Fall

NEWSLETTER

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MARK YOUR CALENDARS

- **FEB 12-14 - AAAS Annual Meeting**
- **MAR 7 - Out to Innovate Summit**
- **MAR 15 - OTI Fellowship Due**

REGISTER NOW FOR THE OTI 2026 SUMMIT

After several years, Out to Innovate is hosting its first in-person summit again, “Innovating for Inclusion” at the University of Southern California, on Saturday, March 7. The day-long event will feature several professional development workshops, keynote speakers, and panels covering LGBTQ+ issues and research.

Learn more and register here: www.outtoinnovate.org/summit

OUT TO INNOVATE™

Top row (left-to-right): Cynthia Lionheart, Erukuna Wambi, Evie Florek, Haden Fincham
Bottom row (left-to-right): Jean Flagg, Kyle Tong, Rayion Smith, Skyler Kasnoff

2025 SCHOLARSHIP WINNERS

Out to Innovate is proud to announce the winners for the 2025 Out to Innovate scholarships. These scholarships recognized LGBTQ+ students who have achieved academic excellence in a STEM field. Eleven community college, undergraduate, and graduate students were recognized. The scholarships were funded by individual and corporate donors. Congratulations to this year's winners and thank you to the contributors!

Motorola Solutions Foundation supports Out to Innovate scholarships for students in technology and engineering fields. This year, these funds supported eight students:

Erukana Wambi is a computing/informatics major at Rowan University. Wambi is the winner of the 1st place Out to Innovate Scholarship and had this to say, "I am truly honored to be a recipient of the $7,500 Out to Innovate Scholarship, supported by the Motorola Solutions Foundation. This recognition not only alleviates some of the financial challenges of pursuing my education, but it also fuels my commitment to using technology as a tool for advancing equity, inclusion and meaningful change in STEM and beyond."

Cynthia Lionheart is the 2nd place winner of the Motorola Solutions Foundation OTI Scholarship. Lionheart is an information technology student at George Mason University and said, "I am deeply honored to receive the Out to Innovate scholarship, sponsored by the Motorola Solutions Foundation. [...] I am passionate about ensuring technology is accessible to all customers. From redesigning Lyft to be more accessible for people with Mast Cell Activation Syndrome to building a website to allow people with contact allergies to access safe personal care products, I believe that by recognizing the needs of often-overlooked users, I can help businesses and their customers succeed. My focus this semester is on how AI can be used to expand the accessibility of existing software applications. Thank you, Out to Innovate and Motorola Solutions, for this incredible honor. Your support for LGBTQ+ students in STEM and accessibility is truly inspiring."

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Elizabeth Florek is the winner of the OTI Community College Transfer Scholarship supported by Motorola Solutions Foundation. Florek attends Virginia Commonwealth University and studies electrical engineering. “As a nontraditional engineering student returning to university after years of working in progressive political advocacy, I am grateful for Out to Innovate’s support. What we fund, what we research, what we build (whether at the international, national, state, or local levels) these are all political choices. Our researchers, scientists, and engineers bring more to the table when they reflect the diversity in our actual communities. I am delighted to accept this scholarship and I hope that as I progress in my career, I can open doors for future students as doors like this one were opened for me,” said Florek.

Jean Flagg is the second winner of the OTI Community College Transfer Scholarship supported by Motorola Solutions Foundation. A computer science student at George Mason University, Flagg had this to say, “When I woke up at 7:32 AM and saw the notification that I was chosen to receive this scholarship, my heart jumped out of my body. I couldn't be more grateful for this opportunity, and this support will allow me to continue my college career in computer science. It is a huge relief off my shoulders, and I will forever continue to engage with and support my local LGBTQ+ communities just as Out to Innovate does for us.”

Skyler Kasnoff is the winner of the OTI Scholarship supported by BAE Systems Outlink & Out to Innovate. Kasnoff is a geography major at University of Denver and said of the scholarship, “Receiving this scholarship has created an opportunity for me to continue pursuing climate resilience at the University of Denver. It is a great privilege and calling, to delve into the world of academia through the lens of serving communities against seemingly indomitable challenges. With love and compassion, I put my best foot forward to fight climate change, and I recently decided to put the same energy towards helping destigmatize transgender people to America. This scholarship supports me, but also goes a long way in helping demonstrate to people that queer scientists are filled with love, expertise, and grit. Thank you.”

Haden Fincham is also a recipient of the OTI Scholarship supported by BAE Systems Outlink & OTI. Studying biology at West Virginia Wesleyan College, Kasnoff said, “As I approach the end of my time at my school, I've been realizing how many activities I've taken up and have felt busier and busier. With that being said, I really appreciate the generosity of alleviating my academic financial stress! During the semester, I lead my college's queer-straight alliance and biological honor's society, coordinate our high tunnel, and sit on various committees. To not accrue significant debt, I've considered giving up some of my roles in these many organizations I love, including a work study, to take up waiting tables off campus. However, Out to Innovate and BAE Systems, Inc. are helping me to continue leading and learning. In addition, I'll be able to continue my research on gene regulation in the bacteria that causes Lyme disease (Borrelia burgdorferi) in the Fall. Thank you!”

Kyle Tong is the winner of the OTI Scholarship supported by Wesco, Environmental Science Associates, and OTI. Tong is a computer science and public health student at Columbia University. “Being a recipient of this scholarship is both an honor and an inspiration to continue my journey in public health, supporting and healing communities in need.”

Rayion Smith is a biology student at Illinois Wesleyan University and is the winner of the Amy A. Ross Bioscience Scholarship. Smith said, “Being awarded the Amy A. Ross Scholarship in Bioscience means a lot to me. This is a moment I have wished for, not only for myself, but others too. This scholarship empowers LGBTQ+ students like myself by removing financial barriers, allowing me to focus on my studies and achieve my full potential.”

"SEX IS A SPECTRUM" (EXCERPT)

Author Dr. Agustin Fuentes has recently published a book *Sex is a Spectrum*. One of Out to Innovate's board members has reviewed the book, and Out to Innovate members will receive a discount code to purchase the book. Below is an excerpt:

"Imagine you are a fish called the bluehead wrasse, living off the coast of Florida. As you grow up, you, just like all to the other bluehead wrasse your age and size, develop one set of reproductive organs. You are what we'd call female, so you produce eggs. There is only one very large member of your group, and they are the group male, so produce sperm. But over the next few weeks you grow really fast, becoming the second-largest fish on your reef. Then the male gets eaten. Almost immediately your body starts to change, your reproductive organs mold, shift, and alter their form. You become the group's sperm producer.

As a bluehead wrasse, you can have one body and one set of DNA, but multiple forms of reproductive biology across your lifetime. Bluehead wrasse reproductive biology is not the most common pattern in the animal kingdom, but it's also not that weird. When most people think of the biology of reproduction, they typically envision two fixed kinds in each species: female and male. This is (mostly) right when it comes to the reproductive organs themselves, but not accurate for entire bodies and lives.

Most species do have two types of reproductive organs, and they are often found in two slightly different forms of that species' body plan. But not always. As with the wrasse, many fish start out with one set of reproductive organs, and once they grow to a certain size, they redo their anatomy and develop a new set of reproductive organs. Each earthworm's body has both types of its species' reproductive organs. Bees have two kinds of reproductive organs across three kinds of bodies. All mammal mothers lactate, but in some species of bat, fathers do too. And, as in the two different types of orangutan male, one with big face flanges and the other without, there can also be quite a bit of variation in bodies and behavior even among those individuals within the same species that have the same reproductive organs.

There is an explosion in research on the biology of reproduction—what we'll call sex biology—in the animal kingdom. While we continue to find that there are important differences in reproductive biology producing female, male, and some times intersex bodies in any given species, there is also a lot of variation, and overlap, in the actual biology and behavior that make up these categories. The variation we observe across the animal kingdom doesn't represent unusual exceptions to some kind of rule of sex; rather, this spectrum of variation tells us that females and males are not two different kinds of thing. Sex biology is not about two distinct kinds, a binary; instead, it's about patterns of variation in bodies, behavior, and lives that differ, overlap, and intertwine. Sex biology, as it turns out, makes life quite interesting.

The explosion in research is not limited to how other animals "do sex." There is also enormous investigation into human bodies, reproductive processes and patterns, health, hormones, genitals, genetics, behavior, and other related topics. For example, we now know that human brains don't come in "male" and "female" versions. Also, unlike some other mammals, all human caretakers (regardless of their reproductive organs) can undergo changes in their brains, bodies, and behavior when they take care of babies. Fascinatingly, human sexual behavior, including the targets of attraction and arousal, is not necessarily linked to what kind of reproductive organs one has. And, most importantly, human sex is never just about biology; we have gender too.

In short, there is a lot going on in science regarding sex and gender in humans.

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Unfortunately, there is also a ton of misunderstanding in society about what biology, especially sex biology, tells us and what it doesn't tell us. And there is lack of awareness of just how diverse and variable humans are. To bet ter understand biology and sex in humans, we need to learn about our bodies, histories, cultures, and behavior. We have to understand what it means that every thing about humans is a supercomplicated blend of biology and culture. We need to combine our knowledge of biology, sex, and the human experience into a new narrative.

My goal is to put forward this new narrative and show how the biology of sex actually works, what it does and does not tell us, and how we might in corporate this knowledge into our education, lives, and laws. To do so, I summarize what is currently known about the biology of sex in animals and how, and why, that relates to humans. This is important because understanding animal biology is at the heart of understanding human biology (we are, after all, animals). From there, I illustrate what we know about sex, in biology and behavior, in the human past and present, across the last two million years of our lineage's existence and among the eight billion humans living today. What this knowledge from the animal world, the human past, and the human present shows us is that biology as it relates to sex is not binary, meaning that it does not come in two distinct kinds: male and female. This is not to say that females and males are the same. They aren't. Nor is it that biological variation related to sex does not matter. It does. It's just that not all humans fit neatly into the categories of female or male, and biological measures of human bodies rarely segregate into two non- overlapping categories. Neither "female" nor "male" describes a uniform or distinct biological type.

I conclude by discussing why a binary view is a detrimental way to think, and talk, about sex biology and the human experience. Reproductive biology is an important structuring part of human lives; however, producing ova or sperm, having XX or XY chromosomes, or having a clitoris or a penis, does not tell us nearly as much biologically as many believe. Nor does it consistently or accurately inform us about an individual's childcare capacity, homemaking tendencies, interest in literature, engineering and math capabilities, or tendencies toward gossip, violence, compassion, or a love of sports. By contrast, placing reproductive biology in the context of the rest of the body, and in relation to behavior, history, society, and experience, we are much better prepared to ask, and answer, questions about health, habits, proclivities, happiness, and the many ways to successfully be human. "

Excerpted from Sex is a Spectrum: The Biological Limits of the Binary, 2025, published by Princeton University Press and reprinted here by permission.

SUBMISSIONS

The **Out to Innovate Bulletin** is published quarterly, most of the time. Contributed articles are welcome and encouraged and may be emailed as plain text to editor@noglstp.org. The next publication deadline (for the winter newsletter) is **February 28, 2026**. Please acknowledge the Out to Innovate Bulletin as your source if you choose to reproduce any of these articles.

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