
RGANOS

Background

- ***Simula*** and ***UC Berkeley*** have had an ongoing scientific collaboration since 2017.
  - UC Berkeley developing advanced cardiac *in vitro* test methods
  - Simula has developed *in silico* methods to probe cardiac function

- ***Organos Inc*** is a commercial venture that has spun out of this collaboration, and aims to develop organ chip technology combined with advanced analysis algorithms for industrial applications.

Mission

Revolutionizing cardiac drug development

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Development / Funding Timeline

UC Berkeley/ Simula Collaboration

2017 2018 2019 2020 2021 2022

Peder Sæther grant
Small exploratory grant
50K USD
1 year

IdentiPhy
RCN Grant
24 mo, 8.5 MNOK

SIMBER
RCN Collaboration Grant
5 years

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Norwegian Branch Formed

Berkeley SkyDeck
Accelerator Program
100K USD

NIH
SBIR
1.6M USD
24 mo

CIRM
Trans4
1.2M USD
24 mo

NIH
SBIR
1.2M USD
24 mo

Cardiovascular Health – An Immense and Growing Problem

#1

Killer Worldwide

$900B

Social and economic burden globally

65M

Patients with heart failure

50% 5-year mortality

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Unmet Need for Cardiovascular Therapeutics

Lotensin® benazepril HCl

1991

NORVASC®

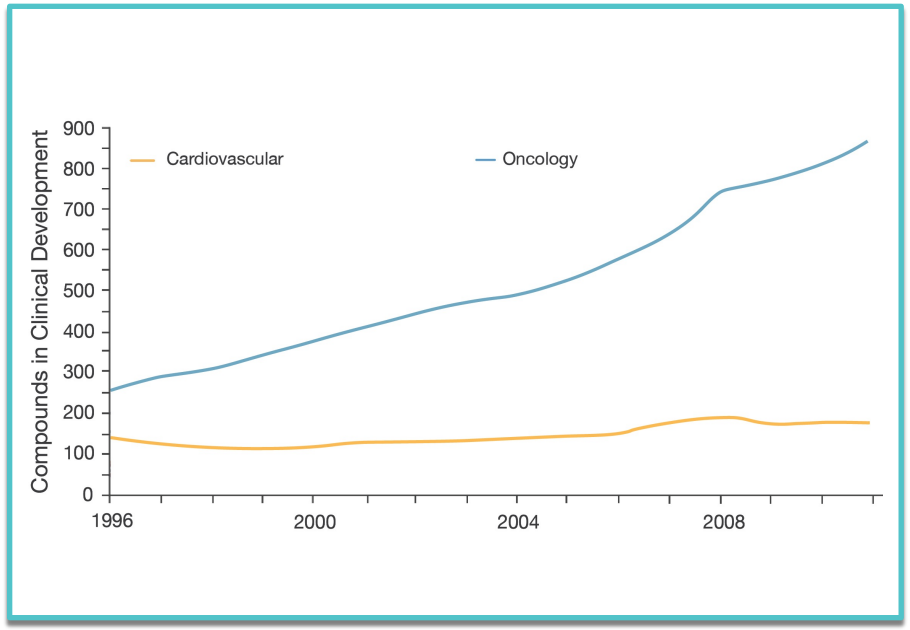
2009

Entresto™ (sacubitril/valsartan)

2015

CAMZYOS™ (mavacamten) 2.5, 5, 10, 15mg capsules

2022



Limited treatment options available

Insufficient ongoing innovation

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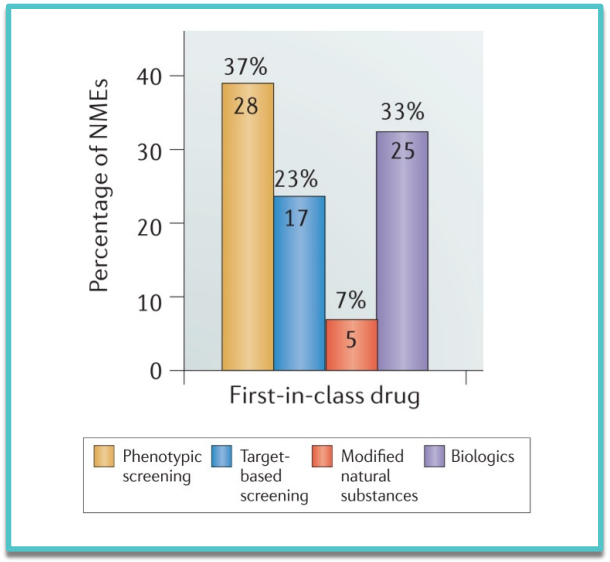
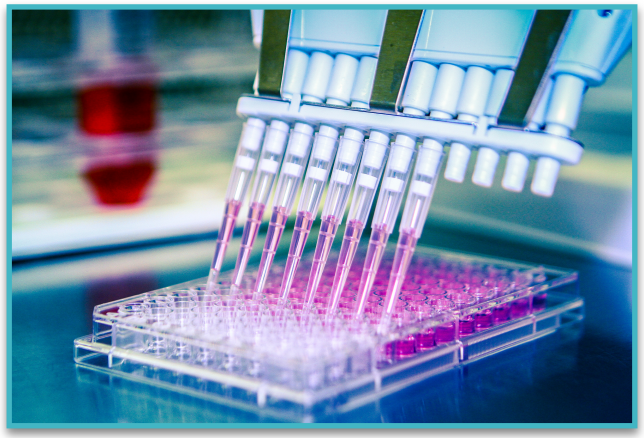
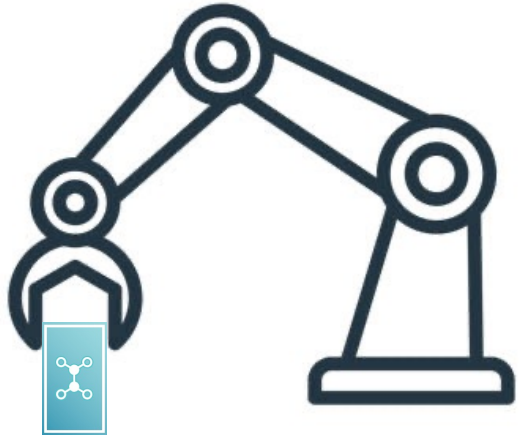
How to discover the next generation of cardiac drugs



Phenotypic screens essential



Current screens do not capture cardiac tissue-level phenotypes



Need for novel phenotypic HTS

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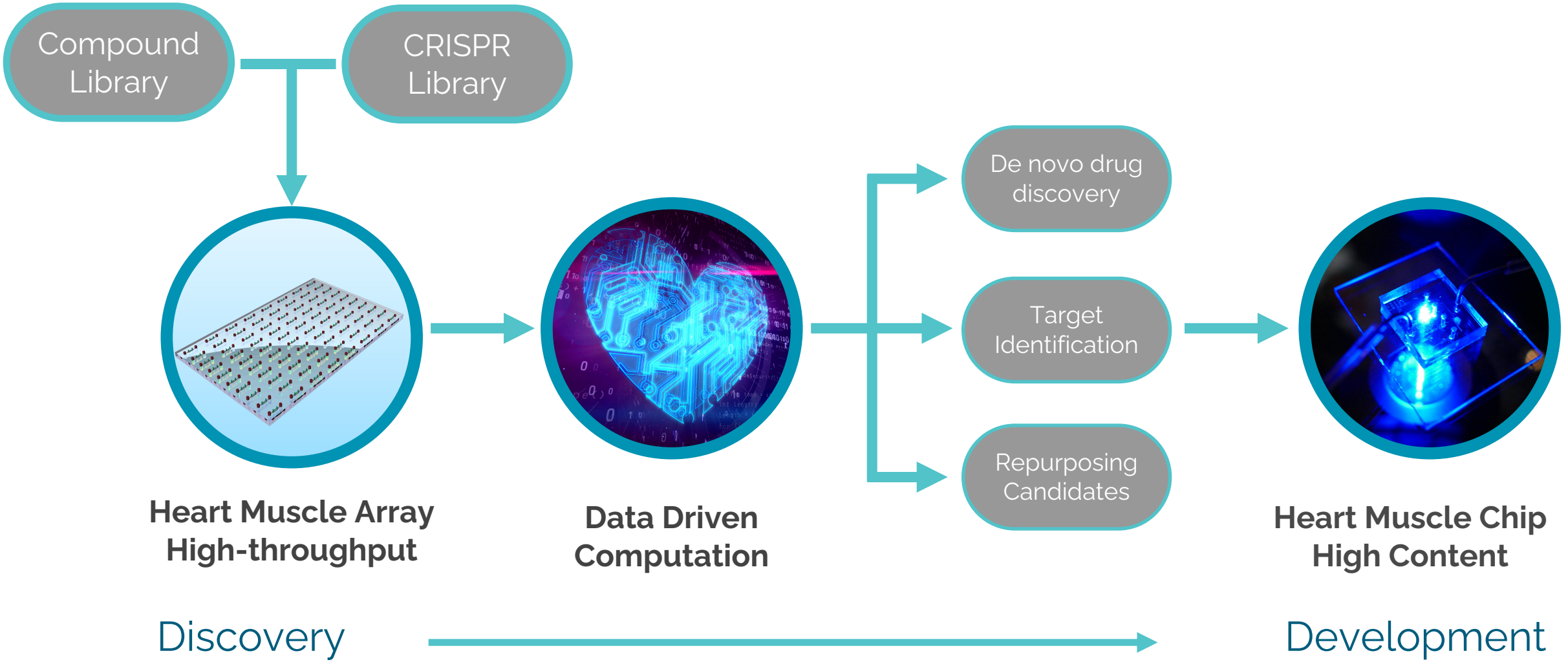
A New Pathway for Cardiac Drug Discovery and Development



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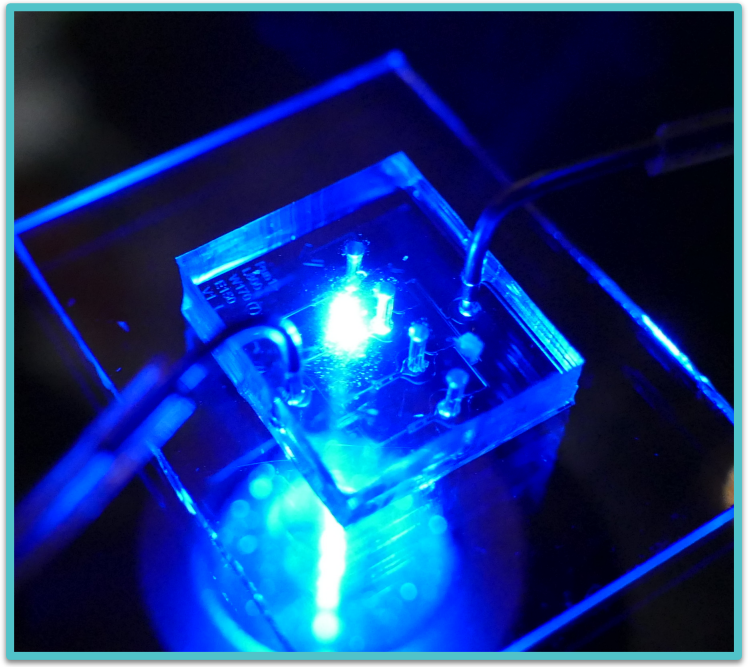
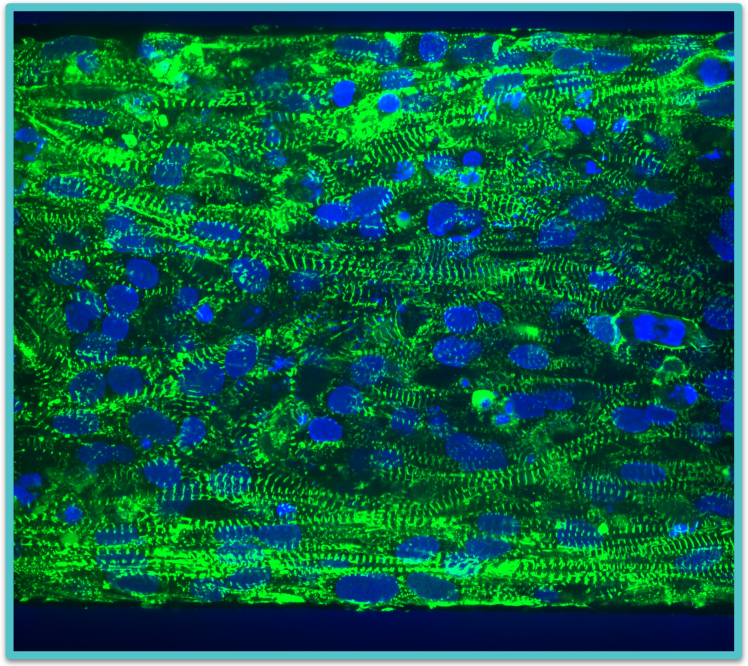
Organos - Phenotypic Screening with Human Cardiac Microtissues

Microfabrication



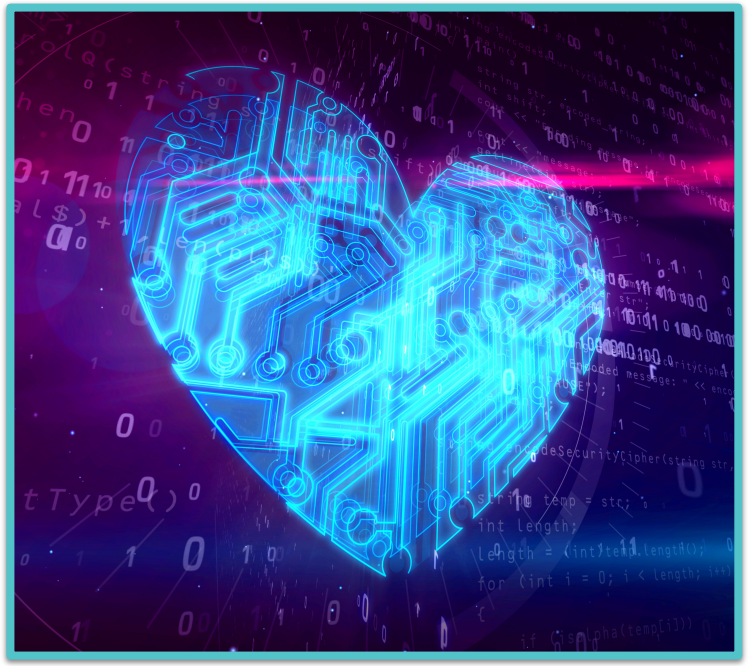
Miniaturized form factor amenable for HTS

Human Heart Muscle



Human tissue and human disease models

Computations



Enabling analysis of complex data readouts

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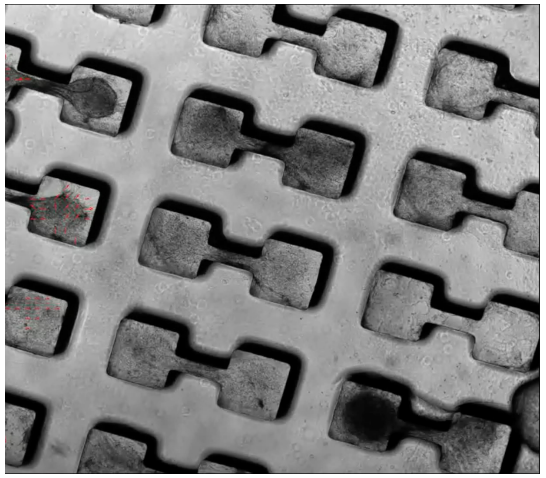
Organos - Harnessing the Power of the Human Heart Beat

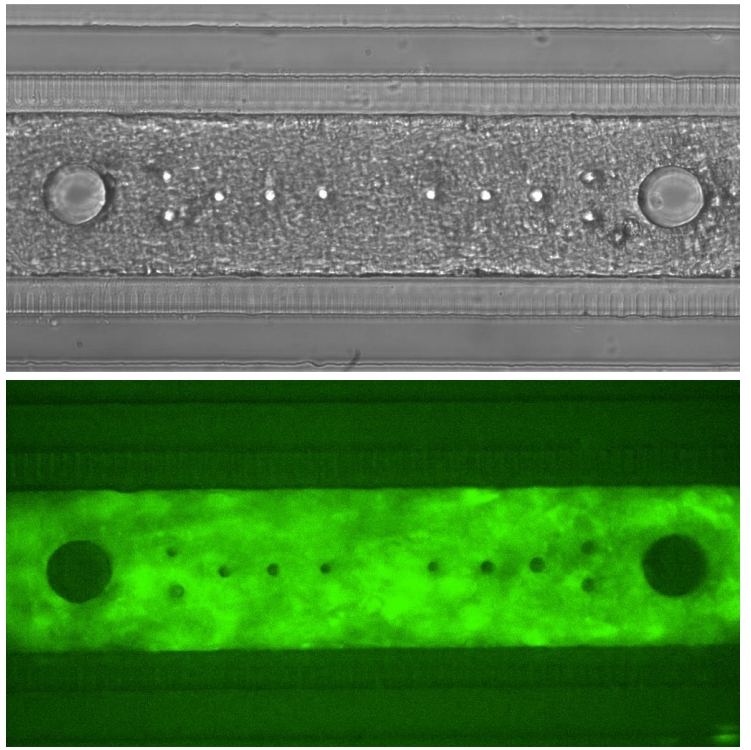
Discovery → Development

Heart Muscle Array
High-throughput



500 µm

Heart Muscle Chip
High Content



150 µm

- *High throughput* and *high content* systems
- Electrical / mechanical / biochemical assays

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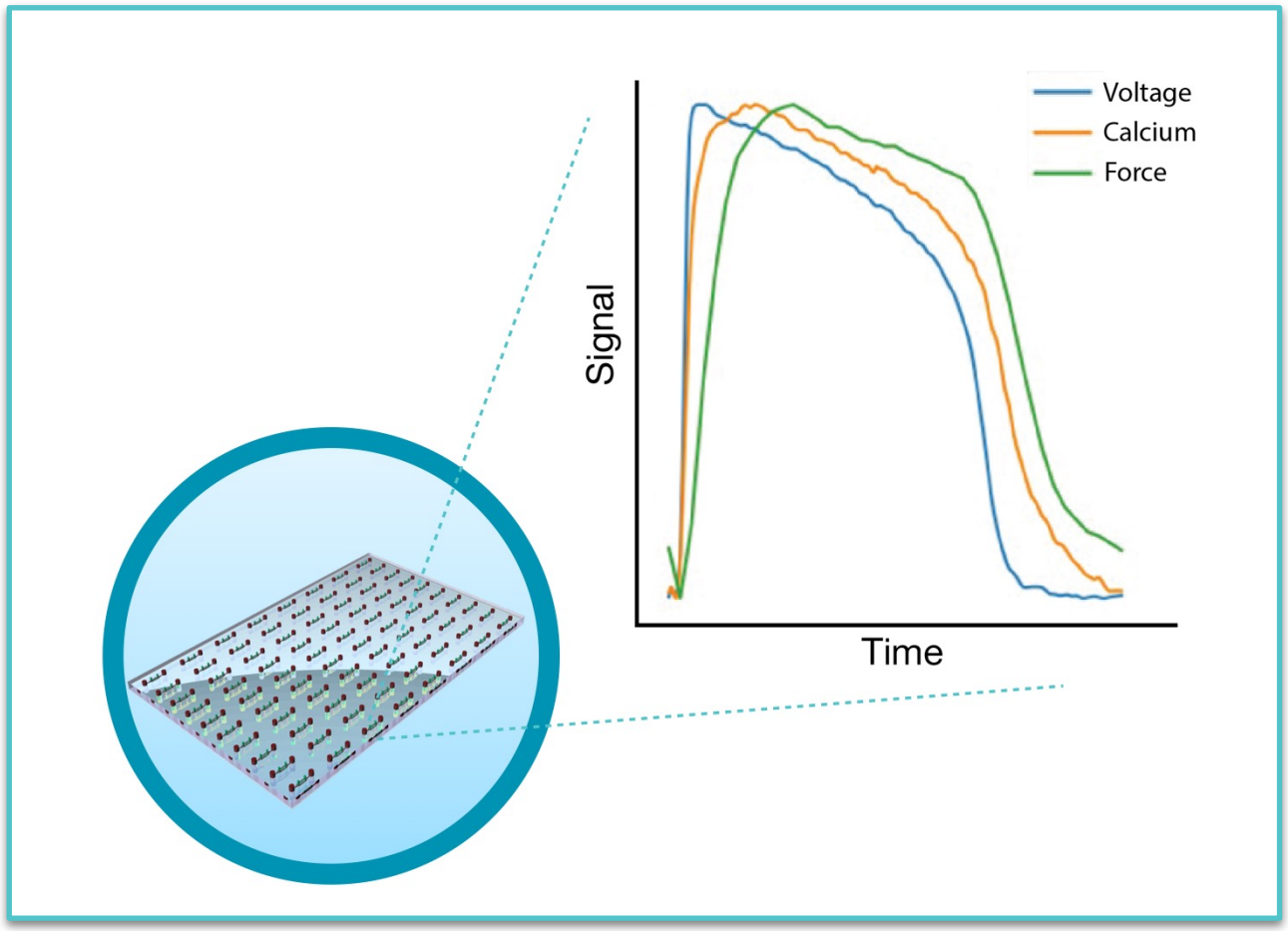
Platform for Phenotypic Data Generation



- Optical non-destructive measurements of the human heart beat dynamics
- Uniquely captures critical coupled electromechanical physiological pathways

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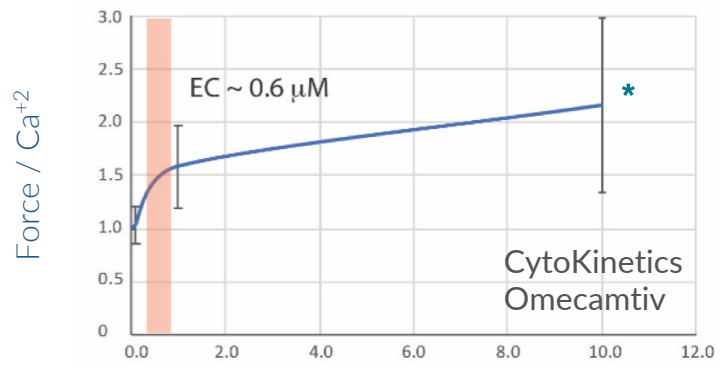
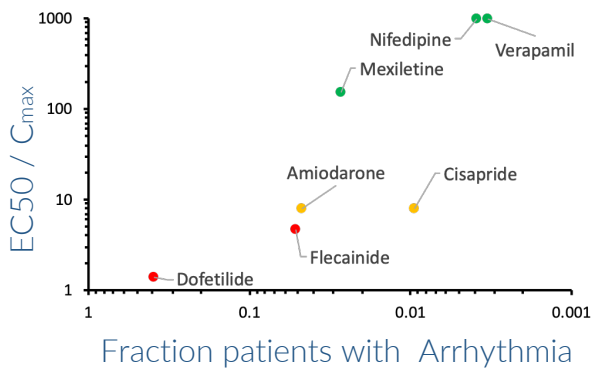
Platform Technologies for Cardiac Phenotypic Screening

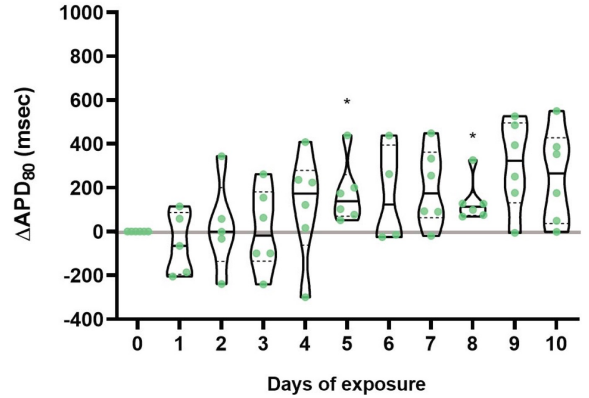
Assessing Contractility



Understanding Arrhythmia



Chronic Polytherapy



Demonstrated utility across a range of pharmaceutical cardiac applications

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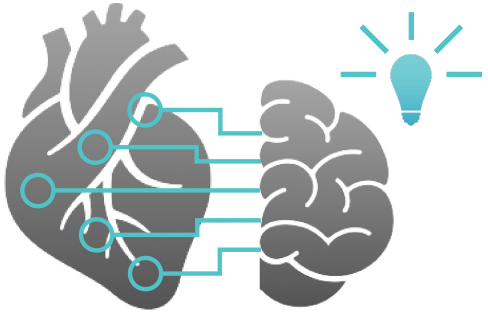
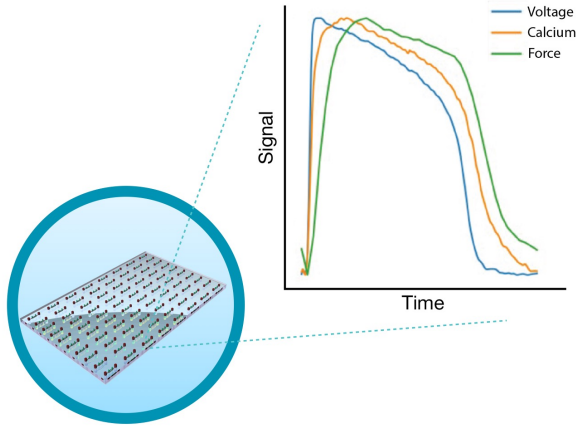
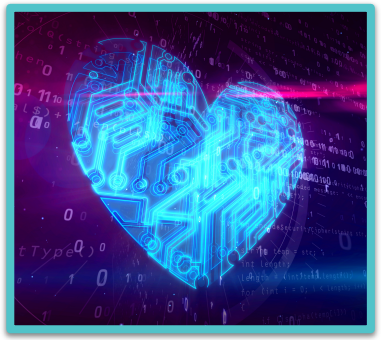
A Collaboration to Transform Data into Knowledge

RGANOS + simula





HTS **multiplexed**
cardiac measurements



Knowledge and data
based ***in silico*** models

Phenotypic pattern recognition

Understanding compound mechanism of action

Combinatorial effect screening

External Validation

Funding

$12.4M + non-dilutive: $8.5M+ in grants
& **$3.9M**+ in NIH / CIRM direct funding

Adoption

$100K contract with one of the world's largest biotech firms

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The Organos Team

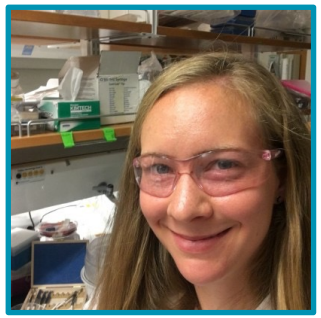
Samuel Wall, Ph.D
Founder / CSO

simula

Kevin E. Healy, Ph.D.
Founder / COB / SAB
Professor UC Berkeley

Julia Schaletzky, Ph.D.
Cardiac Drug Discovery

Cytokinetics



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Universitas Oslonensis MDCCCXI

simula

UiO : University of Oslo

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Future Perspectives

Simula / UC Berkeley

- Continued scientific work and collaboration on joint projects and funding opportunities.

Organos

- Well funded to develop vitro side of the system through US sources
- Development and validation work on drug discovery
- Ongoing contract work with large Pharma partner
- Approach capital markets in late 2022 / early 2023 for growth funding
- ***Find avenues to grow computational side in Norway***


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