

The Values of Money
Unitarian Universalist Church of Vancouver
March 22, 2026

Reflection on the Annual Pledge Campaign by Jennifer Pratt-Walter

As some of you know, I like to write poetry, especially about everyday wonders in the natural world. I was working on a piece about the water cycle, and realized it has metaphor-value toward what I have been contemplating for this message today.

In the water cycle of evaporation, condensation, coalescing and falling, each part must work neatly with the others. Whether we are falling snow, melt and rain, a stream, a river, the great seas and the entire sky, the land and the water create a dynamic that to my Wiccan heart feels alive. Alive in a way like all us here together or online this very moment. The entire being of this church in our town and into the world needs us all to contribute to the financial wellness in varying ways and patterns so all the pieces can come together and be more complete for that sharing.

Maybe you are spring rain. Maybe you're a snowflake or a cyclone, or clouds of many shapes and weights. Maybe you are the vital estuary where fresh and salty mingle. Maybe you are single molecule, H₂O, on your drifting-down path to Mount Hood. Maybe you are the sea, welcoming all kinds of water to the gathering. Every part matters.

The Science and Humanity of Gender © By Jacob Jacobson Tennesen

I'm a biologist here to preach a sermon about gender. First of all I'm a man, cis-gendered, heterosexual, with pronouns he/him or they/them. I'm not genderqueer, and whether or not you like what I say today I encourage you to also seek out the testimonies of people with other identities. But, although I have the privilege such that I could glide through life without thinking too much about gender, it's important for all of us to pay attention, our church's theme this month.

Now you might think, why bring in a scientific perspective at all? Can't we just let people be who they want to be? Isn't the point that gender is what we make it, and biology isn't destiny? And yes, that's true. But there are two reasons why I do want to share my particular expertise.

First, the world remains heavy with prejudice. Lots of people, including many with power over the rest of us, do think gender is a biological binary. Executive Order 14168 released last year claims to “restore biological truth to the federal government” by subjecting all citizens to an immutable classification as either male or female based on whether they produce small or large reproductive cells. This edict is not only cruel, it is scientifically wrong. People can’t be objectively binned into these two types. A lot of people don’t produce eggs or sperm. A doctor doesn’t actually check your gametes to determine your sex, and the shape of your body doesn’t always match your reproductive tissue. And anyway, you don’t need semen to play football, or operate a urinal, or other things traditionally associated with maleness that the government might conceivably have an interest in regulating. The bigots think that science is on their side, and it’s important to point out that it’s not.

The second reason is happier. The interdependent web of life abounds with endless forms most beautiful and most wonderful. We should witness and celebrate this awe-inspiring diversity. My shirt shows some examples. Clownfish naturally switch from male to female over their lifetime. Finding Nemo would have been a different story if it were biologically accurate. Worker bees are nominally female but they can’t reproduce so they’re a bit like a sterile third sex, and the male drones have no father: they are just unfertilized eggs that grew up. Flowers of all kinds have different assemblages of maternal and paternal parts. If you think of nature in terms of just male and female, you are missing out on much of its glory.

Reverend Kathryn asked me to offer this sermon after I told some jokes about fruits and vegetables at the Desert Auction. Sorry if you missed it, but the gist was, these are made-up categories not grounded in biology, and just because peppers and cucumbers have seeds inside doesn’t mean they aren’t legitimate vegetables. Sound familiar?

But Reverend Kathryn perhaps didn’t know that this has long been a favorite topic of mine as a science communicator, the basis for a lot of the outreach I do online. Back in 2017 I corrected a Texas state legislator on Twitter after he posted an image of X and Y chromosomes, stating “In case you forgot how many genders there are”. I said I’m a geneticist and those chromosomes don’t determine gender. After my words were retweeted 28,000 times I got a lot of impassioned feedback, both positive and negative. There are a lot of haters out there, but I stand by my words.

Most people either have two X chromosomes, and identify as female, or else an X and a Y chromosome and identify as male. But not everyone. Some people have other chromosome combinations: a single X alone, two Xs and a Y, and so on. And sometimes the gene that triggers a testosterone-rich male body moves off the Y chromosome entirely. About 1 in 500 people don’t have XX or XY the way you may have been taught in middle school. Often these people are intersex: their bodies are intermediate between male and female features. Tragically, as

babies they were probably assigned to be one sex or the other, perhaps with unnecessary surgery, instead of just being allowed their natural bodies. But you can't always tell by looking, and most of us don't even know our own chromosomes with certainty unless you've had your DNA tested.

And of course, gender is a social and psychological phenomenon that goes beyond biology. No matter what your DNA or your body looks like, your gender is what you say it is. Because gender is made up. Society has norms about it, but those are just arbitrary and often unnecessary. Even my own lifelong love of biology is weirdly gender-coded. Boys were supposed to like trucks and sports, but I didn't, I liked sloths and capybaras. So I was made to feel out of place for no good reason. Later as a parent, when my kid was offered a sticker at the doctor's office, they would first check to make sure they had any "girl ones." No asking, no offering a variety of choices, no awareness that all kids might love dinosaurs or teddy bears or whatever, just assuming about gendered preferences. It's a tiny thing, but these tiny things are everywhere and they add up. We could just let kids figure out what they like instead of telling them.

But genes probably do influence how we categorize ourselves and each other. This transcends human culture. The Tacoma zoo recently lost an elderly elephant, Suki, who recognized human men and was wary of us due to her past experience in the circus. Elephants can distinguish males and females. Does an elephant have a sense of their own gender? Probably. And if so, why should this always match the elephant's own genitals, which it can't even see? So gender as a key aspect of self identify is probably deeply rooted in our mammalian evolutionary past. And that's why it's such an important mental health issue. There are severe psychological consequences when a person is forced to reject the gender that they feel themselves to be.

Reverend Kathryn also did not fully know the extent to which this topic has been pivotal in my own professional research. For years I worked on sex chromosomes in strawberry plants at Oregon State University. The strawberries you buy in the store grew on a plant capable of being both a father and a mother, producing both pollen and fruit. That makes it easy for farmers, since any plant can pollinate any other. But their wild ancestors had separate males and females. Sort of. There are a lot of plants that make a bunch of pollen, but also can produce a little fruit. And other plants laden with fruit that also can squeeze out a little pollen. Male and female are the ends of a continuum full of male-ish plants and female-ish plants. And they don't have X or Y chromosomes, there are various different chromosomes that influence fertility because the main gene jumps around the genome. Real life is complicated. The binary can be a convenient shorthand but it's not the whole story.

I don't work on strawberries anymore, I mostly work on parasitic disease, but I still regularly have to deal with questions of sex and gender. I currently have a dataset of clinical malaria

patients from India, which includes their sex chromosomes. Sometimes these don't match the gender of the patients as recorded on their medical forms. That could indicate an accidental sample mix-up, or it could mean that their chromosomes really don't match their gender. So I've had to talk with colleagues in India to establish a baseline of expected gender identities, just so we can estimate our own error rate accurately. Good science depends on this stuff.

The Y chromosome is associated, not perfectly, with all kinds of traits from facial hair to autism. But perhaps its strongest behavioral effect not directly tied to reproduction is its influence on aggression. Violent behavior in humans is strongly correlated with possessing a Y chromosome. In fact it's hard to think of any other example where a single genetic factor is so tightly linked to human action. Not that most men are violent, but most violent acts are done by men. And this is instructive. Because we all know that men are fully capable of controlling ourselves. A Y is not an excuse to attack people. We can overcome biological urges with willpower. And if sex chromosomes don't control us when it comes to violence, they don't control anything else we do either.

But because of this connection to violence, as a man I worry about making people uncomfortable or afraid. Especially if, like Suki the elephant, you've had dangerous encounters with men in the past. When discussing gender, violence is the elephant in the room, specifically the bathroom, since that is so often the focus of gender-exclusive safe spaces. A popular right-wing talking point is that transgender people are prone to violence, but this has no basis in fact. Transgender people are much more likely to be *victims* of violence. The main violent group has always been cisgendered men. And assaults can sadly happen anywhere; a gender-inclusive restroom is not a uniquely risky spot. A major part of the work toward gender inclusivity lies with us cis-men, to demonstrate non-toxic masculinity, and help our peers and mentees find safe and healthy ways to handle emotions. I'm lucky to have had positive male role models in my life. By being gentle men, we help refute the narrative that a Y chromosome in the ladies' room is automatically a threat. If you want to meet some other men who do this well, come join the church men's group.

There are real sex and gender differences, but these are averages. The problem is treating them as a fundamental division instead of just another component of messy biological variation. Male and female are said to be opposites like day and night. Ok, well maybe that isn't a bad metaphor if we actually break it down. Because time, like gender, is a social construct. Time is real, but the way we divide it is made up. Day and night aren't absolutes, they are just two sides of the Earth in space and there is no clear dividing line. The sun here is like the Y chromosome, flooding the Earth with its signature output be that light or testosterone. In the presence of sunlight it is day, all else being equal, but dawn or fading twilight are commonly encountered edge cases, and quite beautiful ones. A solar eclipse is like when the maleness gene occurs in a

female body because its effect has been blocked: a rare but entirely natural occurrence. And gender? Gender is the light that actually surrounds you. Thanks to human intervention, you can find yourself in a brightly lit ballroom at midnight or in a pitch-black basement at noon. Or maybe under a flashing multicolored strobe light. For all practical purposes it doesn't matter which part of outer space your side of the planet is pointing to, it matters what you can see. In the pre-scientific mindset of medieval times, the sun and the moon were seen as paired counterparts, equal and unparalleled, but now we know they are just two of many objects in space and have no particular primacy. Traditional views on sex and gender are similarly outdated and must be realigned with science.

So where do we go from here? Raising awareness is the first thing. I cannot overstate the importance of OWL. OWL, Our Whole Lives, is a comprehensive human sexuality curriculum with classes for kindergarten through adulthood. I'm a trained instructor, and we've just started a class for elementary-aged kids. We offer it in this congregation periodically, and so do UU and other liberal religious churches across the country. It teaches everything you might ever want to know about sex and gender, within the context of our UU values. So many of the problems in our world, people treating each other with fear and hatred, or unsure how to manage their own emotions or bodies, could be solved if everyone just took OWL. I'd love to see us train more instructors, offer more OWL classes, and bring in new members out of the broader community, drawn to these valuable courses.

I dream of a world where everyone is celebrated for their own uniqueness, the same way we appreciate a flower garden. Being attractive to butterflies looks different than being attractive to hummingbirds; a flower going all in on pollen production is different from one reserving space for fruit to ripen. It would be boring if they all did things the same way.

But also, conversely, I dream of a world where respect is independent of gender and thus gender can be ignored. When you see a bald eagle it's almost impossible to tell by looking if it's male or female, and it doesn't matter, you honor it either way. I'd personally love it if someday in professional and legal settings we all used they/them pronouns by default, the same way we don't force the ethnic or religious identities of our coworkers into our everyday speech. We could still use our "hes" and "shes" and other pronouns in our private lives. I wish all public bathrooms could look like my favorite one at the Harvard T. H. Chan School of Public Health: welcoming all genders, it has a central sink surrounded by the rainbow doors of individual closet-like stalls with floor-to-ceiling privacy.

Maintaining this balance, between rejoicing in our diversity while also treating everyone equitably, is an ongoing project. Until we get there, we can't dismiss gender, we need to let marginalized voices shout out and be heard. Let's listen to everyone. I hope you don't leave

today thinking, “well, now I know all about gender because a middle-aged straight cis man told me,” but rather that this is part of a continuing conversation.

My shirt says “Biology is Bigger than Binaries,” but so is religion, society, ourselves. We contain multitudes. We are creatures of possibility, never reaching the end of everything possible. Go forth and pay attention to the bountiful world that refuses to conform to simple categories.