arguing an interpretation of the Fourth Amendment that would protect invasion of privacy based on more than unreasonableness of state action).

¹¹¹ See generally *Katz v. United States*, 389 U.S. 347 (1967) (developing Fourth Amendment law as reasonable expectation of privacy against warrantless searches and seizures rather than protection of constitutional liberties as under Fourteenth Amendment).

¹¹² See generally *id.* (limiting Fourth Amendment protection to unreasonableness of state action rather than extent of bodily invasion); see also Holtzman, *supra* note 110, at 1956–75 (detailing historical interpretation of Fourth Amendment and arguing for broader and more modern interpretation so as to protect transgender individuals).

¹¹³ See Holtzman, *supra* note 110, at 1956–75 (detailing historical interpretation of Fourth Amendment and arguing for broader and more modern interpretation so as to protect transgender individuals).

¹¹⁴ See *Terry v. Ohio*, 392 U.S. 1 (1968) (focusing on bodily integrity and dignity of individual citizen in stop and frisk case); see also *Schmerber v. California*, 384 U.S. 757 (1966) (holding that use of blood sample for evidence in trial was not invasion of privacy, though dissent argued for similar *Terry* bodily integrity standard); see also Holtzman, *supra* note 110, at 1956–75 (arguing for broader and more modern interpretation of Fourth Amendment that encompasses bodily integrity and selective disclosure standards).

¹¹⁵ *Terry*, 392 U.S. at 16–17 (employing a standard that focused on the bodily invasion of an individual and not state reasonableness).

¹¹⁶ See *Schmerber*, 384 U.S. at 767 (holding that use of blood sample for evidence in trial was not invasion of privacy, though dissent argued for similar *Terry* bodily integrity standard).

¹¹⁷ See Holtzman, *supra* note 110, at 1956–75 (detailing historical interpretation of Fourth Amendment).

¹¹⁸ See *Griswold v. Connecticut*, 381 U.S. 479 (1965) (holding that a right to privacy does not exist under the Fourteenth Amendment literal language but a right to privacy can be found in Due Process Clause through penumbras of First, Third, Fourth, Fifth, and Ninth Amendments).

concept of personal liberty.”¹¹⁹ This right to liberty contrasts the Fourth Amendment right in that it does not actually protect individuals against bodily intrusion.¹²⁰ However, Justice Stevens dissented in *Cruzan*, stating that “[t]he sanctity, and individual privacy, of the human body is obviously fundamental to liberty.”¹²¹

2. Title VII

Title VII of the Civil Rights Act of 1964 protects individuals from discrimination on the basis of race, color, national origin, sex, and religion in the employment arena.¹²² Scholars have argued that Title IX of the Education Act of 1972 expands Title VII’s reach to athletic competitions when athletic federations are viewed as “employers.”¹²³ Assuming that the Olympic Games qualify as an employer to the athletes that compete, Title VII protects these same athletes from discrimination based on their sex.¹²⁴ The seminal case interpreting Title VII is *Ulane v. Eastern Airlines, Inc.*¹²⁵ That case established that sex discrimination simply means “unlawful . . . discriminat[ion] against women because they are women and against men because they are men.”¹²⁶ Over the years, sex discrimination has expanded to include gender identity discrimination and sexual orientation discrimination.¹²⁷

The most recently contested case dealing with the expansion of Title VII is *Hively v. Ivy Tech Community College*.¹²⁸ This case was instituted by a college professor at a community college in Indiana who had been denied tenure and promotions after years of working at the school.¹²⁹ The professor, a lesbian woman with a long-term partner, sued on the basis of Title VII discrimination and argued that the college denied her job security and promotions due to her sexual orientation.¹³⁰ Although

¹¹⁹ *Roe v. Wade*, 410 U.S. 113, 153 (1973) (pinpointing the exact language in the Fourteenth Amendment that allows for a right to privacy to exist in the penumbras of the Bill of Rights).

¹²⁰ See Holtzman, *supra* note 110, at 1956–75 (comparing and contrasting Fourth and Fourteenth Amendments’ interpretations of ‘right to privacy’).

¹²¹ *Cruzan v. Director, Missouri Dep’t of Health*, 497 U.S. 261, 342 (1990) (Stevens, J. dissenting) (arguing that majority should have used a broader interpretation of Fourteenth Amendment to protect against bodily invasions typically protected under Fourth Amendment).

¹²² Title VII, Civil Rights Act of 1964, 42 U.S.C. 2000e et. seq.; see also *Title VII of the Civil Rights Act of 1964*, U.S. EQUAL EMP’T OPPORTUNITY COMM’N, <https://www.eeoc.gov/laws/statutes/titlevii.cfm> (last visited Dec. 19, 2017) (reciting text from statute and giving broad overview of Title VII’s reach and import).

¹²³ See Kristi L. Schoepfer, *Title VII: An Alternative Remedy for Gender Inequity in Intercollegiate Athletics*, 11 MARQ. SPORTS L. REV. 107 (2000) (arguing that Title VII obviously reaches sports arena due to universities, colleges, and sports associations being employers).

¹²⁴ See generally *id.* (arguing “employers” should be read broadly to encompass sports organizations).

¹²⁵ See *Ulane v. Eastern Airlines, Inc.*, 742 F.2d 1081 (7th Cir. 1984) (dictating standard for sex discrimination interpretation).

¹²⁶ *Id.* at 1085 (holding standard of sex discrimination hinges on the discrimination occurring because of the discriminated individual’s sex).

¹²⁷ See generally *Hively*, 830 F.3d 698 (holding sex discrimination includes sexual orientation discrimination); see generally also *Macy*, 2012 WL 1435995 (holding sex discrimination includes gender identity discrimination).

¹²⁸ See generally *Hively*, 830 F.3d 698.

¹²⁹ See generally *id.* (arguing lack of promotion and tenure was discrimination).

¹³⁰ See generally *id.* (holding sexual orientation typically is not included in sex discrimination but outcome determinative test can allow for Title VII expansion where changing plaintiff’s sex would not have resulted in same discrimination).

sexual orientation is not included in the protections of Title VII – only on the basis of sex is protected – the plaintiff argued that had she been a man, no discrimination would have occurred.¹³¹ This argument has been used as a way to expand Title VII's protections to sexual orientation and employs what the court has entitled the outcome determinative test.¹³² The majority in the *Hively* opinion essentially stated that sex discrimination can occur any time the outcome would change if a person's sex was changed.¹³³ For example, when a lesbian professor is fired by a university, the court should hypothetically change the sex of the discriminated party (here, the professor).¹³⁴ If the firing occurred because the professor had a wife and was lesbian, changing the sex of the professor would create a heterosexual relationship and, therefore, no discrimination.¹³⁵ The dissent argued that this outcome determinative test should only change one variable (simply changing the sex of the professor without changing sexual orientation) rather than two variables (changing both the sex and sexual orientation) but the majority disagreed.¹³⁶

Both the traditional Title VII analysis and *Hively* and its progeny are applicable to the Olympics' regulations regarding transgender and hyperandrogenic athletes.¹³⁷ The traditional Title VII analysis is applicable to the Hyperandrogenism Regulations because the Olympics should be, if they are not already, considered an employer for the sake of discrimination lawsuits.¹³⁸ Further, although *Hively*'s expansion and reasoning may not be necessary in an analysis of the Hyperandrogenism Regulations, applying Title VII to issues of gender identity and DSDs is a slight expansion of sex discrimination.¹³⁹

III. CHAND V. AFI & IAAF

A. Background and Precipitating Events

Dutee Chand is an Indian sprinter who rose to fame in 2014 after “she won gold medals in the women’s 200 met[er] sprint and the women’s 4 x 400 met[er] spring

¹³¹ See generally *id.* (holding that outcome determinative test means swapping plaintiff's sex to male so that she would have been a man married to a woman, therefore resulting in no discrimination).

¹³² See generally *Hively*, 830 F.3d 698 (holding sexual orientation discrimination can be determined by court by using outcome determinative test in which discriminated individual's sex is changed and court analyzes whether outcome would have been different under these circumstances).

¹³³ See generally *id.* (employing outcome determinative test).

¹³⁴ See generally *id.* (holding lesbian professor who was fired and refused promotions would have been promoted and retained as employee if professor's spouse was a male, thereby failing outcome determinative test).

¹³⁵ See generally *id.* (employing outcome determinative test).

¹³⁶ See generally *id.* (holding outcome determinative test expands to sexual orientation specifically by changing only the sex of the plaintiff without affecting any other variable).

¹³⁷ For a full discussion regarding the legal impact of Title VII and *Hively* on the IOC's Hyperandrogenism Regulations and Transgender Regulations see *infra* notes 243–255 and accompanying text.

¹³⁸ Schoepfer, *supra* note 123 (arguing that Title VII obviously reaches sports arena due to universities, colleges, and sports associations being employers).

¹³⁹ For a discussion of Title VII as related to the author's proposal, see *infra* notes 269–273 and accompanying text.

relay at the Asian Junior Track and Field Championships [AJTFC].”¹⁴⁰ After her race, because she had previously been an unknown athlete, the IAAF investigated her for use of prohibited drugs.¹⁴¹ Chand was subject to “a months-long process of medical scrutiny [and] trips to foreign clinics for batteries of tests” all without knowledge regarding the purpose of the testing.¹⁴² The testing began in June 2014, just one month after her wins at the AJTFC, and continued until August 2014 when the Sports Authority of India (SAI) delivered to the AFI all of Chand’s medical records.¹⁴³ The SAI determined that “the test results sa[id] she [was] ineligible to compete in the women’s competition [and] that [her results] indicate[d] she ha[d] excess androgen” levels.¹⁴⁴ The AFI delivered a letter to Chand on August 31, 2014 informing her of her disqualification and the necessary steps for reinstatement.¹⁴⁵ The AFI, in their letter, did not address Chand’s right to an appeal or the basis of her suspension.¹⁴⁶ In response, Chand contacted the Secretary General of the AFI stating that the “high androgen levels produced by [her] body [are] natural” and that she did “not dope[] or cheat[].”¹⁴⁷ Chand added that in order for her to “follow the IAAF guidelines . . . attached, [she would] have to undergo medical intervention.”¹⁴⁸ The SAI, on the same day as Chand’s letter to the AFI, also wrote to the AFI reiterating its intended support of Chand and asking that the AFI support Chand’s appeal to the CAS.¹⁴⁹

¹⁴⁰ *Chand*, CAS 2014/A/3759 at 2 (outlining Chand’s athletic history and success and her quick rise to fame).

¹⁴¹ *See id.* at 3–4 (reciting facts necessary to appeal where Director of AFI asked to meet Chand shortly after 2014 gold medal wins to undergo “routine doping test”).

¹⁴² The Associated Press, *supra* note 48 (finding that suspicion-based testing often leaves athletes unaware of reason behind medical examination with examiners often stating that tests are being run for performance enhancing drugs).

¹⁴³ *See Chand*, CAS 2014/A/3759 at 6 (following delivery of medical records to AFI Chand was suspended from further athletic competition).

¹⁴⁴ *Id.* at 7 (“SAI had conducted a test on [the Athlete] for suspected Hyperandrogenism and the tests were found positive. We have recommended that she be excluded from participation in women’s events till her hyperandrogen level is brought down to permissible limits.”)

¹⁴⁵ *See id.* at 8 (allowing for reinstatement “in any Competition in athletics” as long as IAAF guidelines regarding testosterone levels are met).

¹⁴⁶ *See id.* at 7 (detailing AFI’s letters to SAI, suggesting SAI inform Chand of her disqualification and right to appeal rather than AFI informing athlete).

¹⁴⁷ *Id.* (furthering idea that athletes are told medical examinations are conducted for suspicion of doping, not DSDs).

¹⁴⁸ *Chand*, CAS 2014/A/3759 at 8 (excerpting Chand’s letter to Secretary General of AFI explaining that high levels of testosterone were not due to performance enhancing drugs) (“The high androgen level produced by my body is natural. I have not doped or cheated. If I follow the IAAF guidelines you have attached, I will have to undergo medical intervention in order to reduce my naturally-produced androgen level.”).

¹⁴⁹ *See id.* at 8–9 (“The SAI’s letter went on to note that the Athlete ‘has great potential of excelling in athletics internationally’ and explained that SAI had therefore included her into a training program[] . . . [and] requested the AFI to support the Athlete’s efforts to resume competing by allowing her to compete nationally and internationally without asking her to undergo any medical intervention.” (emphasis omitted)).

B. *Chand v. AFI & IAAF*

Chand appealed the AFI's and the IAAF's decision to suspend her from athletic competition in September 2014.¹⁵⁰ The appeal went to the CAS, where the Panel listed four issues that were to be decided:

- (a) Do the Hyperandrogenism Regulations discriminate impermissibly against certain female athletes on the basis of: (i) a natural physical characteristic; and/or (ii) sex?
- (b) Should the Hyperandrogenism Regulations be declared invalid on the basis that there is insufficient scientific evidence: (i) that endogenous testosterone improves athletic performance in female athletes; and/or (ii) that 10 nmol/L is the scientifically correct threshold at which female athletes are in the "male range" or endogenous testosterone and therefore enjoy the benefits of male levels of androgens?
- (c) Are the Hyperandrogenism Regulations disproportionate in the context of: (i) the fact they discriminate on the basis of a natural physical characteristic and/or sex; and/or (ii) the harm they cause to female athletes?
- (d) Are the Hyperandrogenism Regulations invalid because they are a form of unauthorised [sic] anti-doping sanction in violations of Articles 4.3.3, 10 and 23.2.2 of the World Anti-Doping Agency Code?¹⁵¹

The Panel further noted that the "substantial difference in athletic performance between elite male athletes and elite female athletes" required a division based on the sex binary.¹⁵² The Panel also conceded that "sex in humans is not simply binary" and that "[t]here is no single determinant of sex."¹⁵³ The Panel also stated its disapproval of "subject[ing] athletes to gender verification; or to mere examination of external genitalia; or to chromosomal testing in order to determine eligibility to compete as women or for the purpose of making a determination about their sex or gender status."¹⁵⁴ After stating the issues, the accepted factual background, and the concessions not at issue, the Panel detailed the relevant regulations.¹⁵⁵

¹⁵⁰ *See id.* at 25 ("On 26 September 2014, the Athlete filed her Statement of Appeal with the CAS Court Office . . . the Athlete nominated Professor Richard H. McLaren as an arbitrator and elected to proceed in English.").

¹⁵¹ *Id.* at 10 (excerpting issues listed by Panel).

¹⁵² *Id.* at 11 (stating that division of male and female is necessary to fair competition as perceived by IAAF, but Panel will not address any contentions arising from this fact).

¹⁵³ *Id.* at 11–12 ("There are people with differences in sexual development ('DSDs') who do not biologically fall neatly into traditional categories of women and men . . . Nevertheless, since there are separate categories of male and female competition, it is necessary for the IAAF to formulate a basis for the division . . . for the benefit of the broad class of female athletes.").

¹⁵⁴ *Chand*, CAS 2014/A/3759 at 12 (departing from long-held traditions and standards of gender verification and testing in previous years).

¹⁵⁵ *See id.* at 13–25 (including the Olympic Charter, IAAF Constitution, IAAF Regulations Governing Eligibility of Females with Hyperandrogenism to Compete in Women's Competition, IAAF Competition Rules 2014-2015, and The World Anti-Doping Code).

The Panel decision reviewed the evidence presented by both Chand and the IAAF and their respective expert witnesses.¹⁵⁶ Ultimately, the Panel was “unable to uphold the validity of the [Hyperandrogenism] Regulations. The Panel therefore suspend[ed] the Hyperandrogenism Regulations for a period of two years.”¹⁵⁷ Chand was reinstated on both a national and international competition level in this interim two-year period.¹⁵⁸ The Panel stated that “[s]pecifically, the IAAF ha[d] not provided sufficient scientific evidence about the quantitative relationship between enhanced testosterone levels and improved athletic performance in hyperandrogenic athletes.”¹⁵⁹ Lastly, the Panel, although it suspended the Hyperandrogenism Regulations for two years, allowed the IAAF to file new evidence within this period.¹⁶⁰ The Panel stated that if the IAAF chose not to or could not submit further evidence within the two year period, the Hyperandrogenism Regulations would be declared void.¹⁶¹

IV. IAAF’S NEW EVIDENCE

A. Contested Issues

The IAAF recently came forward with new studies relating to the Hyperandrogenism Rules that were contested in Chand’s appeal.¹⁶² The IAAF remains steadfast in its determination that the elite female athlete threshold for testosterone levels should be 10 nmol/L.¹⁶³ This number has been critiqued and criticized by

¹⁵⁶ *See id.* at 25–158 (detailing all evidence presented to CAS, including scientific studies, expert witnesses, and legal arguments).

¹⁵⁷ *Id.* at 158 (“For the reasons explained above, the Panel concludes that the IAAF has not discharged its onus of establishing that the Hyperandrogenism Regulations are necessary and proportionate to pursue the legitimate objective of organising [sic] competitive female athletics to ensure fairness in athletic competition.”).

¹⁵⁸ *See id.* at 160 (holding Hyperandrogenism Regulations were invalid, suspended for two years) (“The Hyperandrogenism Regulations are suspended for a period of no longer than two years from the date of this Interim Award. In the interim, Ms. Dutee Chand is permitted to compete in both national and international-level athletics events.”).

¹⁵⁹ *Id.* (failing to prove hyperandrogenic female athletes confer any significant athletic advantage from excess testosterone levels) (“In the absence of such evidence, the Panel is unable to conclude that hyperandrogenic female athletes may enjoy such a significant performance advantage that it is necessary to exclude them from competing in the female category.”).

¹⁶⁰ *See Chand*, CAS 2014/A/3759 at 160 (allowing IAAF to provide further evidence of testosterone as providing athletic advantage) (“In the event that the IAAF submits [further] evidence, the Panel will issue further directions enabling the Athlete to respond to that evidence and listing the matter for a further hearing for the Panel to consider whether that evidence is sufficient to establish the validity of the Regulations.”).

¹⁶¹ *See id.* (“In the event that the IAAF does not file any evidence within that two-year window (or if it notifies the CAS in writing that it does not intend to file such evidence) then the Hyperandrogenism Regulations shall be declared void.”).

¹⁶² *See* Stephane Bermon & Pierre-Yves Garnier, *Serum Androgen Levels and Their Relation to Performance in Track and Field: Mass Spectrometry Results from 2127 Observations in Male and Female Elite Athletes*, BR. J. SPORTS MED. (Jul. 12, 2017), <http://bjsm.bmj.com/content/early/2017/06/26/bjsports-2017-097792> (putting forth new study of Olympic-level athletes including their testosterone ranges).

¹⁶³ *See id.* at 6 (concluding that free testosterone in female athletes’ blood serum was unaffected by athletic event and, therefore, testosterone levels should be closely monitored for women with hyperandrogenism and higher levels of free testosterone).

several groups of researchers in the past.¹⁶⁴ The University of Rochester's medical library lists the range of "normal male" testosterone as 9.7 nmol/L and 38.1 nmol/L.¹⁶⁵ The same institution lists the range for females as 0.5 to 2.4 nmol/L.¹⁶⁶ The Sports Integrity Initiative compared several studies of testosterone levels, including those from the University of Rochester, the U.S. National Library on Medicine, BJU International, and the IAAF.¹⁶⁷ The lowest male level found was 6.46 nmol/L and the highest was 38.76 nmol/L.¹⁶⁸ These studies were all conducted with non-athlete males, as it is generally agreed that elite athletes have higher levels of testosterone.¹⁶⁹ While these studies focused mostly on male levels of testosterone, another study found that "16.5% of men had low testosterone levels, whereas 13.7% of women had high levels with complete overlap between the sexes."¹⁷⁰ These studies confirm that the cutoff the IAAF has chosen for testosterone levels remains contested.¹⁷¹ Further, one of the main issues Chand raised in her appeal to the CAS focused on the fact that only women athletes are tested. Therefore, men can fall below this testosterone limit while women cannot rise above it.¹⁷² If it is true that testosterone levels fall on a spectrum even across the sexes, then any cutoff used to separate the sexes seems arbitrary.¹⁷³

B. New IAAF Study

The study was accepted for publication in May 2017 and it studied androgen concentrations obtained from elite athletes during the 2011 and 2013 IAAF World

¹⁶⁴ See generally Andy Brown, *Testosterone is Not Exclusively a Male Hormone*, SPORTS INTEGRITY INITIATIVE (Apr. 20, 2016), <http://www.sportsintegrityinitiative.com/testosterone-is-not-exclusively-a-male-hormone/> (compiling data from several scientific sources regarding testosterone in normal men and women as well as normal ranges for male and women athletes).

¹⁶⁵ See *id.* (providing one example of scientific evidence that conflicts with IAAF's new study) ("The US University of Rochester's online medical library states that the normal 'male' range for testosterone is between 9.7nmol/l and 38.1nmol/l; and between 0.5nmol/l and 2.4nmol/l for 'females'" (citing John Hanrahan & Rita Sather, *Total Testosterone*, UNIV. OF ROCHESTER MED. CTR. (last updated 2017), https://www.urmc.rochester.edu/encyclopedia/content.aspx?ContentTypeID=167&ContentID=testosterone_total)).

¹⁶⁶ See *id.* (providing another scientific source differing from IAAF's new study) (citing Hanrahan & Sather, *supra* note 165).

¹⁶⁷ See *id.* (depicting graph with recent medical studies and the ranges of testosterone found in "normal males").

¹⁶⁸ See *id.* (depicting graph with "normal male" ranges of testosterone that reach higher *and* lower than those stated by the IAAF).

¹⁶⁹ See *id.* (stating on graph that it is generally understood that all elite athletes – male and female – have higher testosterone levels than non-athletes).

¹⁷⁰ ML Healy et. al., *Endocrine Profiles in 693 Elite Athletes in the Postcompetition Setting*, U.S. NAT'L LIBRARY OF MED. (Aug. 2014), <https://www.ncbi.nlm.nih.gov/pubmed/24593684> (providing evidence that athletes have fluctuating testosterone levels that vary for several reasons – including overtraining – resulting in a spectrum of testosterone levels instead of discrete categories).

¹⁷¹ See generally *id.* (providing evidence that spectrum of testosterone means any cut-off will be arbitrary).

¹⁷² See Chand, CAS 2014/A/3759 at 154 ("There is, however, an assumption involved in the Hyperandrogenism Regulations as a proportionate justification for discriminating between females.") (furthering idea that women are inherently less athletic than men).

¹⁷³ For further discussion on the testosterone spectrum and proposals moving forward, see *infra* notes 202–280 and accompanying text.

Championships.¹⁷⁴ The study details several different events in the sport of track and field and looks at both male and female competitors for most of the results.¹⁷⁵ However, blatantly missing from the study are the testosterone levels of female sprinters, the event in which Chand competes.¹⁷⁶ Instead, the study simply states that “male sprinters showed a higher [free testosterone] concentration than the other male athletes.”¹⁷⁷ The study also states that “[f]emale athletes with high [free testosterone] levels have a significant competitive advantage over those with low [free testosterone]” levels.¹⁷⁸ The study goes on to “conclude[] that despite these higher [free testosterone] levels in male sprinters, no pattern of advantage from elevated testosterone levels was found.”¹⁷⁹ Instead, the study seems to prove the point that free testosterone (at least the unabsorbed endogenous testosterone, the kind that Chand and other hyperandrogenic athletes possess excess levels of) creates “no pattern of advantage . . . in any of the . . . events.”¹⁸⁰

The study further fails to discuss the difference between endogenous and testosterone.¹⁸¹ Endogenous testosterone is naturally-occurring testosterone produced by the body.¹⁸² It is this free (unabsorbed) testosterone that leads to higher levels of the hormone in hyperandrogenic athletes.¹⁸³ Meanwhile, exogenous testosterone appears in an athlete’s blood serum through doping.¹⁸⁴ The study cited by the IAAF was co-sponsored with the World Anti-Doping Agency.¹⁸⁵ Because of this, it seems odd that the difference in testosterone is not addressed by the scientists.¹⁸⁶

¹⁷⁴ See generally Bermon & Garnier, *supra* note 162 (relaying data of testosterone ranges in athletes across several sports within track and field genre).

¹⁷⁵ See generally *id.* (examining most events within track and field except for those in which Chand competes).

¹⁷⁶ See generally *id.*; see also Andy Brown, *IAAF Study Shows Chand Case is Far From Over*, SPORTS INTEGRITY INITIATIVE (Jul. 5, 2017), <http://www.sportsintegrityinitiative.com/testosterone-is-not-exclusively-a-male-hormone/> (glaring lack of data for Chand’s events) (“Perhaps surprisingly given Chand’s chosen discipline, the study doesn’t discuss the impact of elevated testosterone on female sprinters, only male sprinters.”).

¹⁷⁷ Bermon & Garnier, *supra* note 162, at 2 (detailing free testosterone levels for males in different competition categories without focusing on absorbed levels of hormones).

¹⁷⁸ *Id.* at 1 (neglecting to differentiate between endogenous and exogenous testosterone in blood serum).

¹⁷⁹ Brown, *supra* note 164 (furthering question of whether free testosterone necessarily links to heightened athletic advantage).

¹⁸⁰ *Id.* (raising issue of endogenous versus exogenous testosterone, contending that free testosterone does not have inherent link to absorbed testosterone or athletic advantage); for a discussion of endogenous testosterone and its effects and relationship to hyperandrogenism and androgen insensitivities, see *supra* notes 99–105 and accompanying text.

¹⁸¹ See *Chand*, CAS 2014/A/3759 at 154 (discussing endogenous testosterone in women giving them a competitive advantage, where endogenous testosterone is naturally-occurring and exogenous testosterone is externally-induced).

¹⁸² See *id.* (explaining difference between endogenous and exogenous testosterone and other hormones).

¹⁸³ See *id.* (discussing difference between absorbed and unabsorbed testosterone in body)

¹⁸⁴ For the CAS’s contended issues, which address only endogenous testosterone, see *supra* note 151 and accompanying text.

¹⁸⁵ See *id.* (revealing sponsors of recent study, both of which proffered and supported Hyperandrogenism Regulations).

¹⁸⁶ See generally Bermon & Garnier, *supra* note 162 (failing to acknowledge difference in exogenous and endogenous testosterone in elite athletes).

C. IAAF's Return to CAS

After publishing its study that concluded female athletes with higher levels of free testosterone exhibit a competitive advantage over females with lower levels of free testosterone, the IAAF stated that it plans to return to the CAS.¹⁸⁷ The IAAF's study stated that "in certain events female athletes with higher testosterone levels can have a competitive advantage of between 1.8-4.5% over female athletes with lower testosterone levels."¹⁸⁸ With this new evidence in hand, the IAAF plans to return to the CAS in order to reinstate the Hyperandrogenism Regulations, which were suspended through Chand's first appeal.¹⁸⁹ If the IAAF is unable to provide enough scientific evidence to convince the CAS Panel that the Hyperandrogenism Regulations are necessary and fair, the Regulations will be void.¹⁹⁰ Until the new CAS decision is issued, Chand will be eligible to participate in all national and international competitions.¹⁹¹

Upon return to the CAS, it is assumed the IAAF's main argument will rely on the "competitive advantage" it found in relation to women with higher levels of free testosterone.¹⁹² However, in the initial appeal that Chand took the CAS, the Panel noted that a small competitive advantage would not in and of itself make the Hyperandrogenism Regulation fair.¹⁹³ The Panel specifically stated that the male versus female competitive advantage fell around 10-12%.¹⁹⁴ Meanwhile, the Panel also stated that a competitive advantage of merely 1-2% (numbers proposed by Chand's expert witness) would not be enough to confer validity on the Regulation.¹⁹⁵ The Panel

¹⁸⁷ See IAAF Athletics, *Levelling the Playing Field in Female Sport: New Research Published in the British Journal of Sports Medicine*, IAAF (Jul. 3, 2017), <https://www.iaaf.org/news/press-release/hyperandrogenism-research> ("The article published today . . . is part of the evidence that the IAAF is preparing for its return to CAS.").

¹⁸⁸ *Id.* (repeating results from Bermon & Garnier, *supra* note 162, at 6); see also PTI, *Dutee Chand's 'Gender Case' to be Re-Opened, IAAF to Return to CAS*, HINDUSTAN TIMES (Jul. 4, 2017), <http://www.hindustantimes.com/other-sports/dutee-chand-s-gender-case-to-be-re-opened-iaaf-to-return-to-cas/story-vqQ77jYyIECGAjKlksiVTI.html> (repeating results from recent IAAF study); see also Brown, *supra* note 176 (repeating results from recent IAAF study).

¹⁸⁹ See generally IAAF Athletics, *supra* note 187.

¹⁹⁰ See *Chand*, CAS 2014/A/3759 at 160 ("In the event that the IAAF does not file any evidence within that two-year window (or if it notifies the CAS in writing that it does not intend to file such evidence) then the Hyperandrogenism Regulations shall be declared void.") (detailing two-year bar placed on IAAF to bring forward new evidence).

¹⁹¹ See PTI, *supra* note 188 ("The IAAF, however, made it clear that the Hyperandrogenism Regulations remain suspended pending the resolution of the CAS proceedings and its decision to return to the top court of world sports will have no impact on the IAAF World Championships, to be held in London in August.") (explaining continued suspension of Hyperandrogenism Regulations until all CAS decisions have been rendered).

¹⁹² See *supra* notes 187–191 and accompanying text.

¹⁹³ See *Chand*, CAS 2014/A/3759 at 155 (showcasing Panel's reluctance to concede that excess testosterone causes athletic advantage) ("The evidence does not, for example, establish an advantage of the order of 12% rather than, say 1% to 3%.")

¹⁹⁴ See *id.* at 154 ("The Panel accepts the evidence that male athletes have a competitive advantage over female athletes of the order of 10-12%.") (accepting that significant advantage could justify gender categorization for competition).

¹⁹⁵ See *id.* at 155 ("Once the degree of competitive advantage is established, the IAAF would then need to consider, if the degree of advantage were well below 12%, whether that justified excluding women

remained silent on what competitive advantage *would* make the Regulation valid, but the Panel reiterated that it required substantial difference.¹⁹⁶ The lack of a substantial competitive advantage found by the IAAF's study as well as the fact that endogenous testosterone is naturally-occurring makes it a likely possibility that the Hyperandrogenism Regulations will become void after the next Panel decision.¹⁹⁷ This would raise a new difficulty in the IOC's ability to classify athletes in discrete categories.¹⁹⁸ The IOC has gone through various ways to classify athletes based on sex, starting with nude parades, then chromosomal testing, and now hormone testing.¹⁹⁹ If the CAS does decide in favor of Chand and other hyperandrogenic athletes, the IOC would have to determine a new method for classifying the sexes.²⁰⁰ The next section details several testing methods that have been raised as well as a new proposal.²⁰¹

V. PROPOSALS FOR IOC

A. Gender Identity

Some scholars have suggested that the IOC use athletes' gender identities as the separation method in competition.²⁰² This is a progressive view, which suggests that athleticism should not be dependent upon the sex assigned at one's birth.²⁰³ Further, it allows athletes to be autonomous in their gender identity which is validated when an international athletics body recognizes the intricacies of gender as a concept.²⁰⁴ Lastly, some have contended that because the IOC disbanded the sex reassignment requirement for transgender athletes that some athletes would abuse this method of determining competition categories by changing their legal gender without

with that advantage from the female category.") (giving reasons why separate male and female categories are justified based on athletic advantage).

¹⁹⁶ See *id.* (denying IAAF's arguments based on lack of evidence and correlation between increased testosterone and competitive advantage) ("However, the evidence does not go so far as to equate, or correlate, the levels of testosterone in females with a percentage increase in competitive advantage.").

¹⁹⁷ See *id.* at 155 (requiring a higher level of advantage in order to justify Hyperandrogenism Regulations) ("The evidence does not, for example, establish an advantage of the order of 12% rather than, say 1% to 3%.").

¹⁹⁸ See *infra* notes 199–280 and accompanying text.

¹⁹⁹ See *supra* notes 74–109 and accompanying text.

²⁰⁰ See *infra* notes 201–280 and accompanying text.

²⁰¹ See *infra* notes 202–280 and accompanying text.

²⁰² See INT'L OLYMPIC COMM., *supra* note 44 ("To require surgical anatomical changes as a pre-condition to participation is not necessary to preserve fair competition and may be consistent with developing legislation and notions of human rights.") (supporting idea that athletes need not undergo sex reassignment surgery in order to compete as one's gender identity even if it conflicts with sex assigned at birth).

²⁰³ See *generally id.* ("The overriding sporting objective is and remains the guarantee of fair competition. Restrictions on participation are appropriate to the extent that they are necessary and proportionate to the achievement of that objective.") (explaining why restrictions and testosterone testing must exist even though sex reassignment surgery is no longer required).

²⁰⁴ For a discussion on gender and gender identity as concepts, see *supra* notes 21–31 and accompanying text.

sex reassignment surgery.²⁰⁵ This contention is highly speculative and lacks understanding of gender identity.²⁰⁶

This method presents several legal hurdles for the international and the U.S. community of athletes.²⁰⁷ First, some countries either do not allow gender reassignment or make the process difficult.²⁰⁸ Second, even if the IOC does not require sex reassignment surgery, all of the states in the U.S. require sex reassignment surgery before gender reassignment on identification cards.²⁰⁹ This presents an issue for the IOC because an athlete wanting to compete under a different sex must first be legally recognized in order to be classified for Olympic competition.²¹⁰ In order to overcome the present legal issues both in the U.S. and internationally, the IOC would need to revise its current competition procedure.²¹¹ The IOC would need to disregard all gender identification requirements currently in place and allow athletes to simply state their gender.²¹² Issues could arise under this honor policy and its mere implementation would be costly, progressive, and time-consuming.²¹³

B. Other Hormones

Chand and her expert witnesses suggested in the CAS Panel's interim decision that testosterone was not a determinative factor when considering competitive advantage in athletes.²¹⁴ Testosterone, they suggested, is not determinative because

²⁰⁵ See Buzuvis, *supra* note 1, at 34–36 (detailing Stockholm Consensus adopted by IOC in 2004 requiring transgender athletes to undergo sex reassignment surgery, legal recognition as opposite gender, and sufficient hormone therapy before competition) (“These unnecessary restrictions may contribute to the fact that despite the adoption of the Stockholm Consensus by many international sport federations . . . no transgender athletes have competed in the Olympics pursuant to this policy.”); see also INT’L OLYMPIC COMM., *supra* note 44 (disbanding previous Stockholm Consensus in favor of new regulations governing hyperandrogenic and transgender athletes).

²⁰⁶ See Buzuvis, *supra* note 1, at 34–36 (discussing criticisms of Stockholm Consensus including disproportionate implications on transgender women, imposition of Consensus as ‘sincerity test’ to ‘gender fraud’); for a discussion on gender and gender identity as concepts, see *supra* notes 21–31 and accompanying text.

²⁰⁷ For a discussion of international laws regarding gender identity and the United States’ approach to the same, see *supra* notes 53–72 and accompanying text.

²⁰⁸ For a discussion of international laws regarding gender identity and the United States’ approach to the same, see *supra* notes 53–72 and accompanying text.

²⁰⁹ See *id.* (describing laws nationally and internationally with a majority of countries and states requiring sex reassignment surgery before gender reassignment, with the very recent exception of California).

²¹⁰ See INT’L OLYMPIC COMM., *supra* note 44 (providing as one requirement for competition that an athlete’s gender identity be legally recognized).

²¹¹ See *id.* (listing requirements for athletes that want to compete under different gender identity than current identification); for a discussion of international laws regarding gender identity and the United States’ approach to the same, see *supra* notes 53–72 and accompanying text (providing countries and states that would pose an issue to IOC changing its policy).

²¹² See INT’L OLYMPIC COMM., *supra* note 44 (requiring legally recognized gender as bar to competition, IOC would need to revise this regulation); see also Buzuvis, *supra* note 1, at 49–54 (presenting issues regarding uniform gender identity rule and IOC’s unwillingness to accept athlete’s gender identity as anything other than plot to compete in ‘easier’ competition category).

²¹³ See Buzuvis, *supra* note 1, at 34–36 (detailing IOC’s acceptance of Stockholm Consensus and required sex reassignment surgery in previous years as ‘sincerity test’ to weed out gender fraudsters).

²¹⁴ See *Chand*, CAS 2014/A/3759 at 155 (rejecting Chand’s position and determining that testosterone is, in fact, dispositive predictor of competitive advantage).

not all testosterone that naturally occurs in a person's body is necessarily absorbed.²¹⁵ Hyperandrogenic and androgen sensitive individuals typically overproduce testosterone without absorbing it and feeling its effects.²¹⁶ Other hormones, such as androgens, are more determinative when considering athletic advantage.²¹⁷ Androgens, Chand contended, are more proportional to absorbed testosterone levels and, therefore, do not correspond to free, unabsorbed testosterone.²¹⁸ While this suggestion is not scientifically proven as of yet, it could be a way for the IOC to maintain suspicion-based hormone testing with a hormone that actually confers a competitive advantage.²¹⁹ Further, it should be noted that even testosterone's effects on an athlete's athletic advantage has not been proven.²²⁰

While this proposal moves to be a conciliatory step in the right direction, it would not eliminate suspicion-based testing or invasive testing procedures.²²¹ Acceptance of this proposal would concede that hormone testing is an objective measure of athletic performance and advantage.²²² Some scholars remain steadfast in their belief that hormones vary vastly among men and women and no hormone test will properly identify an athlete's athletic advantage.²²³ Instead, body mass, muscle mass, oxygen usage and other indicators of athletic advantages should be the measure employed by the IOC.²²⁴

C. Legal Issues Surrounding First Two Proposals

The first two proposals pose legal issues that the CAS refused to consider.²²⁵ These issues included invasion of privacy through invasive testing methods,

²¹⁵ See *id.* (“The Panel has accepted testosterone is the best indicator of performance difference between male and female athletes.”).

²¹⁶ See *supra* notes 181–186 and accompanying text.

²¹⁷ See Dr. James Simon, *Androgen*, HEALTHY WOMEN (last updated 2017), <http://www.healthywomen.org/condition/androgen> (“[R]esults from blood tests are often misleading and may not be conclusive because there is no agreement on just what constitutes ‘normal’ androgen levels in women . . . Further, many standard laboratory tests, optimized for measuring testosterone in men, may not be sensitive enough to accurately measure women’s levels.”).

²¹⁸ See generally Mayo Clinic, *Testosterone, Total and Free, Serum*, MAYO CLINIC MED. LAB. (last updated 2017), <https://www.mayomedicallaboratories.com/test-catalog/Clinical+and+Interpretive/8508> (discussing free testosterone and its relation to absorbed testosterone levels, as well as high levels of testosterone when sex hormone binding serum concentration remains constant).

²¹⁹ See generally *id.* (allowing for continuation of suspicion-based testing while negating testosterone as accepted hormone).

²²⁰ See *Chand*, CAS 2014/A/3759 at 160 (failing to prove hyperandrogenic female athletes confer any significant athletic advantage from excess testosterone levels) (“In the absence of such evidence, the Panel is unable to conclude that hyperandrogenic female athletes may enjoy such a significant performance advantage that it is necessary to exclude them from competing in the female category.”).

²²¹ See Buzuvis, *supra* note 1, at 42–43 (discussing CAS’s, IOC’s, IAAF’s practice of suspicion-based testing).

²²² See generally Berman & Garnier, *supra* note 162 (relying on testosterone as hormonal marker of competitive advantage in Olympic-level athletes).

²²³ For a full discussion regarding the conflicting scientific sources studying testosterone levels in men and women see *supra* notes 162–201 and accompanying text.

²²⁴ See Genel, et al, *supra* note 52 (reviewing other types of congenital mutations that can create competitive advantage).

²²⁵ For a discussion of the legal barriers posed by the first proposal see *supra* notes 207–213 and accompanying text.

disproportionate effect on women by use of suspicion-based testing, and discriminatory effects on women due to transgender policies only affecting transgender women and hyperandrogenic rules only affecting women with DSDs.²²⁶

1. Invasion of Privacy

Some scholars have argued that the Fourth Amendment was historically intended to protect citizens from invasion of bodily contact.²²⁷ Although the doctrine has been interpreted as reasonableness of state power rather than constitutional liberties, one scholar has argued for a change in Fourth Amendment interpretation.²²⁸ Under *Terry* and *Schmerber*, which both focus on dignity and bodily integrity, the invasive testing of the IOC would violate constitutional protections in the U.S.²²⁹ Under the Fourteenth Amendment, the right to privacy is less about actual bodily invasion and more about a right against state intervention.²³⁰ The right to privacy initially founded under *Griswold* and *Roe* would likely not protect athletes from invasive testing.²³¹ However, Stevens' dissent in *Cruzan* focused on “[t]he sanctity, and individual privacy, of the human body” which “is obviously fundamental to liberty.”²³² Stevens' interpretation of the Fourteenth Amendment would protect athletes from the invasive testing method used by the IOC and endorsed by the CAS.²³³ Stevens' dissent protects the dignity of each human body and merges the two lines of interpretation regarding “invasion of privacy,” which seems to be the Constitution's intent.²³⁴

²²⁶ See Buzuvis, *supra* note 1, at 40–44 (discussing CAS's endorsement of IOC's suspicion-based testing and testosterone-based categories); see generally *Chand*, CAS 2014/A/3759 (holding by CAS Panel allowing for hormone testing with testosterone as indicator of athletic advantage and suspicion-based testing).

²²⁷ See generally Holtzman, *supra* note 110 (arguing for expansion of Fourth Amendment protection); for a full discussion of the history of the Fourth Amendment and Holtzman's argument for expansion see *supra* notes 110–117 and accompanying text.

²²⁸ See generally Holtzman, *supra* note 110 (arguing for expansion of Fourth Amendment protection); for a full discussion of the history of the Fourth Amendment and Holtzman's argument for expansion see *supra* notes 110–117 and accompanying text.

²²⁹ See generally *Terry*, 392 U.S. 1 (holding stop and frisk violated Fourth Amendment rights of individual due to invasion of person's bodily integrity and dignity); see generally also *Schmerber*, 384 U.S. 757 (dissenting view arguing for invasion of privacy due to ‘unreasonable’ blood sample used as evidence); for a full discussion of *Terry* and *Schmerber* see *supra* notes 110–117 and accompanying text.

²³⁰ See Holtzman, *supra* note 110, at 1956–75 (comparing and contrasting Fourth and Fourteenth Amendments' interpretations of ‘right to privacy’); see *supra* notes 118–121 and accompanying text.

²³¹ See generally *Griswold*, 381 U.S. 479 (holding right to privacy only exists in penumbras of Bill of Rights and is a concept or personal liberty); see generally *Roe*, 410 U.S. 113 (following *Griswold*'s interpretation of Fourteenth Amendment as only protecting individual personal liberty).

²³² *Cruzan*, 497 U.S. at 342 (Stevens, J. dissenting) (implored majority to expand Fourteenth Amendment to include invasions of human body covered by Fourth Amendment right to privacy).

²³³ See generally *id.* (expanding Fourteenth Amendment to protect against bodily invasion as Fourth Amendment would make Due Process Clause more than a conduit for notions of personal liberty).

²³⁴ See generally *id.* (merging Fourteenth Amendment and Fourth Amendment would make Due Process Clause more protective for citizens).

2. Suspicion-based Testing

The law is silent on suspicion-based testing and the CAS has endorsed the practice.²³⁵ However, the IOC stated that the practice of mass testing was found to be a humiliating invasion of privacy.²³⁶ The IOC now has a practice of hand-selecting women that “express male attributes” and then ‘out’ these women (typically exhibiting DSDs) to the rest of the athlete community.²³⁷ This practice seems exponentially more humiliating than across-the-board testing of all women or all athletes.²³⁸ Lastly, during the actual testing process, athletes are kept in the dark about why the tests are being administered.²³⁹ In Chand’s case, she was unaware of her DSD and was not told by the medical professionals why she was being tested.²⁴⁰ It was only after the SAI delivered Chand’s records to the AFI that she, and the entire Indian athletic community, was informed of her diagnosis as hyperandrogenic.²⁴¹ While there are not any laws prohibiting this suspicion-based testing, the practices employed by the IAAF and the IOC remain questionable.²⁴²

3. Discriminatory Effects

Both the transgender regulations and the hyperandrogenism regulations proffered by the IAAF and adopted by the IOC only refer to women.²⁴³ The transgender regulations only place restrictions on transgender women (an individual who has undergone male-to-female sex reassignment surgery) because of the competitive advantage she may have.²⁴⁴ A similar rationale exists for only placing

²³⁵ See generally *Chand*, CAS 2014/A/3759 (accepting and endorsing IOC’s use of suspicion-based testing).

²³⁶ See Stacy Larson, *Intersexuality and Gender Verification Tests: The Need to Assure Human Rights and Privacy*, 23 PACE INT’L L. REV. 215, 231–33 (2011) (discussing IOC’s progression through different gender verification methods and stating that IOC abandoned most due to degrading nature).

²³⁷ See *id.* (clarifying that women modernly tested for gender verification must be recommended by medical director of international sporting event and upon complaint due to suspicion); see generally *Chand*, CAS 2014/A/3759 (explaining Chand’s experience during testing phase and her ‘outing’ to the international sporting community as hyperandrogenic).

²³⁸ See generally Larson, *supra* note 236 (proposing appropriate testing methods and detailing contested legal issues surrounding testing based on international law, human rights laws and groups, and IOC’s historical battle with gender verification).

²³⁹ See generally *Chand*, CAS 2014/A/3759 (explaining Chand’s experience during testing phase and her ‘outing’ to the international sporting community as hyperandrogenic).

²⁴⁰ See generally *id.* (ignoring issue that athlete may not be aware why testing is occurring, as local sports federations usually blame ‘doping’ suspicions).

²⁴¹ See *id.* at 7 (excerpting SAI’s letter to AFI regarding Chand’s heightened androgen levels); see *supra* notes 144–149 and accompanying text.

²⁴² See generally Larson, *supra* note 236 (proposing appropriate testing methods and detailing contested legal issues surrounding testing based on international law, human rights laws and groups, and IOC’s historical battle with gender verification).

²⁴³ See INT’L OLYMPIC COMM., *supra* note 44 (stating that IOC Consensus Meeting recommends IOC suspend IAAF’s Hyperandrogenism Regulations until resolution of Chand’s appeal or introduction of new evidence by IAAF and excerpting IAAF’s Hyperandrogenism Regulations and providing excerpt of Transgender Guidelines); for an excerpt of the Transgender Guidelines proffered by the IOC see *supra* note 96 and accompanying text.

²⁴⁴ See INT’L OLYMPIC COMM., *supra* note 44 (providing explicitly that men are perceived to have inherent athletic advantage so only male-to-female athletes are subject to regulations).

restrictions on women with DSDs.²⁴⁵ A woman that over-produces testosterone and other androgens is perceived to be an athletic threat to the other competitors.²⁴⁶ However, both the transgender and the hyperandrogenism regulations would both violate even the narrow interpretation of Title VII under *Ulane*.²⁴⁷ Sex discrimination under *Ulane* is the “unlawful . . . discriminat[ion] against women because they are women.”²⁴⁸ Here, both regulations employed by the IOC are specifically targeted at women *because* they are women that may have a competitive advantage.²⁴⁹ Men are totally disregarded from both regulations.²⁵⁰

These regulations seem like by-the-book sex discrimination under Title VII.²⁵¹ However, *Hively* and its progeny, including *Macy*, have expanded sex discrimination over the years.²⁵² *Macy* expanded sex discrimination to include gender identity discrimination and *Hively* expanded it to include sexual orientation discrimination.²⁵³ Using the outcome determinative test of *Hively*, female athletes with higher testosterone levels would be reexamined as males with higher testosterone levels and would be able to compete in the Olympics.²⁵⁴ The expanded scope of Title VII, therefore, would result in a violation of this law.²⁵⁵

²⁴⁵ See generally *Chand*, CAS 2014/A/3759 (holding male athletes have a competitive advantage over female athletes and that female athletes with hyperandrogenism confer same male advantage due to heightened testosterone levels).

²⁴⁶ See generally *id.* (holding that testosterone is indicator of athletic performance and advantage so women with DSDs are inherently more competitive than other women).

²⁴⁷ See *Ulane*, 742 F.2d at 1085 (“[I]t is unlawful to discriminate against women because they are women and against men because they are men.”) (holding standard of sex discrimination is based on whether discrimination occurred simply because of the sex of the individual).

²⁴⁸ *Id.* (setting sex discrimination standard narrowly so as to only apply to situations where discrimination occurs explicitly due to individual’s sex).

²⁴⁹ See INT’L OLYMPIC COMM., *supra* note 44 (stating explicitly that women with DSDs have athletic advantage over women without DSDs and that men have competitive advantage over women so only male-to-female athletes must be regulated); see generally *Chand*, CAS 2014/A/3759 (holding male athletes have a competitive advantage over female athletes and that female athletes with hyperandrogenism confer same male advantage due to heightened testosterone levels); for an excerpt of the Transgender Guidelines proffered by the IOC see *supra* note 96 and accompanying text.

²⁵⁰ See INT’L OLYMPIC COMM., *supra* note 44 (excluding men from testosterone checks and limitations and excluding female-to-male athletes from regulations); see generally *Chand*, CAS 2014/A/3759 (disregarding discriminatory nature of both regulations); for an excerpt of the Transgender Guidelines proffered by the IOC see *supra* note 96 and accompanying text.

²⁵¹ See *Ulane*, 742 F.2d at 1085 (“[I]t is unlawful to discriminate against women because they are women and against men because they are men.”).

²⁵² See generally *Hively*, 830 F.3d 698 (expanding sex discrimination using outcome determinative test and including sexual orientation discrimination as sex discrimination).

²⁵³ See generally *id.* (holding sex discrimination includes sexual orientation discrimination); see generally also *Macy*, 2012 WL 1435995 (holding sex discrimination includes gender identity discrimination).

²⁵⁴ See generally *Hively*, 830 F.3d 698 (using outcome determinative test).

²⁵⁵ See generally *id.* (using outcome determinative test); see generally also *Macy*, 2012 WL 1435995 (holding sex discrimination includes gender identity discrimination).

D. Hormone Ranges

This proposal maintains the hormone testing some athletes are currently subject to while also incorporating elements from the first two proposals.²⁵⁶ The CAS Panel's reasoning for suspending the Hyperandrogenism Regulations focused partially on the fact that no scientific evidence thus far proved testosterone a predictive factor, but also on the discriminatory nature of the Hyperandrogenism Regulations.²⁵⁷ The Regulations targeted women and only forced some women to undergo hormone testing.²⁵⁸ Further, the testing was suspicion based, which means not every woman or man undergoes testing indiscriminately.²⁵⁹ This proposal suggests indiscriminate hormone testing among athletes with a division based on specific ranges of hormone levels.²⁶⁰ This method of testing athletes across the board would eliminate some of the disproportionate and discriminatory effects currently imposed on women athletes.²⁶¹

First, this proposal would impose mass testing on all athletes.²⁶² While this still does pose a constitutional and invasion of privacy issue, the testing procedures would be applied to all athletes.²⁶³ Any kind of testing would pose a threat to invasion of privacy; however, the testing would be disclosed, applicable to all athletes, and simply a form of classification.²⁶⁴ The testing would not be done in order to disqualify athletes or under the guise of doping as it is currently.²⁶⁵ Instead, the testing would be completed in order to place athletes in a category commensurate with one's athletic ability and advantage.²⁶⁶ Further, the testing would be comparable to that done in wrestling with weight classes, which has not raised constitutional issues.²⁶⁷ The entire

²⁵⁶ See Buzuvis, *supra* note 1, at 42–43 (discussing CAS's, IOC's, IAAF's practice of suspicion-based testing); for a full discussion on the other two proposals see *supra* notes 202–219 and accompanying text.

²⁵⁷ See *Chand*, CAS 2014/A/3759 at 154–56 (listing Panel's conclusions).

²⁵⁸ See *id.* (“There is, however, an assumption involved in the Hyperandrogenism Regulations as a proportionate justification for discriminating between females.”).

²⁵⁹ See *id.* at 3–4 (discussing facts surrounding Chand's initial medical testing, which arose when AFI thought Chand was doping).

²⁶⁰ See *infra* notes 275–280 and accompanying text.

²⁶¹ See generally *Chand*, CAS 2014/A/3759 (describing Chand's contentions regarding IAAF's Hyperandrogenism Regulations including discriminatory impact on women athletes).

²⁶² See generally Larson, *supra* note 236 (describing IOC's intention to move away from mass testing methods).

²⁶³ See generally *Cruzan*, 497 U.S. 261 (holding blood sample not invasion of privacy because use of sample was not unreasonable action by state); for a full discussion on the history and applicability of an individual's right of privacy see *supra* notes 110–121 and accompanying text.

²⁶⁴ See generally *Chand*, CAS 2014/A/3759 (detailing Chand's testing timeline, including her lack of knowledge as to why testing was being administered).

²⁶⁵ See INT'L OLYMPIC COMM., *supra* note 44 (disqualifying from competition female-to-male athletes and hyperandrogenic athletes that do not meet testosterone requirements).

²⁶⁶ For a discussion of the classes athletes would be separated into under this policy see *infra* notes 275–291 and accompanying text.

²⁶⁷ See PLAA *Wrestling Weight Control Program Guidelines*,

https://www.crsd.org/cms/lib5/PA01000188/Centricity/Domain/987/Wrestling_Weight_Program.pdf (last visited Oct. 22, 2017) (discussing full guidelines regarding wrestling weight classes, nutrition, measurement process); see also NCAA, *Wrestling Rules of the Game*, NCAA

<http://www.ncaa.org/championships/playing-rules/wrestling-rules-game> (last visited Oct. 22, 2017) (detailing guidelines, penalties, and rules book for NCAA wrestling).

purpose behind the Hyperandrogenism Regulations and Transgender Guidelines was to instill fairness in the Olympic Games.²⁶⁸ Under this proposal, all athletes would be competing under the fairest rules possible.²⁶⁹

Second, this proposal would target all athletes competing in the Olympic Games.²⁷⁰ Therefore, both males and females (including athletes that are intersex, transgender, etc.) would be tested regardless of their gender identities, sexual orientations, or sex.²⁷¹ Under a Title VII analysis, this would completely negate any sex discrimination issues raised by the current Hyperandrogenism Regulations and Transgender Guidelines.²⁷² Additionally, as stated above, the purpose of this testing would be to place athletes in classes based on athletic advantage.²⁷³ Assuming androgens do confer athletic advantage on individuals, this would create the most fair athletic competition to date.²⁷⁴

This proposal of indiscriminate hormone testing works to incorporate the second proposal mentioned earlier, androgen testing.²⁷⁵ Chand and her expert witnesses suggested that androgens should be the hormone that is tested when determining competitive advantage, as discussed in the previous section.²⁷⁶ If androgens are the hormone that scientifically prove competitive advantage, then separating athletes based on their androgen levels should be the most equal and equitable way to divide competition categories (i.e., 1-9.99 nmol/L, 10-19.99 nmol/L, etc.).²⁷⁷ This proposal would render moot any issues that could arise under the first proposal in this section (gender identity) because athletes would no longer be separated by gender, but instead, androgen levels.²⁷⁸ In fact, the legal issues associated with gender identity would be moot for the same reason.²⁷⁹ Further, no discrimination between men and women would occur under this proposal because all athletes would be tested for their androgen levels and, thus, separated.²⁸⁰

²⁶⁸ See INT'L OLYMPIC COMM., *supra* note 44 (recommending that regulations be suspended due to CAS decision but remaining steadfast in contention that regulations maintained fairness); see generally also Chand, CAS 2014/A/3759 (holding regulations not inherently unfair as long as testosterone is determinative hormone).

²⁶⁹ See generally Larson, *supra* note 236 (describing human rights organizations' attempt to change IOC policy to ensure more fair competition).

²⁷⁰ See *supra* note 262 and accompanying text.

²⁷¹ See *supra* note 262 and accompanying text.

²⁷² See generally *Ulane*, 742 F.2d 1081 (holding there must be discrimination and such discrimination must be on account of one's sex).

²⁷³ See generally Larson, *supra* note 236 (describing human rights organizations' attempt to change IOC policy to ensure more fair competition).

²⁷⁴ For a discussion of the classes athletes would be separated into under this policy see *infra* notes 275–291 and accompanying text.

²⁷⁵ See *supra* notes 214–219 and accompanying text for a discussion on hormone testing using androgens as the measuring mechanism rather than testosterone.

²⁷⁶ See *id.*

²⁷⁷ See *id.*

²⁷⁸ See *supra* notes 202–208 and accompanying text.

²⁷⁹ For a discussion of legal issues associated with individuals changing his or her gender identity on identification and other documents see *supra* notes 53–72 and accompanying text.

²⁸⁰ See *supra* notes 259–260 and accompanying text.

To provide an easily cognizable example, wrestling categories shall be employed.²⁸¹ Wrestling, although typically a male sport, separates competing athletes based on body weight.²⁸² Athletes are required to weigh-in on the day of their competition to confirm their current weight.²⁸³ Based on that number, the athletes are separated into competition categories.²⁸⁴ While weight may not be an indicator of athletic advantage in all sports, it provides wrestlers with a comparable and compatible competitor.²⁸⁵ Levels of androgens (assuming androgens more closely resemble athletic advantage over testosterone) would work in primarily the same fashion.²⁸⁶ Chand and her expert witnesses proposed that hyperandrogenic women athletes had a 1-3% competitive advantage over women without DSDs and that assumed approximately a 10 nmol/L gap.²⁸⁷ If each 10 nmol/L gap results in a similar competitive advantage, there would be a significant gap between women without DSDs and typical males (around 20 nmol/L).²⁸⁸ This proposal combats that advantage by striking gender categories altogether and basing athletic competition ranges solely on athletic advantage.²⁸⁹ Further, this proposal has utilized androgen testing as the means for category separation.²⁹⁰ However, under the IAAF's, IOC's, CAS's and Chand's reasoning, this proposal could simply be applied to testosterone and implemented immediately.²⁹¹

²⁸¹ See *PLAA Wrestling Weight Control Program Guidelines*, *supra* note 267 (discussing full guidelines regarding wrestling weight classes, nutrition, measurement process); see also NCAA, *supra* note 267 (detailing guidelines, penalties, and rules book for NCAA wrestling).

²⁸² See *PLAA Wrestling Weight Control Program Guidelines*, *supra* note 267 (discussing full guidelines regarding wrestling weight classes, nutrition, measurement process); see also NCAA, *supra* note 267 (detailing guidelines, penalties, and rules book for NCAA wrestling).

²⁸³ See Rule 9 § 2 Weigh-Ins, *NCAA Wrestling 2017-18 and 2018-19 Rules and Interpretations*, <http://www.ncaapublications.com/productdownloads/WR19.pdf> (last visited Oct. 22, 2017) (detailing procedure for day-of weigh-in).

²⁸⁴ See *id.* (detailing procedure for day-of weigh-in).

²⁸⁵ See generally *id.* (providing rationale for weight management and weight classification); see also *PLAA Wrestling Weight Control Program Guidelines*, *supra* note 267 (providing rationale for weight management and weight classification); see also NCAA, *supra* note 267 (providing rationale for weight management and weight classification).

²⁸⁶ For another proposal suggesting androgens be the hormone determining competition categories see *supra* notes 214–226 and accompanying text.

²⁸⁷ See *Chand*, CAS 2014/A/3759 at 155 (showcasing Panel's reluctance to concede that excess testosterone causes athletic advantage) ("The evidence does not, for example, establish an advantage of the order of 12% rather than, say 1% to 3%.").

²⁸⁸ For a full discussion regarding competitive advantage between men and women as well as between hyperandrogenic women and women without DSDs see *supra* notes 187–201 and accompanying text.

²⁸⁹ See generally *Chand*, CAS 2014/A/3759 (describing IOC's and IAAF's emphasis on athletic advantage as justification for hormone testing).

²⁹⁰ For another proposal suggesting androgens be the hormone determining competition categories see *supra* notes 214–226 and accompanying text.

²⁹¹ See generally *Chand*, CAS 2014/A/3759 (describing Chand's contentions regarding IAAF's Hyperandrogenism Regulations including discriminatory impact on women athletes, IAAF's steadfast reliance on testosterone as predictor of competitive advantage, and CAS's partial acceptance of IAAF's stance).

VI. CONCLUSION

This article provided insight into the recent predicament facing the Olympics: gender determination. The Olympics have a long history of attempting to equally and legally apply a gender standard across the board.²⁹² Most recently, the IOC thought they struck this balance with hormone testing, but hyperandrogenism proved a difficult biological condition for which to account.²⁹³ With Chand's appeal to the CAS Panel and the forced suspension of the Hyperandrogenism Regulations, the IOC must now reconsider a proper gender determination technique.²⁹⁴ Several scholars have proposed methods for doing this, but the IOC has not yet decided how to proceed.²⁹⁵ The IAAF plans to return to the CAS with further evidence that testosterone-based testing is valid, but the IOC continues its suspension of the Hyperandrogenism Regulations in the meantime.²⁹⁶ Contentions and criticisms flow from most gender-based categorical separation and because of this, this article has detailed several proposed solutions for the IOC.²⁹⁷ The last proposal – a total elimination of gender categories – is a radical suggestion that meets the goals of all parties involved.²⁹⁸

²⁹² See *supra* notes 74–109 and accompanying text.

²⁹³ See *supra* notes 92–109 and accompanying text.

²⁹⁴ See *supra* notes 150–161 and accompanying text.

²⁹⁵ For proposals suggested by scholars and author see *supra* notes 202–280 and accompanying text.

²⁹⁶ For full discussion regarding the IAAF's new study and its planned return to the CAS see *supra* notes 162–201 and accompanying text.

²⁹⁷ For full discussions on these proposed solutions see *supra* notes 202–291 and accompanying text.

²⁹⁸ For full discussion of last proposal see *supra* notes 256–280 and accompanying text.