



Advances in  
Cell-Based Screening  
IN DRUG DISCOVERY  
2024



# ADVANCES IN CELL-BASED SCREENING IN DRUG DISCOVERY 2024

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15 - 16 MAY 2024  
ASTRAZENECA, GOTHENBURG

#ELRIG

#CBS2024

# WELCOME TO ADVANCES IN CELL-BASED SCREENING IN DRUG DISCOVERY 2024

Welcome to the fifth ELRIG meeting on 'Advances in cell-based screening in drug discovery'.

Our ambition is to create an open and inspiring environment for networking between biologists and chemists, discussing the latest advancements and best practices in cell assay screening and their application for target identification, target validation and compound optimisation purposes.

This year we are aligned across two themes: on day 1 we will be exploring 'the journey of scale: from single cells to complex models' and on day 2 'the journey of translation: improving endpoints and maximising data from cell-based screens.' Our keynote speakers, Gitte Neubauer (VP, Omics Technologies & Head of Cellzome, GSK) and Spencer Shorte (Scientific Director, Center for Technological Resources and Research, Institut Pasteur) will be providing their insights in these fields and we are grateful for their time and support.

We would like to thank our track chairs: Sapna Desai (GSK), Cecilia Boreström (AstraZeneca), Brinton Seashore-Ludlow (Karolinska Institutet) and Itedale Namro (CELLINK). The meeting could not happen without their help and that of the ELRIG Operations team.

We hope you will enjoy the conference, take all opportunities to browse the posters, learn about new products and technologies in the exhibition hall, go on the 'Amazing Journey' site tours (please book) and listen to our Early Career Professionals talk on 'navigating career challenges to unlock success'. We look forward to meeting you there!

## The Conference Directors

## CONFERENCE DIRECTORS



Fredrik Edfelt,  
AstraZeneca



Sapna Desai,  
GSK



Sam Barichiev,  
AstraZeneca



James Robinson,  
AstraZeneca



Brinton Seashore-  
Ludlow,  
Karolinska Institutet

## KEYNOTE SPEAKERS

Gitte Neubauer is VP, Omics Technologies & Head of Cellzome. Gitte studied biochemistry at Imperial College, London, and completed her PhD thesis at the European Molecular Biology Laboratory in Heidelberg in functional proteomics. As scientific founder of Cellzome, Gitte transferred her academic work into the company, built and ran different technology platforms and drug discovery programs before she took over as Head of Cellzome upon acquisition of the company by GSK in 2012. She is now leading a global department of ~60 people with deep technical expertise in all omics technologies, integrated with biologists and biochemists.



Gitte Neubauer,  
GSK

Spencer Shorte is expert in development of dynamic cell and tissue imaging techniques in living systems and author to over one hundred research articles, learned reviews and patents. Recipient of the French engineer of the year award 2005; joint recipient to the 2015 Prix Thérèse Lebrasseur (Fondation de France) he was awarded the French foreign ministry's silver medal of honor in 2020 for his role establishing international clinical trials searching for therapeutics during the COVID pandemic. After serving as scientific director to Institut Pasteur Korea (2018-2022), he is now Director to the Center for Technology Research & Resources at Institut Pasteur (Paris). Founding President to the European non-profit association Core Technologies for Life Sciences, and co-founder to the company Stratocore serving more than one-hundred-thousand scientists in over two-hundred research organizations worldwide, he is a stalwart advocate to the value of core facilities and shared resources in life sciences.



Spencer Shorte,  
Institut Pasteur

# CONFERENCE OVERVIEW

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## DAY 1 - THE JOURNEY OF SCALE: FROM SINGLE CELLS TO COMPLEX MODELS

**Morning Session - The power of the single cell - how microfluidics & 'omics enable a step change in data generation from individual cells**

Advancements in the ability to study single cells are intrinsically linked to parallel developments in microfluidic and omics technologies. Microfluidic devices enable precision control over cellular environments, while transcriptional, proteomic and metabolomic data provide comprehensive views across cellular components. The power of these technologies combined, reveals intricate details about cellular processes, uncovers rare cell types and aims to understand the dynamics of biological systems at a single-cell resolution, impacting multiple fields of research where unmasking heterogeneity among cell populations plays a crucial role.

**Afternoon Session - The promise of advanced cell models - the path to 'business as usual', and the paradigm shift to NAMs (new approach methodologies/non-animal models)**

Understanding the landscape of emerging drug targets, candidate medicines and new modalities within a complex cellular environment is critical to modern research. Academics and industry scientists are increasingly turning to advanced preclinical models in order to identify and validate new biological hypotheses, as well as mitigate the risks of clinical efficacy- and safety-based attrition for new medicines. This session will highlight some of the most exciting preclinical model systems at the forefront of this wave of innovation.

## DAY 2 - THE JOURNEY OF TRANSLATION: IMPROVING END-POINTS AND ADDING TEXTURE IN CELL-BASED SCREENS

**Morning Session - Maximising outputs – how next-generation endpoints, and the use of biosensors are feeding a new wave of multiparametric data generation**

A major challenge in drug discovery value chain is our current ability to predict in vivo efficacy and safety of candidate therapeutics. The use of advanced model systems, such as organoids, primary cell cultures, and multi-cellular spheroids, brings the promise of improved disease relevance and ability to recapitulate in vivo response to treatment. However, these come with a need to measure treatment response in multiple cell types and contexts. Next, generation endpoints address this need, providing new tools to quantify treatment response, monitor changes over time, and enable multiple endpoints from complex models. Advances in these techniques and methods are highlighted in this track including the use of multiparametric data and biosensors to capture complex cellular mechanisms.

**Afternoon Session - New Technologies - a look under the hood of new leading technological platforms and how they are revolutionising drug discovery**

There is a constant need to develop drugs faster for treating human diseases and thus technology developers have for years invested in developing "the next big thing" that can support the need for efficiency in drug discovery. Automation in drug discovery, not only allows faster data generation, but contributes to better decision making based on consistent data and reducing the resources needed. Artificial Intelligence, machine learning, automation and robotics are only a few examples of technologies that can accelerate and transform drug discovery processes. This session will introduce a few examples of novel technologies and automation that is being employed in cell based screening.

### TRACK CHAIRS



Sapna Desai,  
GSK



Cecilia Boreström,  
AstraZeneca



Brinton Seashore-  
Ludlow,  
Karolinska Institutet



Itedale Namro,  
CELLINK

# DAY 1 - TRACK SUMMARY

## THE JOURNEY OF SCALE: FROM SINGLE CELLS TO COMPLEX MODELS

15 May

Auditorium Alpha

08.15 - 09:00	Registration
09:00 - 09:05	ELRIG Welcome - Melanie Leveridge, ELRIG Chair
09:05 - 09:15	Conference Welcome and Keynote Introduction - Fredrik Edfeldt, AstraZeneca
09:15 - 10:00	Keynote - <b>Revolution in resolution: single cell technologies in drug discovery</b> - Gitte Neubauer, GSK
10:00 - 10:40	Refreshment break
10:40 - 10:45	Track introduction - <b>The power of the single cell - how microfluidics &amp; 'omics enable a step change in data generation from individual cells</b> - Sapna Desai, GSK
10:45 - 11:15	<b>High throughput target confirmation by arrayed single cell transcriptomics to verify Treg differentiation</b> - Christine Rummel, GSK
11.15 - 11:20	Flash poster presentation
11:20 - 11:50	<b>The Naked Truth: Assessing the power and limitations of label-free transmitted light features for cell type and state classification</b> - Andrew Filby, University of Newcastle
11:50 - 11:55	Technology Spotlight - Scale Biosciences
11:55 - 12:00	Technology Spotlight - Inventia
12:00 - 12:30	<b>Flow-based high content intracellular phenotypic screening platform using Ghost Cytometry and DNA barcoding</b> - Prabhjoat Singh Chana, ThinkCyte
12:30 - 13:45	Refreshment break
13:45 - 13:50	Track introduction - <b>The promise of advanced cell models - the path to 'business as usual', and the paradigm shift to NAMs (new approach methodologies/non-animal models)</b> - Cecilia Boreström, AstraZeneca
13:50 - 14:20	<b>Defining trigger pathways and mechanisms regulating 4D vascular remodelling in pulmonary arterial hypertension</b> - Amer Rana, University of East Anglia
14:20 - 14:25	Technology Spotlight - SUN Bioscience SA
14:25 - 14:30	Flash poster presentation
14:30 - 14:45	Industry Insider - WuXi AppTec
14:45 - 15:30	Refreshment break
15:30 - 16:00	<b>Drug discovery with human brain biology</b> - Josh Bagley, a:head bio AG
16:00 - 16:30	Conference Partner - <b>title TBC</b> - Beckman Coulter
16:30 - 17:00	<b>Title TBC</b> - Madhu Nag, InSphero
17:00 - 17:45	Early career professionals - <b>Navigating career challenges to unlock success</b> - Dieudonné Che, AstraZeneca
17:00 - 19:00	<b>Networking</b> Amazing Journey - a tour of AstraZeneca R&D facility - 17:00 - 17:45 Amazing Journey - a tour of AstraZeneca R&D facility - 17:45 - 18:30 Networking in the Exhibition space including Poster Session 18:00 - 18:30

# DAY 2 - TRACK SUMMARY

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## THE JOURNEY OF TRANSLATION: IMPROVING END-POINTS AND ADDING TEXTURE IN CELL-BASED SCREENS

16 May  
Auditorium Alpha

08.15 - 09:00	Registration
09:00 - 09:15	Conference Welcome, Poster Prize and Keynote Introduction - Sam Barichev, AstraZeneca
09:15 - 10:00	Keynote - <b>Core facilities harnessing data “perennity” in Life Sciences</b> - Spencer Short, Institut Pasteur
10:00 - 10:15	Industry Insider - Collaborative Drug Discovery
10:15 - 10:45	Refreshment break
10:45 - 10:50	Track introduction - <b>Maximising outputs – how next-generation endpoints, and the use of biosensor are feeding a new wave of multiparametric data generation</b> - Brinton Seashore-Ludlow, Karolinska Institutet
10:50 - 11:20	<b>Biophysical sensors in studies on pharmacologically-dark G protein-coupled receptors</b> - Pawel Kozielowicz, Karolinska Institutet
11:20 - 11:25	Flash poster presentation
11:25 - 11:30	Technology Spotlight - Cryologyx
11:30 - 12:00	<b>The use of patient-derived tumor scaffolds as in vivo-like 3D models with multi-analyte readouts</b> - Anders Ståhlberg, University of Gothenburg
12:00 - 12:05	Technology Spotlight - Thermo Electron LED GmbH
12:05 - 12:35	<b>Phenotypic screening of organoid models for drug discovery</b> - Kim Boonekamp, DeutschesKrebsforschungszentrum
12:35 - 12:40	Technology Spotlight – Bio-Rad
12:40 - 13:40	Refreshment break
13:40 - 13:45	Track introduction - <b>New Technologies - a look under the hood of new leading technological platforms and how they are revolutionising drug discovery</b> - Itedale Namro, CELLINK
13:45 - 14:15	<b>Emerging Technologies for sustainable pharmaceutical &amp; medical devices manufacturing</b> - Dimitrios Lamprou, Queen’s University Belfast
14:15 - 14:20	Flash poster presentation
14:20 - 14:35	Industry Insider - Araceli Biosciences
14:35 - 15:00	Refreshment break
15:00 - 15:30	<b>Artificial Intelligence in Drug Discovery, With Examples From Cellular Screening: Current Status, Successes, and Pitfalls</b> - Andreas Bender, Fraunhofer
15:30 - 16:00	<b>Cell High Throughput Screening: Workflows, challenges and future direction</b> - Mercedes Vazquez-Chantada, AstraZeneca

# FLOOR PLAN



CONFERENCE PARTNER



Booths 25 & 26

## INDUSTRY INSIDERS



Booth 5



Booth 30



Booth 6

## TECHNOLOGY SPOTLIGHTS



Booth 32



Booth 34



Booth 3



Booth 27

SUNBIOSCIENCE

Booth 4



Booth 17

## SPONSORS



Booth 10



Booth 31



Booth 8



Booth 21



Booth 20



Booth 7



Booth 22



Booths 23 & 24



Booth 11



Booth 33



Booth 18



Booth 9



Booth 12



Booth 29



Booth 28



Booth 1



Booth 16



Booth 35



Booth 2



Booth 19



# INFORMATION FOR PARTICIPANTS

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To help keep a safe space, we require the following from all attendees:

Pre-registration for the meeting is essential. At ELRIG we want all our meeting participants to enjoy, participate in and contribute to the event.

ELRIG does not accept harassment or intimidation of ELRIG participants in any form whether verbal, physical, or written (including on social media or by email).

Harassment includes, but is not limited to:

1. Offensive or unwanted conduct on the basis of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex or sexual orientation which has the purpose or effect of violating dignity or creating an intimidating, hostile or degrading environment.
2. Use of sexualised or other inappropriate images or unwelcome sexualised content, inappropriate physical contact, unwelcome sexual attention or stalking.
3. Sustained interruption of speakers or those asking questions.
4. Unwanted photography or filming.

Intimidation includes, but is not limited to:

1. Making threats.
2. Bullying.
3. Personal attacks.

Participants who do not adhere to these rules will be asked to stop and expected to comply immediately. Participants may be removed from any meeting at the discretion of ELRIG's management. If you are being harassed/intimidated, notice that someone else is being harassed/intimidated, or have any other concerns, please contact any of the ELRIG management team immediately. They will be able to step in to remove you or others from a chain of communication, if this is the preferred action, and can also facilitate a discussion or mediation. If you wish, you may also nominate someone else to support facilitating any mediation or as an observer to this process.

## ELRIG MOBILE APP

Download the free ELRIG app and access all our conference information, programme and more from your phone or tablet.

- View the event programme
- View presentation and poster abstracts
- View speaker profiles
- View the exhibitor guide
- View the delegate and exhibitor list
- Organise your day with your own favourites list
- Share your profile as vCard and QR Code and scan exhibitor QR code information tags
- Network – contact delegates, other exhibitors and speakers easily through opt-in directories and integration with Linked-In, Twitter and Facebook

Download our App... search for and install The Event App by EventsAir onto your mobile device, then use the Event App Code found in your email. For convenience, you can add the app to your device's home screen.



## CAR PARKING

Please use the PGN Conference centre entrance. Due to the ongoing construction work, please follow the orange signs marked AstraZeneca Personal Parking and give the registration number of the car to security.

## CLOAKROOM

Room Beta2 located in the Conference Centre entrance by the security team.

## WELLBEING ROOM

Room Delta located in the entrance corridor

## DISABLED & CHANGING FACILITIES

Please ask a member of the ELRIG team or security.

## WIFI

Please use the guest WiFi

## CORPORATE PARTNERS



## CAREERS PARTNERS



Visit us in the entrance corridor

## MEDIA PARTNERS



# UPCOMING EVENTS

## MAY

### Pint of Science Networking Event

Various, Europe | 13 – 15 May

### Advances in Cell-Based Screening

Gothenburg, SE | 15 – 16 May

## JUNE/JULY

### Careers Webinar – Beyond the Lab: Mental Health & Wellbeing

5 June

### Drug Discovery Forum

Frankfurt, DE | 11 June

### ELRIG's Summer Social

Cambridge, UK | 3 July

## SEPTEMBER

### Drug Discovery Forum

Edinburgh, UK | 12 September

### ECP Networking Event – Beyond the Lab: Innovation Skills to Boost your Career

Oxford, UK | 10 September

## OCTOBER

### Drug Discovery 2024

London, UK  
2 – 3 October

## NOVEMBER

### Protein Sciences in Drug Discovery

Cambridge, UK | 18 – 19 November

### Metabolic Disease Forum

Copenhagen, DK | 5 November

## DECEMBER

### ELRIG – SLAS Joint Networking Forum

London, UK | 3 December

### Drug Discovery Forum

Paris, FR | 3 December

## ABOUT ELRIG

ELRIG, a market-leading UK-based not-for-profit volunteer-led organisation, is dedicated to delivering inspiring events to the dynamic life science community.

Our roots were originally in the application of automation, robotics, and instrumentation in laboratories, although we continuously evolve to meet the sector's shifting needs.

With a global community of over 22,000 life science professionals across all levels, ELRIG remains committed to accessible and inclusive events. Participation at our conferences, forums and networking events is free and unrestricted, reflecting the rich diversity of our community, and enabling learning and collaboration across disciplines, academia, and biopharmaceutical organisations.

## STRATEGIC PILLARS



### EVENTS

- Best in class events
- Curated topical content
- Free to attend



### EQUALITY, DIVERSITY & INCLUSIVITY

- Accessible to all
- Promotes engagement and collaboration
- Celebrating diversity



### PRESENCE & AWARENESS

- Trusted brand
- Cross-community collaboration
- Growing digital presence



### SUSTAINABILITY

- Ethical and transparent
- Operational excellence
- Sustainable events