

L^AT_EX Template

Gay Matters

Celebrating Transgender Research!

Gay Matters highlights LGBTQ+ scientists whose work has made a positive impact on the LGBTQ+ community. In the previous magazine issue, we highlighted the work of LGBTQ+ neuroscientists. This time, we'll showcase the progression of transgender research starting with the first transgender clinic and ending with exciting new research on gender-affirming hormone therapy with mouse models.

Dr. Magnus Hirschfeld

TRANSGENDER health-care has been around for longer than you might think. Did you know that the first transgender clinic was active in the early 1920s and that some of the first gender affirming surgeries occurred there? The Institute für Sexualwissenschaft (Institute for Sexual Research) was the work of Dr. Magnus Hirschfeld, a physician and sexologist based in Berlin, Germany.¹ Frustrated by the lack of research and supports available for LGBTQ+ people, Dr. Hirschfeld founded the institute in 1919.² The Institute für Sexualwissenschaft specialized in research on LGBTQ+ topics and offered support and resources for transgender people³. It was an incredibly

valuable resource for LGBTQ+ people at a time when homosexuality was considered illegal and people could not discuss their sexuality safely.¹ LGBTQ+ people went to the institute to learn about contraception and other sex education, explore the extensive library on sexual research and transgender healthcare, or simply enjoy being in a safe and welcoming environment.² The institute also had gynecologists who performed gender-affirming surgeries.¹ The institute was unfortunately targeted and destroyed by the Nazis in 1933,³ but they were not able to destroy Dr. Hirschfeld's legacy. Dr. Hirschfeld increased awareness of the concept of nonbinary and gender-fluid gender identities by moving psychologists and healthcare professionals away from pathologizing homosexuality,² and his institute paved the way towards understanding and acceptance of transgender people.

Dr. Troy Roepke

Gender affirming hormone therapy is a vital, life-saving resource for many transgender people. One new and exciting area of research is the use of animal models to determine the metabolic effects of gender affirming hormone therapy.⁴

Dr. Troy Roepke and their team in the Pink Lab use mice to explore hormone therapies commonly used by transgender women.⁵ In a recent study, they gave mice a hormone therapy consisting of an estrogen supplement and an androgen blocker.⁶ Since estrogen is involved in developing female secondary sex characteristics and androgen blockers reduce testosterone signalling, this represents a hormone therapy for transgender women.⁶ Dr. Roepke's team then compared the behaviour, body weight, and energy metabolism of the mice who received hormone therapy relative to mice who received hormone therapy and had their testicles surgically removed.⁵ Mice who received just the hormone therapy had higher metabolic rates and modified glucose metabolism compared to mice who received both the hormone therapy and surgery.⁵ This is a useful model that demonstrates the changes that may be experienced by women who use similar hormone therapies but do not have gender affirming surgeries. Dr. Roepke hopes to expand their research to include hormone therapies used by trans men. They also are a strong role model for queer students and an advocate for LGBTQ+ scientists. Transgender healthcare

is an important area of research with lots of potential for new discoveries. Ongoing work in this area focuses on exploring the physiological effects of hormone therapies and discovering safe and effective gender affirming practices. In the future, we may even see new reproductive technologies such as uterine transplantation,⁷ and hormone therapies tailored for the specific needs of populations such as older

transgender people. Transgender healthcare research has come a long way from its origins at Dr. Hirschfeld's institute, with many exciting possibilities for the future.

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1. Schillace B. The Forgotten History of the World's First Trans Clinic. *Scientific American*. August 1, 2021. Accessed October 21, 2024. <https://www.scientificamerican.com/article/the-forgotten-history-of-the-worlds-first-trans-clinic/> 2. Bryan-Quamina G. Magnus Hirschfeld and the Institute for Sexual Science. *Science Museum Blog*. February 29, 2024. Accessed October 21, 2024.

<https://blog.sciencemuseum.org.uk/magnus-hirschfeld-and-the-institute-for-sexual-science/> 3. Magnus-Hirschfeld-Gesellschaft. The first Institute for Sexual Science (1919-1933). Accessed October 21, 2024. <https://magnus-hirschfeld.de/ausstellungen/institute/> 4. Aghi K, Goetz T, Pfau D, Sun S, Guthman E, Roepke T. Using Animal Models for Gender-Affirming Hormone Therapy. *J Endocr Soc*. 2023;8. doi:10.1210/jendso/bvad144 5. Yasrebi A, Otersen K, Groh O, et al. 7288 A Preclinical Mouse Model of Gender-Affirming Hormone Therapy: Metabolic and Behavioral Outcomes. *J Endocr Soc*. 2024;8. doi:10.1210/jendso/bvae163.1787 6. Hamilton KJ, Arao Y, Korach KS. Estrogen hormone physiology: Reproductive findings from estrogen receptor mutant mice. *Reprod Biol*. 2014;14(1):3-8. doi:10.1016/j.repbio.2013.12.002 7. Jones BP, Williams NJ, Saso S, et al. Uterine transplantation in transgender women. *Bjog*. 2018;126(2):152. doi:10.1111/1471-0528.15438



Alice in Wonderland

This excerpt from Alice's Adventures in Wonderland demonstrates the features of a L^AT_EX-based magazine template. It can be created by pasting plaintext files into R, adding some annotations to initiate custom environments, and knitting it to a PDF. The custom environments are for Q & A style articles, a simple block quote, references, author names and a preamble (such as this one).

Alice was beginning to get very tired of sitting by her sister on the bank, and of having nothing to do: once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, “and what is the use of a book,” thought Alice “without pictures or conversations?” So she was considering in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her.

The White Rabbit

There was nothing so very remarkable in that; nor did Alice think it so very much out of the way to hear the Rabbit say to itself, “Oh dear! Oh

dear! I shall be late!” (when she thought it over afterwards, it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but when the Rabbit actually took a watch out of its waistcoat-pocket, and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and burning with curiosity, she ran across the field after it, and fortunately was just in time to see it pop down a large rabbit-hole under the hedge. In another moment down went Alice after it, never once considering how in the world she was to get out again. The rabbit-hole went straight on like a tunnel for some way, and then dipped suddenly down, so suddenly that Alice had not a moment to think about stopping herself before she found herself falling down a very deep well. Either the well was very deep, or she fell very slowly, for she had plenty of time as she went down to look about her and to wonder what was going to happen next. First, she tried to look down and make out what she was coming to, but it was too dark to see anything; then she looked at the sides of the well, and noticed that they were filled with cupboards and book-shelves; here and there she saw maps and pictures hung

upon pegs. She took down a jar from one of the shelves as she passed; it was labelled “ORANGE MARMALADE”, but to her great disappointment it was empty: she did not like to drop the jar for fear of killing somebody underneath, so managed to put it into one of the cupboards as she fell past it.

Falling

“Well!” thought Alice to herself, “after such a fall as this, I shall think nothing of tumbling down stairs! How brave they’ll all think me at home! Why, I wouldn’t say anything about it, even if I fell off the top of the house!” (Which was very likely true.)

Down, down, down. Would the fall never come to an end?

“I wonder how many miles I’ve fallen by this time?” she said aloud. “I must be getting somewhere near the centre of the earth. Let me see: that would be four thousand miles down, I think—” (for, you see, Alice had learnt several things of this sort in her lessons in the school-room, and though this was not a very good opportunity for showing off her knowledge, as there was no one to listen to her, still it was good practice to say it over) “—yes, that’s about the right distance—but then I wonder what Latitude or Lon-

gitude I've got to?" (Alice had no idea what Latitude was, or Longitude either, but thought they were nice grand words to say.) Presently she began again. "I wonder if I shall fall right through the earth! How funny it'll seem to come out among the people that walk with their heads downward! The Antipathies, I think—" (she was rather glad there was no one listening, this time, as it didn't sound at all the right word) "—but I shall have to ask them what the name of the country is, you know. Please, Ma'am, is this New Zealand or Australia?" (and she tried to curtsy as she spoke—fancy curtseying as you're falling through the air! Do you think you could manage it?) "And what an ignorant little girl she'll think me for asking! No, it'll never do to ask: perhaps I shall see it written up somewhere." Down, down, down. There was nothing else to do, so Alice soon began talking again. "Dinah'll miss me very much to-night, I should think!" (Dinah was the cat.) "I hope they'll remember her saucer of milk at tea-time. Dinah my dear! I wish you were down here with me! There are no mice in the air, I'm afraid, but you might catch a bat, and that's very like a mouse, you know. But do cats eat bats, I wonder?" And here Alice began to get rather sleepy, and went on saying to herself, in a dreamy sort of way, "Do cats eat bats? Do cats eat bats?" and sometimes, "Do bats eat cats?" for, you see, as she couldn't answer either question, it didn't much matter

which way she put it. She felt that she was dozing off, and had just begun to dream that she was walking hand in hand with Dinah, and saying to her very earnestly, "Now, Dinah, tell me the truth: did you ever eat a bat?" when suddenly, thump! thump! down she came upon a heap of sticks and dry leaves, and the fall was over.

Q What happened to Alice after that?

A Alice was not a bit hurt, and she jumped up on to her feet in a moment: she looked up, but it was all dark overhead; before her was another long passage, and the White Rabbit was still in sight, hurrying down it. There was not a moment to be lost: away went Alice like the wind, and was just in time to hear it say, as it turned a corner, "Oh my ears and whiskers, how late it's getting!" She was close behind it when she turned the corner, but the Rabbit was no longer to be seen: she found herself in a long, low hall, which was lit up by a row of lamps hanging from the roof.

Q There were doors all round the hall, but they were all locked; and when Alice had been all the way down one side and up the other, trying every door, she walked sadly down the middle, wondering how she was ever to get out again.

A Suddenly she came upon a little three-legged table, all made of solid glass;

there was nothing on it except a tiny golden key, and Alice's first thought was that it might belong to one of the doors of the hall; but, alas! either the locks were too large, or the key was too small, but at any rate it would not open any of them. However, on the second time round, she came upon a low curtain she had not noticed before, and behind it was a little door about fifteen inches high: she tried the little golden key in the lock, and to her great delight it fitted! Alice opened the door and found that it led into a small passage, not much larger than a rat-hole: she knelt down and looked along the passage into the loveliest garden you ever saw. How she longed to get out of that dark hall, and wander about among those beds of bright flowers and those cool fountains, but she could not even get her head through the doorway; "and even if my head would go through," thought poor Alice, "it would be of very little use without my shoulders. Oh, how I wish I could shut up like a telescope! I think I could, if I only knew how to begin." For, you see, so many out-of-the-way things had happened lately, that Alice had begun to think that very few things indeed were really impossible. There seemed to be no use in waiting by the little door, so she went back to the table, half hoping she might find another key on it, or at any rate a book of rules for shutting people up like telescopes: this time she found a little bottle on it, ("which certainly was not here

before,” said Alice,) and round the neck of the bottle was a paper label, with the words “DRINK ME,” beautifully

printed on it in large letters.

Lewis Carroll

1. Carroll, Lewis. (2006). Alice in Wonderland. Urbana, Illinois: Project Gutenberg. <https://www.gutenberg.org/cache/epub/11/pg11-images.html>
2. Veeterzy. (2016). Green Leafed Tree. <https://www.pexels.com/photo/green-leafed-tree-38136/>