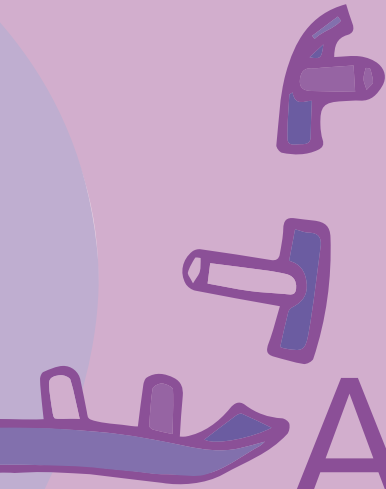


11TH LIFE SCIENCE SYMPOSIUM



# ALTERING EVOLUTION

TAKING THE FUTURE IN OUR HANDS

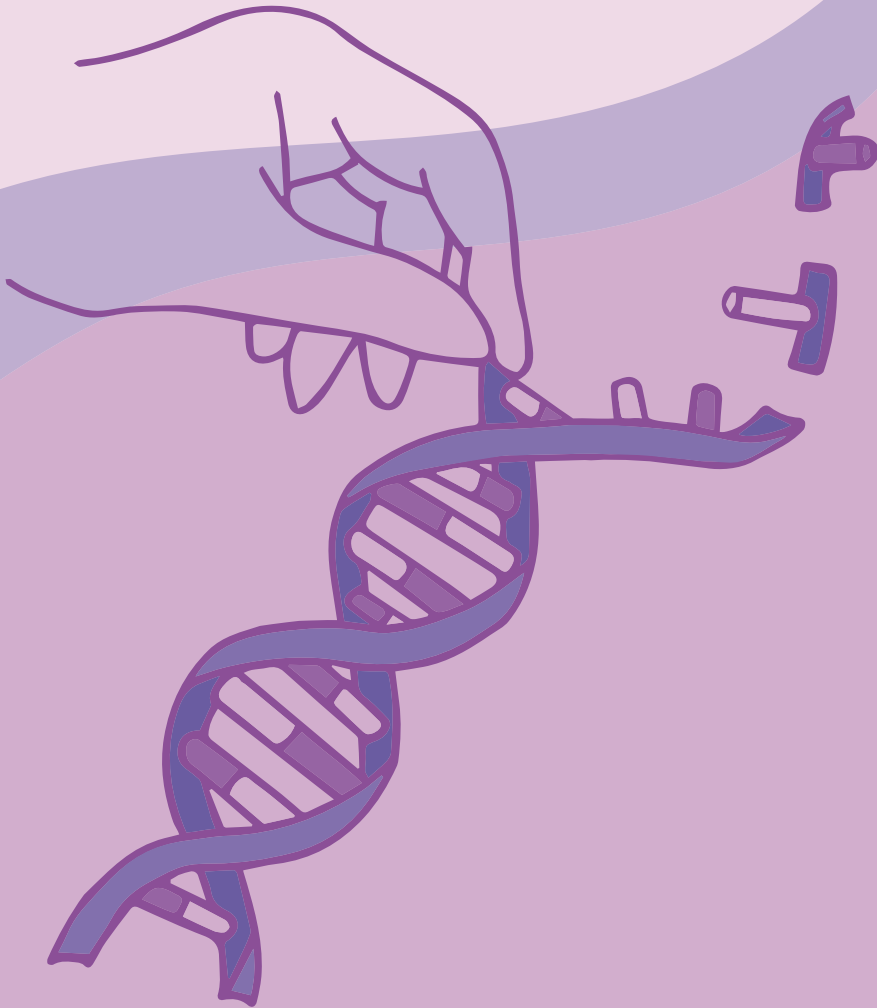
PROGRAMME BOOKLET

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14 MAY 2024  
THEATER DE VESTE  
DELFT

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## LIEKE VAN DER PLAS

*Chairwoman of the Symposium Committee*

Dear Symposium attendee,

I would like to wish you a warm welcome to the 11th edition of the Life Science Symposium 'Altering Evolution: Taking The Future Into Our Hands'. As the chairwoman of the Symposium Committee, I'm proud to see the two years of hard work of the committee come to fruition. The organization of this event all started with choosing a theme and hand-drawing drafts for the logo, but rapidly expanded into a complex array of tasks, like arranging speakers, venue selection, merchandisedesign, and numerous other details.



We are proud to present to you our programme for today which features top-of-the-field speakers such as leading expert in photosynthesis research Roberta Croce, science communication expert in evolution Bas Haring and co-founder of the protein engineering company Harmen van Rossum. We will also hear Thijs Ettema present about the origin of complex life, Ronald van Ree will explore the topic of IgE antibodies and allergies throughout evolution and Rinke van Tatenhove-Pel will present on altering evolution with use of micro-compartmented systems. Furthermore, René van Olsthoorn will dive into the topic of virus evolution and Marieke Glazenburg will present work on cell polarization in the evolution of yeast.

Besides all the exciting talks on evolution, Genscript, Cradle and BIOKÉ will be present at stands throughout the foyer. You can visit their stands to get to know these companies and see what they have to offer you. Following all the enlightening sessions on evolution, I invite you to join us for networking drinks where you can connect with fellow attendees and continue the conversations sparked by the topics of the various talks.

We hope that today will be an exciting and informative day for each of you. May this day be full of new discoveries, meaningful connections and eye-opening insights that will drive us forward in discovering evolution and taking it into our own hands!

## LOTTE RUTTEN

*Chairwoman of S.A. LIFE*

Dear visitors,

Welcome to the 11th Life Science Symposium organised by the Symposium Committee of Study Association LIFE. S.A. LIFE aspires to organise a symposium of high quality with a topic related to the field of Life Science & Technology every other year. Today is the result of two years of hard work from the committee and we are very proud to share this with you. The theme of today will be:



*'Altering evolution – Taking the future in our hands'*

In our modern era, the concept of altering evolution has taken on new significance. With advancements in technology, genetics, and environmental science, humans now have the ability to influence the course of evolution itself. The committee has invited speakers with different expertises in the field to give you a broad perspective on how the field of life sciences contributes to the modification of the evolution process.

The committee has been working really hard to organize this day for you. We hope you will be inspired!

Enjoy the symposium!

Lotte Rutten  
*h.t. Praeses of S.A. LIFE*

### STUDY ASSOCIATION LIFE

Study Association LIFE was founded on the 9th of September in 1999, and represents all Life Science & Technology (LST) students at Leiden University and Delft University of Technology. The LST bachelor is a broad joint degree programme shared between both universities, and covers the inner workings of the cell and its components as well as their biotechnological application. Both universities offer their own LST master programme focussing on (medical) cell biology and (industrial) biotechnology, respectively.

LIFE currently has over 750 members and the student board oversees more than 30 committees comprised of enthusiastic students. These committees organize a host of social, educational, and career oriented activities throughout the year, such as company visits, a beer brewing festival, lunch lectures, drinks, study trips, parties and more. Additionally, LIFE publishes a yearbook and quarterly magazine, and offers students discounts on lab coats and textbooks. And of course, every other year the Life Science Symposium is organized.



Founded in 1999



850 Graduates



750 Students



Life Science &  
Technology

### SYMPOSIUM COMMITTEE

The symposium committee who organises this edition of the Life Science Symposium consists of the following students:

Lieke van der Plas

*Chairwoman*

Jayā Jankipersad

*Secretary*

Leon Schipper

*Treasurer*

Isabella de Jonge

*External Affairs*

Friso van Hessen

*External Affairs*

Eline van Hasselt

*Promotion*

Lotte Rutten

*General Affairs and Support*

Elise Don

*General Affairs and Support*



From left to right: Elise Don, Eline van Hasselt, Isabella de Jonge, Jayā Jankipersad, Lieke van der Plas, Leon Schipper, Friso van Hessen, Lotte Rutten.

## PROGRAMME

- 9:00 - Entrance
- 9:30 - Opening
- 9:45 - **Prof. dr. Bas Haring** *Introduction to evolution*
- 10:20 - **Dr. Rene Olsthoorn** *RNA bacteriophages to predict viral evolution*
- 11:00 - Coffee Break
- 11:25 - **Dr. Harmen van Rossum** *Generative AI for better proteins*
- 12:05 - **Prof. dr. ir. Thijs Ettema** *The origin of complex life*
- 12:45 - Lunch Break
- 13:35 - **Marieke Glazenburg** *Yeast polarization in evolution*
- 14:20 - **Dr. ir. Rinke van Tatenhove-Pel** *Altering evolution with the use of micro-compartmented systems*
- 15:00 - Coffee Break
- 15:25 - **Prof. dr. Ronald van Ree** *IgE antibodies in evolution: from combatting parasites to causing allergic diseases*
- 16:05 - **Prof. dr. Roberta Croce** *Improving photosynthesis to improve crop productivity*
- 16:45 - Closing Ceremony
- 17:00 - Drinks

CEES HARINGA &  
CHARLOTTE KOSTER*Co-Chairs of the Symposium*

Dr. ir. C. Haringa  
Assistant Professor Bioprocess Engineering



Dr. ir. C.C. Koster  
Postdoc researcher

Cees Haringa and Charlotte Koster both began their academic journey at TU Delft, with Cees focusing on Molecular Science & Technology and Charlotte on Life Science & Technology. Both pursued their PhDs at TU Delft and emerged as experts in their respective fields. They also have experience serving on the boards of their study associations and currently have a strong connection with S.A. LIFE. While altering evolution isn't their primary area of expertise, they possess significant knowledge of engineering in the life sciences that is related to this subject. Moreover, they are skilled researchers and speakers, making them excellent choices to chair the symposium. We, as the organizing committee, were enthusiastic when they gladly accepted our invitation to chair the symposium. We are very confident that the day is left in good hands with them!

## Prof. dr. Bas Haring

*Professor of Public Understanding of Science, Leiden University*



Prof. dr. S. Haring  
Professor of Public Understanding of Science

Bas Haring is professor of Public Understanding of Science at the University of Leiden and founder of the master's program in media technology at LIACS. He also gives several lectures, including bioethics, scientific narration and visualisation on explaining science through images and stories and on being a scientist on the essence of science and scientific integrity. In addition to his academic roles, he is the author of several books, such as "Kaas & de evolutietheorie". Haring will kick off the symposium with an introductory talk on evolution and evolution in science communication.

## Dr. Rene Olsthoorn

*Assistant Professor in viral RNA structures, Leiden University*

Rene Olsthoorn is an Assistant Professor in Viral RNA Structures at the University of Leiden. His research focuses on RNA viruses and viral RNA structures and has largely contributed to the field of virology. He will speak about the alpha and omega of virus evolution and finding a way to possibly predict viral evolution using RNA bacteriophages as a model system.



Dr. R.R.C.L. Olsthoorn  
Assistant Professor viral RNA structures

## Dr. Harmen van Rossum

*Co-Founder of Cradle Bio, Delft*

Harmen van Rossum is one of the co-founders of Cradle Bio. Cradle offers a software platform to help its users build better proteins using generative AI. Their generative machine learning models accelerate multi-property optimization of proteins for properties including stability, binding, efficacy, activity, and expression. As their laboratory is very important to their success, van Rossum will dive into the workflows Cradle has developed to build and test 100s of proteins per round in a mere couple of weeks.



Dr. H. van Rossum  
Co-Founder Cradle Bio

## Prof. dr. ir. Thijs Ettema

*Head of the Laboratory of Microbiology, Wageningen University & Research*



Prof. dr. ir. T.J.G. Ettema  
Head of The Laboratory of Microbiology

Thijs Ettema is an evolutionary microbiologist at Wageningen University & Research, where he heads the Laboratory of Microbiology. His research involves studying evolutionary transitions, including the origin of complex cells types. His research group discovered a new group of archaea, providing new, compelling evidence that complex cellular life evolved from an archaeal ancestor that already contained several eukaryotic traits. He will speak about his research on evolutionary microbiology and the origin of complex life.

## Marieke Glazenburg

*PhD Candidate Bionanoscience, TU Delft*



Marieke Glazenburg  
PhD Candidate Bionanoscience, TU Delft

Marieke Glazenburg is a PhD candidate in the research group of Dr. Liedewij Laan. The Laan lab is located in the Department of Bionanoscience, part of the Kavli Institute of Nanoscience at the Delft University of Technology, and pioneers the emerging field of evolutionary cell biophysics. Glazenburg will speak on using budding yeast as a model system to study polarization, an essential step in the cell's life cycle, in the light of evolution.

## Dr. ir. Rinke van Tatenhove-Pel

*Assistant professor Industrial Microbiology, TU Delft*

Rinke van Tatenhove-Pel is assistant professor at TU Delft. She is mainly interested in interactions between cells, strains and species, and high-throughput screening and selection systems. Her research combines defined synthetic consortia, predictive models and laboratory experiments, to gain knowledge and insight that can be used to improve biotechnological processes. She will speak about her research on micro-compartmented systems in evolution strategies and its use in strain selection.



Dr. ir. R. van Tatenhove-Pel  
Assistant Professor Industrial Microbiology

## Prof. dr. Ronald van Ree

*Professor of Molecular and Translational Allergology, Amsterdam Academic Medical Center*

Ronald van Ree is an extraordinary professor of Molecular and Translational Allergology at the Academic Medical Center in Amsterdam. He also heads the Laboratory for Allergy Research. His research focuses on the origin and functioning of allergies and the antibody response. He will be speaking about the evolution of allergic diseases and the role of IgE antibodies in these diseases. What are the opportunities to push back the allergy epidemic? Can we alter evolution and abolish IgE?



Prof. dr. R. van Ree  
Professor of Molecular and Translational Allergology

## Prof. dr. Roberta Croce

*Professor in Biophysics of Photosynthesis, Vrije Universiteit Amsterdam*



Prof. dr. R. Croce  
Professor in Biophysics of Photosynthesis

Roberta Croce is a professor and leads the Biophysics of Photosynthesis and Energy group at the VU. She also is head of the group at the Department of Physics of the Vrije Universiteit in Amsterdam. Here, she conducts research on the molecular basis of how light can be converted into energy in photosynthesis. The aim is to improve effectiveness and lay the foundation for artificial photosynthesis. She will talk about improving the efficiency of photosynthesis to improve crop producibility.

### BOARD OF RECOMMENDATION

The Board of Recommendation advises the committee on speakers, sponsors and general affairs. The board consists of eleven members, either related to the city or university of Leiden or Delft, or with a profession in the Life Sciences.

- **Prof. dr. ir. Tim van der Hagen**  
*Rector Magnificus, Delft University of Technology*
- **Prof. dr. ir. Hester Bijl**  
*Rector Magnificus, Leiden University*
- **Peter van der Velden**  
*Mayor of Leiden*
- **Prof. dr. M. Ubbink**  
*Scientific Director Leiden Institute of Chemistry*
- **Dr. Marco van Eijk**  
*Director of Education, BSc Life Science & Technology, Delft University of Technology & Leiden University*

### BOARD OF RECOMMENDATION

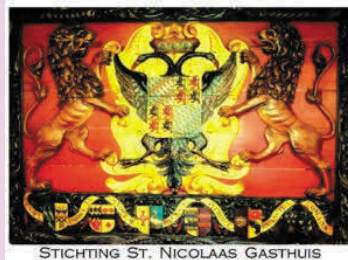
- **Prof. dr. Jack Pronk**  
*Professor in Industrial Microbiology, Head of the Biotechnology Department at Delft University of Technology*
- **Prof. dr. ir. Pascale Daran-Lapujade**  
*Professor in Metabolic Engineering, Delft University of Technology*
- **Prof. dr. Sander van Kasteren**  
*Associate Professor Chemical Immunology, Leiden University*
- **Dr. Marta Artola**  
*Assistant Professor Chemical Biology, Leiden University*
- **Dr. ir. Charlotte Koster**  
*Postdoc Researcher, Wageningen University & Research*
- **Esther Peters**  
*Director Leiden Bio Science Park*



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Think big about life at the smallest scale



Department of Biotechnology



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Leids  
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BioTech Delft  
POSTGRADUATE EDUCATION

### ACKNOWLEDGEMENTS

*The Symposium Committee would like to thank the following persons, companies, funds and other partners for their contributions to the 10th Life Science Symposium:*

#### **SPEAKERS**

*Prof. dr. Bas Haring  
Dr. Rene Olsthoorn  
Dr. Harmen van Rossum  
Prof. dr. ir. Thijs Ettema  
Marieke Glazenburg  
Dr. ir. Rinke van Tatenhove-Pel  
Prof. dr. Roberta Croce  
Prof. dr. Ronald van Ree*

#### **BACK-UP SPEAKER**

*Dr. Fokko Wieringa  
Prof. dr. Jack Pronk  
Dr. Marta Artola*

#### **CO-CHAIRS**

*Dr. ir. Cees Haringa  
Dr. ir. Charlotte Koster*

#### **BOARD OF RECOMMENDATION**

*Prof. dr. ir. Tim van der Hagen  
Prof. dr.ir. Hester Bijl  
Peter van der Velden  
Prof. dr. Marcellus Ubbink  
Dr. Marco van Eijk*

### ACKNOWLEDGEMENTS

*Prof. dr. Jack Pronk  
Prof. dr. Pascale Daran-Lapujade  
Prof. dr. Sander van Kasteren  
Dr. Marta Artola  
Dr. ir. Charlotte Koster  
Esther Peters*

#### **COMPANIES**

*Cradle Bio*

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TU Delft Department of Bionanoscience  
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