

Queer Biology

GEO51803



Pine Bones/High Country News

Language: English

Credits: 3 ECTS

Period: 3-4

Venue: Old Library, Clockhouse, Generaal Foulkesweg 37, Wageningen

Time: 18:00-20:30

Dates: January 12, 15, 22; February 12, 19, 22, 26 2026

Exam: No written exam. Deadline final group work: Feb 26, 2024. Deadline individual reflection paper March 01, 2024.

Contact person: Lise Gatti (lise.gatti@wur.nl)

Lecturer(s): Lise Gatti, Jan “Amo” Behrens, Duur Aneen, Ania Ektate

Examiner(s): Chizu Sato (GEO)

Secretariat: GEO; Gaia, building number 101

Profile of the course

Queer biology is an interdisciplinary approach that applies the conceptual framework from queer theory and queer ecology to biology. It aims at dismantling the binary, heteronormative, and anthropocentric narratives that have shaped and prejudiced the teaching of the natural world. In that sense, behaviors that do not conform to our societal conventions are termed abnormal and directly excluded from research, relentlessly conforming nature to patriarchal values. Such a narrow understanding of the natural world has led to the complete exclusion of nature's queerness from our curriculum. Altogether these outdated research frameworks fail to explore the importance of queer behavior and how such interaction shapes the ecology around us and within us.

"From a biological perspective, nothing can be against nature; everything that occurs is, by definition, natural."

This course aims to dismantle many preconceived ideas from the hetero-dominated world of science by putting the spotlight on the overlooked, marginalized, and misunderstood living organisms around us. How remarkable are female Laysan albatrosses, which enter homosocial relationships to raise and defend their chicks, the fact that some fungal species can have as many as twenty-three thousand "biological sexes", or even protandrous hermaphrodite clown fish, which are born males but when facing a changing social environment can become females.

The core structure of the course relies on redefining sex and understanding its fluidity using teaching from the queerness of the natural world, from animals to fungi, passing by plants and lichens.

The course will begin with an introduction to different concepts of queer theory, following some deeper ecological themes that we will collectively address.

- How gender/sex exists interconnected across biology, sociology, and psychology.
- Breaking down sexual selection theories and understanding the creation of the binary.
- How does sex work in a Queer world: sex-reversal, intersex and same-sex relationship
- Queer ecologies. Moving beyond anthropocentric boundaries questioning separation of the human and more-than-human
- How can we connect to queer nature around us.

This course emphasizes on using different learning methods to establish a more hands-on learning environment. In parallel to lectures and post-lectures discussion and debates, this course will include alternative education methods, such as lectures from diverse disciplines, creative learning, and queer nature guided walk.

Our students

PhD, MSc and 3rd year BSc students of all study programs are welcome to join this course. Participation is limited to 25 students.

The course is organized in such a way that students can follow the course on top of their regular classes. It will be 3 ECTS and contact hours will consist of 1-2 evenings per week over 5 weeks. We do, however, ask for full commitment of the course participants because internal group dynamics are an integral part of the course. This means that attendance to all sessions are mandatory. In addition, the group assignments will demand students' commitment and flexibility.

Student wellbeing

Studying can challenge both your physical and mental health. If you feel your motivation slipping, or have problems with self-discipline or focus, there are several options at WUR that might be helpful. First of all, your study advisor is there to help you and think along with you on how to overcome any struggles you are facing. They can also put you in contact with any of the following four platforms, which you can also contact directly yourself: 1) Student Support and Training for help and trainings on stress management, personal development, career development, well-being, study skills, and intercultural communication; 2) Gezonde Boel, the eHealth platform (currently in Dutch, but translation is underway); 3) a Student life coach, where you can have a heart-to-heart talk with an experienced coach about challenging situations in your life, loneliness, relationships (love, friends, family), motivation, health, making choices, or questions about your future – nothing is taboo; and 4) the Student Psychologists, who you can contact for an appointment at studentpsychologists@wur.nl (note that there is currently a 2-week waiting period for appointments).

If these issues affect your work in the course, please do not hesitate to discuss with the course coordinator (lise.gatti@wur.nl). We understand that everyone has different capabilities that can often change over time, and would like to work to accommodate the needs of everyone who wishes to take the course. Also, please know that mental struggles of any kind are very common and nothing to be ashamed of. Your friends, family, study companions, housemates or others will be understanding of your problems, and it can be very valuable and a great relief to talk to someone close to you if you are facing difficulties.

Learning goals:

After having followed this course, students will be able to:

1. Understand the theoretical framework behind Queer biology.
2. Understand the social and cultural aspect of sex and gender.
3. Understand sexual evolution and sexual reproduction across different taxa (fungi, plants, vertebrates and invertebrates)
4. Practice having a critical approach to concepts behind sexual evolution and binary concepts in biology.
5. Understand the concepts behind intersex, homosexual, homosocial, sex-reversal.
6. Understand how nature is being researched and taught using a heteronormative, reductive and anthropomorphic lens. Reflect on how you can minimize such bias in your own life both academic and personal.
7. Working alone or in a team to multimedia presentation/game inspired by the teaching and learning discussed in the course.

Teaching methods

Being worth 3 ECTS, the course supposedly comprises 84 hours of work in total. 14 hours of which are contact hours, comprising of six weekly two-hour lectures/workshops, spread across 6 weeks (due to 2 weeks break in the middle for exam and study week). 8 hours per week are reserved to complete the required readings prior to each session. Across the 6 weeks, this totals 48 hours of reading and self-reflection time. The remaining 24 hours are dedicated to completing the group project, which will be presented at the end of the course, in week 8.

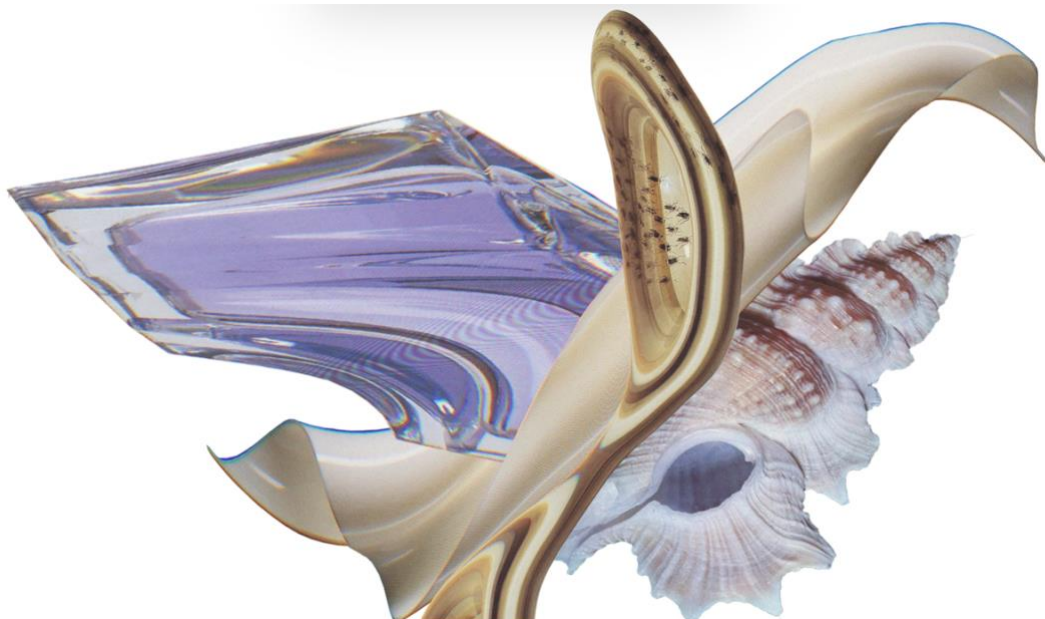
Literature

The required readings for each session are detailed in the course structure below. These will be made available to all students via Teams, as well as suggested further readings.

Assessment strategy

The learning goals will be assessed through a presentation/game-based group project, to be presented during a group session at the end of the course (graded as pass/fail).

Learning goal	Group project	Reflection
Understand the theoretical framework behind queer biology	x	x
Understand the social and cultural aspect of sex and gender	x	x
Understand sexual evolution and sexual reproduction across different taxa (fungi, plants, vertebrates and invertebrates)	x	
Practice having a critical approach to concepts behind sexual evolution and binary concepts in biology.	x	x
Understand the concepts behind intersex, homosexual, homosocial, sex-reversal.	x	
Understand how nature is being researched and taught using a very anthropomorphic lens. Reflect on how you can minimize such bias in your own life both academic and personal.		x
Working alone or in a team to multimedia presentation/game inspired by the teaching and learning discussed in the course.	x	



Collage by Fenna Schilling

Group project

The final assessment will take the form of a group project. However, if a student prefers to work individually for personal reasons, the assignment can be adapted accordingly. Students may choose between two assessment formats:

Artistic or Multimedia Presentation.

The group will select an organism endemic to the Netherlands and explore how sex fluidity manifests within this species. The presentation should include at least one of the concepts discussed in class, such as intersex variation, sex reversal, various ways of reproduction, and homosocial or homosexual behavior. The presentation may take any artistic or multimedia form, such as a short film, performance, play, choreography, tapestry... Students are highly encouraged to observe and/or interact with the chosen organism in its natural environment.

Game-Based Project

Alternatively, students may design a game centered on the theme of Queer Biology, illustrating key concepts and case studies from the course and personal research. The game may take various forms, trivia, card game, riddle, or similar formats.

All projects will be presented on the last session of the course. Each group is expected to present their assignments under 20min. During this last session we will aim to create a space in which we can inspire and learn from each other. Through playfulness and various artistic format, we will explore how creativity and queerness can be intertwined with natural sciences teachings.

We are aware that all participants come from a different background, and some are completely new to the field of natural sciences in general. The most important measure for the grading is therefore the perceived effort put into the work as well as the implication and personal development achieved throughout the course. As group process is also an important part of the project, it will be assessed in part through peer-assessment based on three criteria: contribution to content, dependability, and communication.

Date Time: 18:00-20:00	Session theme	Facilitator
12/01	Introduction to Queer Biology	Lise Gatti
15/01	'The lie of binary biological sex' A brief history of gender/sex and how this connects to psychology and sociology through cultural construction	Jan 'Amo' Behrens
22/01	The biological basis of sexual selection illustrated through the fluidity of sex in fungi.	Duur Aneen
	29.01 & 5.02 – NO CLASS – EXAM WEEK	
12/02	Sex in a queer world: intersex, sex-reversal and homosocial/homosexual relation	Lise Gatti
19/02	Queer ecologies workshop: Through the lens of lichens	Clarinde Wesselink
22/02	Queer nature guided walk: exploring the queer organisms that live around us	Ania Ektate
26/02	Group project presentation and Game	Lise Gatti

Week 1 (January 13): Introduction to queer theory and queer biology

From: Lise Gatti

During the first session, we will begin by going over the structure and expectations of the course, as well as the assignments. We want this course and the space that we create to feel safe and familiar. We will then take some time to get to know each other and the rest of the class. In the second half of the session, we will introduce concepts from queer biology and provide some theoretical concepts and background for the sessions to come. We encourage participants with all academic background to take part of the course. To make sure everyone has some basic knowledge will take some time to go over some fundamental theories and jargon behind sexual evolution and queer biology.

To get acclimated with the topic of the course we ask you to read:

Movie: Queer Planet, Ed Watkins

Recommended reading:

Evolution's Rainbow: Diversity, Gender, and Sexuality in Nature and People, Joan Roughgarden

Week 1 (January 15): Cultural history behind gender

From: Jan 'Amo' Behrens

In this session we will go over a brief history of the construction of gender/sex in western Europe. We will explore how gender/sex exists interconnected across biology, sociology, and psychology and how these dimensions dictate one another to arrive at our current perceptions. We will begin at hunter-gatherer tribes, move through the middle ages, the industrial revolution, and end with post-structuralist feminist scholars views on gender/sex. In this, we focus on the impact of colonialism, capitalism, and institutionalized religion.

Jan "Amo" Behrens (they/them) is a PhD researcher at the University of Groningen working on their project Pink, Purple, Powder: Substance Use in Dutch Queer Youth for inclusion, transformation, and escapism. A multidisciplinary, mixed methods project incorporating narco-feminist theory, critical queer theory, post-structuralism, and intersectional theory.

Required reading: Chapter 3 in White Innocence

Week 2 (January 22): Sexual selection, gender, and ménages à trois in fungi

From: Duur Aneen

Sexual selection theory in evolution is based on the distinction between males and females, defined by different investment in offspring. This difference leads to the prediction that males compete for matings, while females are choosy. I will discuss how this binary view of the sexes has influenced our view on gender, which is more broadly defined than sexes as 'the socially constructed roles, behaviors, expressions and identities of girls, women, boys, men, and gender diverse people'. To illustrate my presentation, I will use examples from fungi, whose sex life is obscure and deviates from that of other familiar organisms. Sexual exchange in fungi is not mediated through 'private parts', but through merger of two entire individuals, which fertilize each other. The resulting fertilized individual can continue to engage in 'extramarital affairs' with other individuals. Such 'ménages à trois' are impossible for diploid animals or plants.

Duur K. Aneen is a professor in evolutionary biology who studies the evolution of cooperation, using fungi as experimental model system. He is also interested in the interaction between science and world view.

Require readings:

Aneen, D., Beekman, M., & Kokko, H. (2016). Weird sex: the underappreciated diversity of sexual reproduction. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 371(1706), 20160262.

Week 3 (February 12): Sex-reversal, intersex, homosocial and homosexual relation

From: Lise Gatti

This week, we will explore the concepts of queer biology, delving into topics such as intersex variations, same-sex relationships, and sex reversal. We will examine examples like the European eel, which develops its sexual organs only at the final stage of life before breeding or exploring the thousands of species having homosocial and homosexual relationship. We will look at organisms capable of changing sex, either once or multiple times, depending on environmental conditions, like the Blue wrasses which can undergo sex reversal from female to male in response to social cues. And lastly, we will consider how sexual pleasure is widespread across many species. These notions will be discussed and illustrated through case studies and short films. Together, we will create space to reflect on how these diverse reproductive mechanisms challenge the binary understanding of sex in both human and non-human animals.

Required readings:

Scientists explore the evolution of animal homosexuality; Juanita Bawagan

<https://www.bbcearth.com/news/fish-are-the-sex-switching-masters-of-the-animal-kingdom>

Week 4: Queer nature guided walk

From: Ania Ektate

In this session, we will venture into nature to explore and uncover the inherent queerness present in the species around us. By observing fungi, plants, trees, and invertebrates, we will engage with organisms that embody and advocate for sexual fluidity and non-binary reproductive mechanisms.

Ania Ektate (she/they) is an intersectional environmentalist, community weaver and artist. She creates spaces for humans to weave new relations with the more-than-human, through meditation, outdoor immersions, storytelling, and sharing circles. They take inspiration from lenses such as Spiritual Ecology, The Work that Reconnects, Decolonialism, Mindfulness, Somatics, Queer Ecology and more. Ania is most happy when she can share her love for the outdoors, inviting people on walks, making fire together, or simply being in awe of the ecologies around and within us.

Week 5:

From: Clarinde Wesselink

Lichens led me to find an intimate relationship with the surfaces in cityscapes as landscapes. I was absorbed by the intricate ways they anchor themselves to shrubs, stones, bricks, concrete and limestone. Their diverse strategies are a testament to life's unceasing invention, making worlds together with the materials they inhabit.

By observing how lichens contact their surroundings, I began to reflect on how I, too, interact with the world. Writing became a tool to understand these subtle differences, language as a roadmap for the body. Because every word can be felt in the body.

This workshop is an invitation. To experiment. To notice. To expand how we connect with the world, with others and with ourselves through touch. We often think with words. But what happens when we shift attention to the skin, to the space between two bodies? Can touch become its own kind of language?

Together we will explore exercises that emerged from my ongoing fascination, obsession and love for lichens, beings who know how to touch the places they inhabit in countless and

fascinating ways. It's simple. It's open. It's playful. And it's serious too, because the ways we touch are never neutral. They shape how we relate, how we care and how we live together.

Before the workshop, I invite you to read the introduction of *Do Glaciers Listen?* by Julie Cruikshank. Please also bring with you a phenomenon, being, plant or object, something more than human that you came across during your studies. Choose intuitively. Bring it as a printed photograph, not on your phone but physically printed on paper.

This workshop is open to everyone. If you have any questions beforehand, feel free to write to info@clarindewesselink.com.

Clarinde's work is a disruption, a call to break the systems that structure our perceptions, temporal experiences, and bodies. At the same time, it is a coming together, a gathering of forces and sensory experiences. As a choreographer, dancer, and visual artist, she explores connectedness as a lived practice. By mobilizing Indigenous knowledge and life frameworks, in which kinship and reciprocity shape reality, her work transcends anthropocentric boundaries and questions deeply rooted divisions between mind and body, and between humans and other beings.

Through her dance practice, she approaches sensory awareness and micro-reactions as epistemological sources. These experiences extend into a collective field in which humans, other beings, and phenomena interact and respond to one another. This hybrid field functions as an ecology of attention, perception, and reciprocity, in which the human is only one actor within a more-than-human network. Within this context, her work invites to dismantle the hegemony of control and to explore a world in which connection is a continuous, tangible presence.

Week 6: Final Presentation and game playing.

On the final evening of the course, we will gather together one last time to present and enjoy the group creative assignments. Together we will create a playful evening full of imagination and inspiration and celebrate the things we have learned (and unlearned) together during this course.