Funded by the European Union

Healthy Ideas Healthy Returns

HIHR-9 &
EIT Health Investor Lounge
Programme &
Summary propositions

Co-organised by HIHR & EIT Health Investor Network

November 16, 2021

Level, Leiden - the Netherlands

Participating academic institutions in the Benelux, incl their UMC's

Preferred partner

Silver partners

HIHR supporters

V-Bio Ventures | Novalis II | NLC Health | Thuja | Bioqube Ventures

Content

Programme HIHR pitch sessions, November 16, 2021

Healthy Ideas Healthy Returns

Morning programme

9th edition **Healthy Ideas, Healthy Returns**

09.30 *Welcome coffee*

10.00 *Opening* by the moderator of the day
Jeff Skinner, Executive Director Institute of Entrepreneurship and Private Equity (IECP), London Business School

Welcome
Clemens Ostrowicz, Chair HIHR / Team Leader Innovation and Partnering, University of Luxembourg - LCSB
Menno Kok, Managing Director EIT Health Belgium-Netherlands

J&J Innovation recap
Paul A Soons, Early Development Expert - Janssen Beerse Campus and J&J Innovation

10.20 Pitch-session I

ShanX Medtech BV,* MedTech & Diagnostics, TU Eindhoven
Eriola-Sophia Shanko, CEO/ Founder/ inventor

Cytomine,* eHealth & Datascience, Université de Liège
Jean Beka, CEO

Rapidemic, MedTech & Diagnostics, Leiden University
Violette Defourt, Co-founder / teamleader

10.50 *Coffee break*

11.15 Pitch session II

Antares,* MedTech & Diagnostics , UGhent / IMEC
Katrien Vanhonacker, CEO

Preimure BV, MedTech & Diagnostics, Utrecht Holding
Saber Amin Yavari, CEO

Haermonics, MedTech & Diagnostics, Amsterdam MC
Wouter Markus, CEO

Closing remarks

12.00 *Lunch*

Pitches will last for a maximum of 10 min presentation, followed by 4 min Q&A (+1 min change).
Elevator pitches* contain of a 5 min presentation plus 2 min Q&A (+1 min change).
Due to the density of the programme we must strictly adhere to the schedule. In addition to these pitches, quickfire sessions are scheduled for each pitch-presentation during one of the following days, see schedule on page 6.

Summaries of the pitch propositions can be found on page 7 and further.

Programme EIT Health Investor Lounge, November 16, 2021

Afternoon programme
EIT Health Investor Lounge

12.00 *Lunch*

13.00 *Opening* by the moderator of the day
Jeff Skinner, Executive Director Institute of Entrepreneurship and Private Equity (IECP), London Business School

Welcome
Menno Kok, Managing Director EIT Health Belgium-Netherlands

Caroline Sai, Head of the EIT Health Investor Network

13.30 Pitch & Q&A sessions

Protinhi Therapeutics, Biotech
Bernd van Buuren, CEO

Biond Solutions, Biotech
- Due to a recent agreement with an investor, this proposition will no longer present a pitch -

Asylia Diagnostics, Biotech
Andrey Khmelevskiy, CEO

Avrion Therapeutics, Biotech
Laurent Witschi, CFO

Par'Immune, Biotech
Abderrahim Lachgar, co-founder and CEO

PharmaCytics
Han van 't Klooster, CEO

14.30 *Coffee break*

15.00 *Investor insights on the financing of healthcare innovations in Europe*
Laurent Jacqueroud, Kurma partners
Roel Bulthuis, INKEF Capital

15.30 *Interactive session with the audience on the Entrepreneurial journey*
Roel Bulthuis., INKEF Capital
Bart Haex, EIT Health Belgium-Netherlands
Clemens Ostrowicz, Chair HIHR / Team Leader Innovation and Partnering, University of Luxembourg - LCSB
Caroline Sai, Head of the EIT Health Investor Network

16.00 *Drinks & networking*

Summaries of the pitch propositions can be found on page 13 and further.

Overview Quickfire sessions, November 18 – 24, 2021

HIHR offers new entrepreneurial teams/KTOs venture ideas, not pitch ready yet, the opportunity to test their idea / concept with investors, entrepreneurs and corporates in a 45 minute online session. We highly appreciate your feedback and encourage all investors to participate in these informal sessions.
The sessions will take place via MS Teams from 18 till 25 November, according to the following schedule:

Date	Time	Spin off initiative
		Quick fire sessions only
Thursday November 18	09.00 – 09.45	**Novel oligomeric multifunctional biologics** - *Versatile scaffolds to produced custom and novel oligomeric multifunctional biologics* Luxembourg Institute of Health - Therapeutics & Biotech, MedTech & Diagnostics
	12.00 – 12.45	**3D-FibroScreen** *Fibrosis drug development based on a 3D model screening* ULB-TTO - Therapeutics & Biotech
	17.00 – 17.45	**VUS Oncology** - *Genetic biomarkers to help more cancer patients receive targeted treatment* Oncode - MedTech & Diagnostics
Friday November 19	09.00 – 09.45	**Tumescence Measuring Wearable Patch** - *A smart patch for the quality assessme of the rigidity during a penile tumescent event* Universiteit Hasselt - MedTech & Diagnostics
	12.00 – 12.45	**Standing Sentinel / protoconsciousness bypass and training technologies** - *Hacking REM sleep and waking unconscious for accelerated learning* Radboud UMC / Donders Institute - Therapeutics & Biotech, MedTech & Diagnostic eHealth & Datascience
	16.30 – 17.15	**Artificial Intelligence for coronary diagnostics** - *Treatment decisions guided by AI analysis of images* via EIT-Health - MedTech & Diagnostics
Monday November 22	09.00 – 09.45	**AIWorX** - *We automate data-driven processes in healthcare* Start Up Village – Amsterdam - MedTech & Diagnostics
	12.00 – 12.45	**Multiscreening** - *implantable multiwell technology that brings High Throughput screening to in-vivo* Maastricht University - MedTech & Diagnostics - Due to recent developments this session has been withdrawn -
Tuesday November 23	09.00 – 09.45	**STEPS to recovery -** *Novel treadmill solution for early ambulation in the ICU* IXA Amsterdam UMC - MedTech & Diagnostics

Summaries of the Quickfire candidates can be found on page 19 and further.

We also offer these QF-sessions to pitchers to further discuss their investment opportunity more in depth. The schedule of these additional QF-sessions is as follows:

Quick fire sessions in addition to their pitch		
Monday November 22	17.00 – 17.45	**Antares** - *point-of-care therapeutic drug monitoring device* UGent / IMEC - MedTech & Diagnostics
Tuesday November 23	12.00 – 12.45	**ShanX Medtech BV** - *We are developing antibiotic efficiency testing diagnostic devices.* TU Eindhoven / The Gate - MedTech & Diagnostics
	17.00 – 17.45	**Cytomine** - *Your reference partner for collaborative biomedical image analysis* U Liège - eHealth & Datascience
Wednesday November 24	09.00 – 09.45	**Preimure BV** - *Ultra-tunable Bio-compatible Antibiotic Coating* Utrecht Holding - MedTech & Diagnostics
	12.00 – 12.45	**Rapidemic** - *a novel easy, fast and accurate molecular diagnostic tool for infectious diseases* Leiden University - MedTech & Diagnostics
	17.00 – 17.45	**Northern Target** - *Arginase inhibitors for treatment of pulmonary diseases* University of Groningen - Therapeutics & Biotech - Due to recent developments this session has been withdrawn -

For additional information on the Pitch-candidate Quickfire sessions we kindly refer to their summaries directly hereafter.

Please mark your interest for QF-sessions at the registration-form November 12 the latest, for planning purposes. Registrations after November 12 are scheduled based on availability. We will tailor the audience as much as possible to the business area of the initiative at hand.
You will receive an Outlook invite with MS Teams link per QF-session.

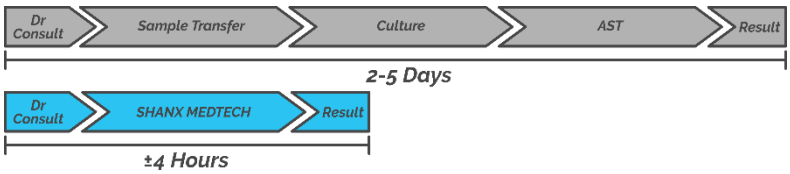
ShanX MedTech BV

Founding date and place:
April 2019, Eindhoven

Funding to date:
Over €180.000 in subsidies and €100.000 in equity.

Description of product:
At the advent of personalized medicine in the primary care, ShanX Medtech is developing antibiotic efficiency testing devices to combat antibiotic resistance.

Current methods to determine antibiotic efficacy have a long turnaround time of >2 days and require a central lab.



ShanX Medtech is developing an antibiotic testing device that delivers testing results in <4 hours at the physician's site. ShanX's devices consist of one-time use cartridges and a benchtop analyzer. Our initial application is Urinary Tract Infections affecting >2 million people in the Dutch primary care, but we will expand our platform to test respiratory tract, blood and skin infections, in hospitals and nursing homes worldwide. We are now validating our prototype. Strategic partnership in place for device validation and initial market access to 25% of the Dutch General Practice.

Amount of funding sought
ShanX Medtech is seeking €1 million seed round to perform the clinically relevant diagnostic accuracy studies for our IVD product.

Contact:
Sophia E. Shanko, PhD| e.s.shanko@shanxmedtech.nl |T: +31 624845112

Pitch session Tuesday November 16 2021
Quickfire session Tuesday November 23 2021, 12.00 - 12.45

Cytomine Corporation SA

cytomine COLLABORATIVE BIOMEDICAL IMAGE ANALYSIS

Founding date and equity funding to date

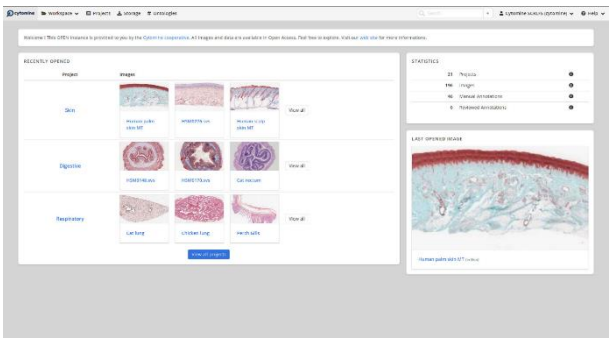
The project Cytomine was started at University of Liège in 2010. Cytomine Corporation SA, based in Liège (Belgium) was founded in January 2021 with a capital of 425 K€.

Executive Summary

In a world where the progress in medicine conducts the specialists to analyse increasingly complex cancerous diseases and where the technological progress is skyrocketing, **Cytomine provides a solution allowing to bring the technological cutting-edge computer science innovation into the biomedical field through its web platform available anywhere & anytime hosting a powerful and modular Artificial Intelligence ("AI") engine.**

Value Proposition

Cytomine is currently active in **Digital Pathology** within the **Biomedical Imaging** field.



As a web platform for pathologists, Cytomine solution is a **secured**, **user-friendly** solution with an optimal **accessibility** ("anywhere, anytime") through a single web browser. The solution allows the collaboration between teams around the world.

Vendor-neutral, the solution can manage a wide range of image formats and metadata from various origins in a standardized way.

This data-centralization combined with interoperability allow Cytomine to be **AI-friendly** in all the AI process chain. Cytomine developed a **modular AI-engine** able to run external AI script in multiple programming languages through Cytomine programming interface. Its **AI Store**, open to third parties AI providers, will enhance diagnosis support.

Cytomine solution is deployed in the teaching, research and hospital market segments.

Cytomine business models are based on the **annual licences** for the Cytomine Enterprise Edition, **services** for the Community Edition (Open Source) version and a **pay per analyse** approach for their AI modules.

Objectives

Cytomine Corporation SA ambition is to become the leader solution when it comes to sharing, collaborating, and benefiting from AI to allow digital pathology to participate in the war against complex diseases like the cancer.

Amount of funding sought

Capital increase of 1.0 M€ by Dec'21 to reach the following milestones:

- Release the first Enterprise Edition.
- Market Cytomine Enterprise Edition technology in research.
- Consolidate the European market and expand into American market.

Contact

Jean BEKA | CEO | jean.beka@cytomine.com | T +32 496 572415
Grégoire VINCKE | CMBO | gregoire.vincke@cytomine.com | T +32 467 128892
Renaud HOYOUX | CTO | renaud.hoyoux@cytomine.com | T +32 467 128893
www.cytomine.com

Pitch session Tuesday November 16 2021
Quickfire session Tuesday November 23 2021, 17.00 - 17.45

Preimure BV

Mission

Despite substantial advances in the design and manufacturing of permanent (metallic) implants, they do not outlast the patients. To illustrate, more than half of hip replacements will fail before 15 years, mainly because of infection, fracture and loosening. The revision surgeries, as a solution, do not resolve the failure and often fail much earlier than do primaries. They also incur a significant socioeconomic burden. To prevent these implant failures, Preimure (**Pre**vention of **im**plant fail**ure**) will develop different surface engineering strategies to improve implant bio-functionality and longevity by recruiting more host cells for new bone formation and inhibiting bacterial colonization.

Challenge

Prosthetic joint infection (PJI) is an underestimated calamitous complication for joint replacement and one of the major reasons for revision surgery. Bacterial infections occur in 1 to 2 % of all hip and knee implants for which prolonged antibiotic treatment and patients need revision surgery, in many cases. Up to 10% of these infections will become chronic and non-treatable and lead to severe disability or require lifelong antibiotic suppression or amputation. In the Netherlands, the number of infected implants is estimated at around 1000 patients a year. In the USA, there are about 20,000 cases per year. The two-step revision surgery as the golden standard to treat these patients will cost around $50,000 per patient to the healthcare system. With an increasing number of total hip and knee implant surgeries, it is expected that the number of infections will increase in the next decade with a total cost estimation of $1.60 billion (only in the USA).

Solution

Preimure is a spin-off company of UMC Utrecht and funded by Dr. Saber AminYavari on August 24th, 2021. Preimure is developing an ultra-tunable and bio-stable coating (an absorbable antimicrobial coating) to prevent or treat PJI. The main benefit of this coating is the eight weeks of antibiotics release above the minimum inhibitory concentration (MIC). Higher antibiotic concentrations reduce the chance of pathogenic survival, antibiotic resistance and hence, the chance of PJI. Another benefit of this coating is the combinational delivery of antibiotics, which reduces antibiotic resistance development. Moreover, the two-stage revision surgery can be reduced to a one-stage revision surgery.

Funding

The concept of our coatings has been validated *in vitro* and *in vivo* where we have shown fully eradication of planktonic and adherent bacteria within eight weeks after the implantation. Neverthelss, our coatings should be verified and validated in the accredited labs to receive the ISO 13485 certificate for the manufacturing. Preimure is looking for 700 kEuro funding to support this milestone which will allow us to validate our technology, and will gear us towards a next investment round of 1 ME. Preimure has not received any equity funding to date.

Contact:

Dr. Saber AminYavari, CEO – saber.aminyavari@preimure.com +31 644 55 38 54

Pitch session Tuesday November 16 2021
Quick fire session Wednesday November 24 2021, 09.00 – 09.45

Antares

Founding date
Expected Q2/Q3 2022

Mission
Development of a stand-alone device with fast readout for therapeutic drug monitoring (TDM) of ß-lactam antibiotics in critically ill patients

Market
Antibiotics play a life-saving role in the treatment of critically ill patients in intensive care units (ICUs). β-lactams are the most used antibiotics because of their broad spectrum of activity. However, the rapid and extreme physiological changes of ICU patients often cause unintended over- or underdose of antibiotics, leading to negative patient outcomes. Individualized therapy based on quick therapeutic drug monitoring (TDM) and subsequent dose adjustment is regarded as the only method for optimal antibiotics therapy. Surveys in European society of intensive medicine (ESICM) show that the number of ICUs practicing TDM-guided dosing for β-lactam increased 3-fold, from 9.4% in 2015 to 30% in 2019.

Competitive landscape
Presently, the routine methods for β-lactam TDM using liquid chromatography-mass spectroscopy (LC-MS) are not satisfactory. LC-MS methods require high expertise and are time-consuming with the need for pooling samples. As a result, the turnaround time of the results is usually more than 24 hours and quite often 2-3 days, which is too long for dose adjustment and poses a huge risk to critically ill patients. On top of that, the investment for the LC-MS instruments is high, meaning that they are only available at large hospital expert labs. Based on 60+ interviews with ICU clinicians and lab pharmacists, the desired product for β-lactam TDM is a stand-alone device placed either in the central lab or in the ICU ward offering a quick readout of the β-lactam concentration.

Technology and value proposition
The Antares project is developing an innovative TDM solution utilizing on-chip Raman spectroscopy. The monitoring solution is composed of a standalone benchtop readout device and a consumable cartridge. The Raman signal of β-lactams is generated in a microchip within the consumable cartridge, and then analyzed by in the readout device for rapid quantification. We have shown that β-lactams in blood in clinical concentration can be quantified within 5 minutes. Besides, our solution requires minimal sample preparation and is ready to be miniaturized into mm^2-size low-cost consumable chips.

Equity funding to date
None

Amount of funding sought
€6M to reach the key value-inflection milestone of a working prototype of the benchtop device and consumable cartridges ready for clinical trial and transferring towards commercialization.

Contact
Katrien Vanhonacker, MBA, katrien.vanhonacker.ext@imec.be, T +32 476 853 876
Haolan Zhao, PhD, haolan.zhao@ugent.be, T +32-9-331 4826

Pitch Session Tuesday November 16 2021
Quick fire session Monday November 22 2021, 17.00 – 17.45

Rapidemic

Founded April 7, 2020

Problem

In the past year, our healthcare systems, economies, and our ways of life were impacted by the destructive force of a viral pandemic. Outbreaks, epidemics, and pandemics are occurring more frequently. These pathogens pose a threat as they mutate frequently and spread rapidly. Controlling outbreaks can only be achieved through large scale, repeated testing to establish the infected population and take measures accordingly. But diagnostics are not only key to containing outbreaks: they are also crucial in guiding over 60% of all healthcare decisions. Faster, more accurate, and inexpensive diagnostic tools enable doctors to make better treatment decisions and to drastically cut healthcare costs.
Existing methods have important shortcomings. The current most accurate tests on the market, based on PCR, require logistically demanding laboratory facilities and expertise. On the other hand, antigen or antibody tests are much simpler and do not require equipment. However, they take a long time to redevelop for novel diseases and are much less sensitive.

Solution

This is why we are developing Rapidemic: a novel platform technology that is able to quickly and accurately diagnose patients infected with pathogens in minimal time. Our patent – pending technology detects the most essential part of the pathogen, its genome. Rapidemic only requires the addition of little pieces of synthetic DNA, called primers, to make a device pathogen-specific. Additionally, an easy readout is provided by a clear blue color change.
Our first product is a test to differentiate respiratory viral infections, such as influenza viruses, coronaviruses and respiratory syncytial virus (RSV). For people in risk groups, these diseases can be life threatening if not treated immediately with the right medication. Health care practitioners and clinicians value speed in diagnosis, as it can reduce risks for the patient's environment but also the practitioners' health, and give clinicians actionable information right away.

Value proposition

Rapidemic is a unique technology that enables fast and accurate point-of-care testing. The easy Rapidemic tests can be performed without the need for laboratory equipment. As a consequence, the technology is cost effective, because less handling is required but also because we make use of inexpensive reagents. The Rapidemic can also be multiplexed, to detect various pathogens at the same time. Lastly, the Rapidemic technology is a platform technology, which provides an opportunity for scalability.
This company was born from the founder's participation in the global largest biotechnology competition, where they represented Leiden University. The team won the competition and turned the project into a venture. Rapidemic is now looking for 400 000 to develop a prototype, which includes the optimized wetwear, and the hardware of the product.

Equity funding to date none

Contact Violette Defourt – info@rapidemic.com – +32474766874

Pitch session Tuesday November 16 2021
Quick fire session Wednesday November 24 2021, 12.00 – 12.45

Haermonics

Haermonics is a clinical stage medtech company developing innovative therapies to prevent post-operative heart surgery complications.

PROBLEM	IMPACT	PAIN
After heart surgery, excessive bleeding and clotting around the heart can lead to failing drainage and complications.	Highly invasive re-operations Excessive blood loss Atrial fibrillation Extra ICU days Extra blood transfusions	Uncertainty, stress and extra work for surgeons: "Do I need to go back? Do we keep this patient in ICU? Do we need to make an echo?" Unnecessary risk for patient
Accessible Market size is €1.5B	€22B extra healthcare costs 30,000 unnecessary lives lost	Claim on hospital resources and ICU capacity High costs of care

Solution

Haermonics has developed a device (with disposables) to remove blood and clots by flushing the pericardial cavity, thereby preventing excessive bleeding and clotting. Health Technology Assessment shows a per-hospital annual savings of €2M if Haermonics' device and disposables are used.

Main Strengths

- Haermonics has proven – in 2 randomized trials with over 340 patients – that it prevents all unnecessary reoperations and tamponades, and reduces post-operative blood loss by >50%.
- The Haermonics solution was conceived and developed by a leading heart surgeon and is based on the very latest science.
- The Haermonics solution returns control to doctors and nurse by providing critical patient data.
- Haemonics has a diverse and very experienced team, with a clear and well-thought-out strategy.
- In over 60 interviews and customer contacts, the problem and solution have been validated, and the DMU and target market segments identified.

Contact: Wouter Markus – CEO – markus@haermonics.com

Netherlands Medtech
Series A, €4 M+

Pitch session Tuesday November 16 2021
Quick fire session Wednesday November 24 2021, 17.00 – 17.45

Summaries of the EIT Health Investor Lounge Pitches (Scale-ups)

Protinhi Therapeutics

Protinhi Therapeutics
Treating Disease via Protease Inhibition

Country:	Netherlands
Sector:	Biotech
Current Round:	Series A, 3.5 M€
Pre-Money Valuation:	6 M€
Capital Raised to Date:	4 M€

Learn more about Protinhi on Proseeder

Protinhi is developing a novel class of broad-spectrum antivirals - with a focus on flavi- and corona-viruses. We will develop our compounds to orally administered drugs which have strong potential for both therapeutic and prophylactic use to help tackle future outbreaks at an early stage.

The Solution

For many viruses, viral proteases are essential for replication in host cells. Thus, effectively inhibiting viral proteases will block viral replication and transmission. Via our proprietary platform technology and in-house knowledge on target-based design, we have built a novel compound library with high potency and high selectivity has been shown to fight against several flavi- and corona-viruses. We are developing such leads to broad-spectrum antivirals against virus families.

Main Strengths

- Novel technology platform that generates broad-spectrum antivirals against virus families
- Potential to combat flavi viruses, corona viruses and Flu
- Secured IPR
- Experienced and professional team seconded by a solid advisory board
- Further risk-mitigation plans in place

Market:

- Annually 390 M people are infected by dengue worldwide, of which 96 M should be treated.
- 120 M EU/US tourists traveling to endemic countries of dengue per year
- West-Nile virus had several outbreaks in the EU in 2020.
- The COVID-19 pandemic costs at least 9000 US$ Billion over 2020 only (IMF numbers).

Business Model:

- Exit via licensing after reaching a successful Clinical Phase II
- Licensing target: Big pharma dedicated to R&D and/or sales & marketing of infectious disease field
- Foreseen deal may include upfront payment, milestone fees and royalty.

Management Team

- Expertise in life-science, business development, drug discovery public health strategies & financial structuring
- Advisory board with expertise in virology, medicinal chemistry, drug development and (pre)clinical development

Next Steps

- Q2 2021~Q1 2022: (Active Capital Raise) IND-enabling pre-clinical safety study and bio-availability enhancement study for leads against dengue
- 2020 ~ Q1 2022: (Non-dilutive funded) Broad-spectrum antivirals against coronaviruses, funded up to preclinical safety
- 2020 ~ Q1 2023: (Non-dilutive funded) Broad-spectrum antivirals against flaviviruses (e.g. Zika and West Nile), funded up to in vivo PoC

Contact: Bernd van Buuren – CEO - b.vanbuuren@protinhi.com

Bi/ond Solutions

bi/ond. Nourishing, Stimulating and Monitoring Cells

Country:	Netherlands
Sector:	Biotech
Current Round:	Seed, 2 M€
Pre-Money Valuation:	N/A
Capital Raised to Date:	1.2 M€

Learn more about Bi/ond on Proseeder

Bi/ond helps to develop INCLUSIVE and PRECISE cures for all by engineering microchips that mimic a human body in a biological lab. Improving the effectiveness of preclinical predictions of human drug responses in critical to reducing costly failures in clinical trials.

The Solution

By using the engineering expertise, Bi/ond developed a microchip, where biologists can insert human stem cells. The chip, like your body, can: 1. nourish the tissues via an artificial blood vessel, allowing to keep those cells alive for a long-time. 2. stimulate the tissue with mechanical cues, such as beating like a heart for cardiac cells. 3. monitor the tissues in real-time via electrodes and sensors. Providing more than simple imaging. The tech is protected by 2 IPs.

Main Strengths

- Technology protected by IPs
- Technical team
- Location (Delft) for Hardware '
- Proof of Concept' contracts signed
- Answers the need from the Pharma, Biotech
- R&D market.

Market

- LONG-TERM market is the drug development market, which is a market opportunity of $15B for our technological trends and $2B for our focus on the muscle field.
- SHORT-TERM market is the 3D cell culture market, a fast growing market expected to reach $3B in 2026. at 8% of penetration by 2026.

Business model

The business model varies by Customer segment:

1. Hospitals and Academia
   Our product will be directly sold to single users in hospitals and academia. The business model is razor and blade.
2. Biotech and pharma:
   fee-for-service business model.

Management Team

- Combined experience of 24 years in electronics applied to biology. Multidisciplinary and diverse team.
- They already got 5 customers doing paid trials, among which 2 of the top 10 European hospitals.
- They are finalizing a contract with a US pharma company and we are negotiating a partnerships with a Contract Research Organization.
- Soon an advisor from an iconic US biotech company will join the team and after the investment he will join the management.
- Since their inception in November 2017, they attracted €1M in non-dilutive funding.

Contact Cinzia Silvestri – CEO - cinzia@biondteam.com

Asylia Diagnostics

Country:	Belgium
Sector:	Biotech
Current Round:	Series A, 2 M€
Pre-Money Valuation:	7 M€
Capital Raised to Date:	N/A

Learn more about Asylia Diagnostics on Proseeder

Every year 1.15M cancer patients fail to respond to immunotherapy the most advanced cancer treatment available today. This means that at least 50% patients treated by immunotherapy does not benefit from this expensive treatment. This costs $115B to the healthcare system annually.Asylia develops a molecular diagnostics to maximize clinical benefit for cancer patients treated with immunotherapy by suggesting the right therapy for right patient.

The Solution

Asylia develops a clinical decision support system powered by molecular diagnostics that maximize the clinical benefit for cancer patients treated with immunotherapy by suggesting the right therapy for the right patient. By providing this diagnostics solution, the immunotherapy response rate will be increased by 18.5% and $25K will be saved per every patient tested.

Main Strengths

- Strong expertise in data analysis and in company management.
- They have good "mentors" that will become the Board members.
- Good contacts are underway with Pharma companies.

Market:

- Asylia Diagnostics plays on the molecular diagnostics (MDx) market in oncology with a focus on melanoma and NSCLC cancer patients treated with immune checkpoint inhibitors. Thanks to its advantages, molecular diagnostics is the fastest-growing ($9.9 billion in 2018 with CAGR 9.1%) segment within the in vitro diagnostics market ($68.12 Billion in 2018 with CAGR 5.2%).
- The US, EU and Chinese markets of molecular diagnostics for oncology are valued at $6.5B in 2018 with a CAGR of 26%

Business Model:

- Payors (insurers, reimburses).
- Estimates in melanoma: cost- saving of $25’000 per patient switched to an alternative treatment.
- IVD Providers. Distribution via IVD partners allows for 40% royalty pay on each test sold with a service model (paid by patients) and 60% royalty pay on each test sold via product model (reimbursed via payors). In the US, assuming $3000 per test and DCF model of our IVD partner, sales will reach $120M per year by the end of 2027.

Management Team

More than 15 years of experience in management and data science. With expertise in Immunology and bio-informatics

Contact: Andrey Khmelevskiy – CEO – andrey.khmelevskiy@asyliadx.com

Avrion Therapeutics

Country:	Switzerland
Sector:	Biotech
Current Round:	Seed, 2 M€
Pre-Money Valuation:	10 M€
Capital Raised to Date:	2 M€

Learn more about Avrion Therapeutics on Proseeder

Neurodegenerative diseases with a first focus on Amyotrophic lateral sclerosis also called Motor Neuron Disease or Maladie de Charcot. ALS is a deadly disease with no cure and patients average life expectancy is only in the range of 2 to 5 years. Patients loose the ability to walk, talk, brief and die like prisoners of their body. More than 250'000 people suffer from ALS with more than 60'000 new patients are diagnosed every year.

The Solution

Avrion developed a gene therapy product candidate (AVR-001) to treat patients with ALS driven by mutations in the SOD1 gene. AVR-001 yearly sales estimates for SOD1 mutated ALS patients alone is in the range of $300 million. The same product (AVR-001) could be used to treat (i) other forms of ALS, and (ii) possibly other neurodegenerative disorders presenting SOD1 protein aggregates. We have in our pipeline 2 additional targets for other subtypes of ALS.

Main Strengths

- The bicistronic system has the potential to be a significant advantage in terms of manufacturing, safety, and efficacy of this gene therapy approach.
- Novel Technology
- Much needed differentiation in a hotly contested space.

Market

VR-001 yearly sales estimates for SOD1 mutated ALS patients alone are in the range of $300 million. AVR-001 will possibly demonstrate efficacy for SOD1 ALS patients with aggregates. Estimated yearly sales of $3 billion

Business Model

A partnership with a pharma company would be ideal and we would out license the development candidates once they reach POC in human by the end of 2025. they did participate to Bio Europe and other events and have attracted the attention of pharma companies although we are somehow a bit early stage for the time being.

Management Team

Expertise in wealth management, fund raising and operations and 20+ years of experience in the field of gene therapy

Contact: Laurent Witschi – CFO - laurent.witschi@avriontx.com

Par'Immume

Country:	France
Sector:	Biotech
Current Round:	Series A, 5.5 M€
Pre-Money Valuation:	15 M€
Capital Raised to Date:	200 k€

Learn more about Par'Immune on Proseeder

Prior to its repositioning in inflammation field, the drug-candidate, P28GST, was initially investigated as a therapeutic vaccine against bilharziasis. This led to the discovery of its immunoregulating properties and the validation of its safety in adults and children. We will leverage the outstanding safety profile and background (CMC, regulatory, safety on 185 patients and preliminary efficacy in IBD patients) in Mild-to-Moderate Ulcerative Colitis patients.

The Solution

Once identified, our product was initially investigated as a therapeutic vaccine against bilharziasis, showing an excellent safety profile in 185 persons. It was later discovered that it has anti-inflammatory properties by induction of homeostasis of the immune response throw a downregulation of Th1/Th17 pro-inflammatory mediators (TNF, IL-17, ...), upregulation of immuno-modulatory cytokines (IL-10), macrophages M1/M2 ratio balancing and regulatory cell differentiation (Treg).

Main Strengths

- Good team
- Opportunistic solution
- Very advanced project with already existing phase IIa results

Market

- As the UC market is expected to reach $6.8B in 2026 (TAM) with the Mild-to-Moderate segment estimated to reach $778.6m that same year (SAM), Par'Immune forecasts a very reasonable 25% market share at peak sales (SOM) at the first Biologics License Application (BLA).
- The M/M segment is only a small portion of the UC market mostly because it mainly consists of generic drugs with limited efficacy.

Business Model

- The company's business model is the clinical development of the product as far as obtaining Proof of Concept of its human efficacy in Phase II trials.
- Par'Immune will then initiate partnerships with large Pharmaceutical Companies who will then be able to take the lead on the large-scale cash- consuming Phase III human trials in order to bridge the gap towards commercialization.

Management Team

More than 20 years of experience at top positions in the biotech industry and 10+ years of experience in innovation funding from biotech start-ups

Contact: Abderrahim Lachgar – Founder & CEO - a.lachgar@parimmune.com

PharmaCytics

Country:	Netherlands
Sector:	Biotech
Current Round:	Series A, 6,4 M€
Pre-Money Valuation:	25 M€
Capital Raised to Date:	5.4€

Learn more about PharmaCytics on Proseeder

PharmaCytics presents its pipeline-PROTAC development; the only Estrogen Receptor (ER)-selective ligand in breast cancer offering a major competitive advantage. PharmaCytics focusses on achieving oral bioavailability by applying our proprietary NDC-technology – resulting in one of the very few oral PROTACs. Lack of oral bioavailability is a huge and growing issue; Applying our Technology to PROTAC and non-PROTAC compounds represents a huge market potential.
In addition to the *Pipeline* PharmaCytics recently started a third *co-development Partner Project* for a Big-Pharma to turn their PROTAC into an oral variant. Partner Projects form a high valued upside.

The Solution

Firstly, ER-selective ligands with a good affinity/selectivity are not in development/marketed yet and still there is a very high medical need. Secondly our patented Technology gives a lot of control over PK-properties/ bioavailability of PROTACs and classical small molecules and allows to turn parenteral compounds into an oral variant.

Main Strengths

- Only ER-selective ligand in breast cancer & Innovative mode of improving drug bioavailability
- Agreements with (big) pharma
- IP 100% ownership by company (NCE and COM-patent claim)
- Scalable and broadly applicable technology, irrespective of disease
- Seasoned executives

Market

- Only ER-selective breast cancer compound for a PROTAC – blockbuster revenues.
- Partner Projects: In PROTACs and non-PROTACs at least 60 opportunities to make patient- and market relevant improvements giving blockbuster potential based on moderate NPV calculations per project.

Business Model

- Hybrid: (1)Pipeline with breast cancer compound and (2) Partner Projects.
- Sell of the breast cancer compound after value creation, e.g. after clinical phase I
- License to the Technology and milestones/ royalties in Partner Projects

Management Team

Expertise in drug delivery, pre-clinical development, pro-drugs, estrogens, setting up infrastructures, international network and leadership.

Contact: Han Van 't Klooster – Founder & CEO - han@pharmacytics.com

Short summaries of HIHR single **Quickfire session** initiatives

Novel oligomeric multifunctional biologics

Versatile scaffolds to produced custom and novel oligomeric multifunctional biologics

The Luxembourg Institute of Health (LIH) has developed a highly versatile technology platform using patented scaffolds to develop novel immuno-conjugates.

LIH aims to develop a spin-off which will provide its expertise and service to apply its proprietary, versatile unique human scaffolds in eukaryotic cells - to generate novel and innovative oligomeric biologics displaying one or more covalently associated functions (i.e. targeting, effector, tracking functions) for immune interventions in humans, as well as for imaging, diagnosis and vaccine purposes that can be used for instance in immunoassays.

These scaffolds (i) lacking any biological function and (ii) coming from normal circulating human proteins and are ideal to express small molecules (e.g. scFv, nanobodies, cytokines, growth factors).

- The "TetraBolos" scaffold allows generating tetrameric biologics displaying up to four functions. Tetrameric bi-functional molecules targeting (i) unwanted pathogenic, tumorigenic targets with (ii) immune cells can force the immune effector functions to eliminate these targets.
- The "MultiBolo" scaffold allows generating multimeric molecules with one 7- or 14-mer valences, and with one or 2 functions
- The "Pseudo-IgG" scaffold allows generating mono or bi-functional IgG1-like molecules, whose size is similar and structure close to that of conventional antibodies, but whose Fc displays enhanced biological properties for complement, NK activation and for macrophage-mediated phagocytosis.
- A patented scaffold to generate mono-, di- or tri-meric viral spike vaccine candidate (i.e. SARS-CoV-2).

LIH has successfully generated a pipeline of biologics with therapeutic activities in cancer (HER2 breast cancer, lymphoma) or infectious disease (e.g. *P. aeruginosa*) as proof-of-concept.

Contact: Xavier.Dervillez@lih.lu & Jeremie.Langlet@lih.lu

Quick fire session: Thursday November 18, 09.00 – 09.45

3D-FibroScreen

Fibrosis drug development based on a 3D model screening

Fibrosis is a multisystemic disease responsible for more than 35% of all diseases mortality. Fibrosis results from an uncontrolled wound healing process and may affect the heart (post myocardial infarction), the skin (keloids), the lungs (Idiopathic pulmonary fibrosis, drug-induced-fibrosis), the kidney (tubulo-interstitial fibrosis) and many other tissues. While causes and clinical manifestations are heterogeneous, tissular fibrosis shares universal mechanisms. There is currently no therapeutic strategy to treat and control the development of fibrosis (only 2 drugs approved for pulmonary fibrosis in Belgium). The limitations of available cellular models as well as the lack of understanding of the physiological feedback control mechanisms of wound healing are the two stumbling blocks.

Given the lack of effective therapeutic strategies tackling fibrosis and the limitation of in vitro assay currently available, we developed an innovative platform based on new tissue engineered 3D cell-derived matrix models discriminating physiological scarification from fibrosis development. This asset offers us a significant competitive advantage for developing new efficient anti-fibrotic drugs. Indeed, using this well-controlled approach, we generated big data with omics approaches. The full characterization of these innovative models will unlock the identification of efficient drug candidate to stop/reverse fibrosis. Our risk mitigation strategy would combine this innovative platform to our expertise on fibrosis in a service-based model to support biopharmaceutical firms from early research. The service would prop up companies in either identifying new anti-fibrotic drug candidates or assessing drug-induced fibrotoxicity to ensure the efficiency and safety of biopharmaceutical products.

Contact: Charlene.Jouy@ulb.be

Quick fire session: Thursday November 18, 12.00 – 12.45

VUS Oncology

Genetic biomarkers to help more cancer patients receive targeted treatment and improve overall survival.

Our business model is to help biotech companies in selecting the right patients for clinical trials. We have the goal of becoming THE companion diagnostic provider for drugs targeting DNA repair deficient cancers. To test our idea, we have reached out to 5 companies, and one company has already asked us to give a quote. In addition, for PARPi indication, we are in communication with a companion diagnostic provider - our test can directly supplement and improve theirs.

Today, cancer patients are included for targeted treatment based on well characterised loss of function gene variants identified in their tumours. We have discovered, that 30-50% of patients are left unrecognised for targeted treatment as they have gene Variants of Unknown clinical Significance (VUS). First, we have developed a flexible and quick, functional cell-based test, that can check the patient's gene variant to predict if the VUS-patient can be included for the targeted treatment. Secondly, we aim to help improving treatment outcomes. The majority of patients receiving targeted treatment today eventually develop drug resistance and die, as a result of their malignancy. Based on our research understanding of acquired drug resistance, we are working on cell-based tests that can guide novel treatment strategies to overcome drug resistance. This can have an impact on patient outcomes, while also addressing the increasing cost burden associated with drug resistant treatments.

Contact: a.nedergaard@nki.nl
Quick fire session: Thursday November 18, 17.00 – 17.45

Tumescence Measuring Wearable Patch

A smart patch for the quality assessment of the rigidity during a penile tumescent event

Impotence, or male erectile dysfunction, is defined as the inability to get and keep an erection adequate for the performance of sexual intercourse. Worldwide, around 50% of all men above the age of 50 years old suffer from erectile dysfunction.

Our in-house developed smart patch enables a continuous quality assessment of the rigidity and/or tumescence of a penis during a penile tumescent event. The device would assist in first instance people who have continuous or intermittent inability to achieve or maintain an erection for satisfactory sexual penetration, and thus having an Erectile Dysfunction (ED).

Our proposed smart patch is a joint development of researchers at the institute for material sciences of Hasselt University (IMO-IMOMEC) and the Limburg Clinical Research Center (LCRC), a structural collaboration between Hasselt University, Jessa Hospital (Hasselt) and Ziekenhuis Oost-Limburg (ZOL, Genk). Using an in-house developed flexible and stretchable strain gauge, both the tumescence and rigidity of the penis can be continuously monitored, generating reliable data. The silicon based sensor is user-friendly and easy to use and tackles the current conventional problems of existing methods to assess erectile dysfunction. By the use of state-of-the-art communication technology, the urologist has quick access to the obtained data.

Contact: ronald.thoelen@uhasselt.be
Quick fire session: Friday November 19, 09.00 – 09.45

Standing Sentinel / protoconsciousness bypass and training technologies

Hacking REM sleep and waking unconscious for accelerated learning

Approximately 10–20% of children in Europe experience some form of childhood abuse, which frequently results in lifetime trauma as an adult. Meanwhile, approximately 1–3% of the European population will develop acquired post-traumatic stress disorders through adulthood events; often carrying lifelong debilitating symptoms. Cumulatively, these carry an annual economic burden running into the hundreds of billions of dollars.

One potent symptom of such trauma is the re-experience re-enactments of traumatic events within one's dreams: typically experienced as 're-occurring' nightmares. Such nightmares have a profound impact upon waking mood and well-being, often resulting in compulsive self-medication and substance abuse the following day. Such responses may even occur in the absence of specific memories of these nightmares, resulting in the outward appearance of wild mood swings and substance binges for 'no apparent reason'.

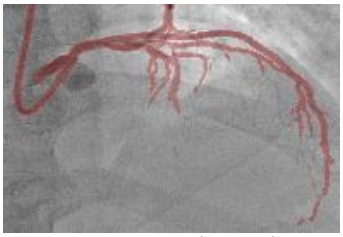
Lucid dreaming—the phenomenon of becoming *aware* of the fact that one is dreaming, within the dream—is a rare, heightened state of conscious awareness; which has already shown some benefits for the treatment of persistent nightmares. However, outside of laboratory conditions, these are close to impossible to induce without dedicated training.

Osiris Biomedical Devices is focused on taking the methods developed to induce lucid dreaming in the lab, and using AI and Machine Learning to induce these experiences in the comfort of one's own home, through wearable EEG devices using biofeedback. These will have benefits for both clinical trauma patients, as well as home users—who may also suffer from persistent nightmares, that are unrelated to trauma.

Contact: jarrod.gott@donders.ru.nl
Quick fire session: Friday November 19, 12.00 – 12.45

Artificial Intelligence for coronary diagnostics

Treatment decisions guided by AI analysis of images


X-ray angiography analysis

Market: The world market for coronary analysis is valued at US$ 800 million and projected to grow by 16% annually.*

Situation: Coronary artery disease causes heart infarction, a major cause of death and disability. Interventional cardiologists assess the coronary arteries with X-ray angiography: images of contrast agent injected through a catheter.

US and EU Guidelines advise additional intravascular pressure measurement (FFR) to choose between medication and stent treatment. Still, many cardiologists use images only, because FFR is expensive (1000 Euro per case), time intensive and the insertion of a wire may damage the coronary artery.

Product: Our algorithm has been trained on 10.000 coronary images. It analyses the images and calculates the blood pressure and location of the stenosis. This reduces time and cost by 80%, and can be integrated into every imaging system. Having a software based solution decreases cost and increases availability in hospitals currently unable to provide FFR. This obviates transfer to an FFR capable hospital and repetitive X-ray angiography for FFR measurement.

Team: Our team has cardiology, radiology, AI, financial and data-security experts. We work closely with hospital groups and leading Computer Vision experts.

Vision: To provide optimal treatment and prevention of heart infarction in all hospitals by reducing cost and duration of coronary analysis.

**https://www.grandviewresearch.com/press-release/global-fractional-flow-reserve-ffr-market*

Contact: hpstallmann@gmail.com
Quick fire session: Friday November 19, 16.30 – 17.15

AIWorX

We automate data-driven processes in healthcare

PROBLEM - The social challenges for Dutch healthcare are enormous: an ageing population, rising healthcare costs, increasing pressure on our healthcare system and a growing shortage of healthcare professionals. This forces us to transform healthcare. Care innovations and digitalization are powerful tools for this transformation.

WHY? - AIWorX automates data driven processes in Healthcare. We believe that healthcare is 'finite' in terms of services and budget – Covid-19 is now clearly demonstrating this - so there needs to be more and better focus on prevention; how do we ensure that people do not need to go to the doctor or hospital in the first place (home monitoring) and if they do end up there; how can we support hospitals with modern technology to provide the most efficient and effective care and optimize diagnostics?

HOW? - Because we believe that actively managing data contributes to better and more efficient healthcare, we introduce PAIR: a toolbox platform for data-driven process optimization, Artificial Intelligence (AI) & Robotic Process Automation (RPA).

WHAT? - PAIR is a kind of socket. PAIR integrates seamlessly with your existing ICT infrastructure and medical specialist' workflows. It provides access to information from PACS, EPD, HIS and wearables, among others. PAIR reduces the management burden, guarantees privacy and facilitates an efficient and successful use of AI technology to improve patient care and optimise processes.

PAIR ensures proper governance of AI solutions with respect to management, workflow, communication, privacy and security. In addition, the platform offers you the possibility to develop and apply AI models yourself.

Contact: michiel@aiworx.nl

Quick fire session: Monday November 22, 09.00 – 09.45

[Multiscreening] - *Due to recent developments this session has been withdrawn* -

implantable multiwell technology that brings High Throughput screening to in-vivo

What if we could do preclinical animal experiments required to get regenerative medicine, biomaterials and drugs to the market at 12% of the current costs, save 60% of current experimental time extending your patent life with 2 years or more and reduce 9-fold the number of animals required to show the same results.

We at multi-screening developed and patented an implantable multiwell technology that brings High Throughput screening to in vivo for the first time.

Our spinoff from Maastricht university is composed of a pathobiologist and two biomedical engineers supported by a serial entrepreneur in life sciences with a combined experience of over 50 years in academic and industry.

We have validated the multiscreen face to face with conventional animal experiments for a novel cartilage repair technology, which is currently implanted in over 200 patients.

We have a **developed product** with **proven outcomes by beta testers** in the regenerative medicine field and we did customer interviews confirming that it can be applied for **biomedical device development, CROs and pharma**.

With only **2 million euros** we can upscale the manufacturing of **this technology** and bring this product to the market. **Would you like to discuss further?**

Contact: l.moroni@maastrichtuniversity.nl

Quick fire session: Monday November 22, 12.00 – 12.45

STEPS to recovery

Novel treadmill solution for early ambulation in the ICU

Annually more than 80.000 patients are admitted to Dutch intensive care units (ICU's). Research showed that ICU patients have long recovery trajectories; half of the patients do not return to their previous jobs within one year, they account for 5 times more health care costs compared to other hospital patients. Physiotherapy in the ICU is paramount for the early recovery of muscle strength and mobility aiming to regain functional independence. However, ambulation training with critically ill patients is difficult because of overall muscle weakness and low exercise tolerance. Additionally, the attachment of mechanical ventilation, drains, infusion lines and monitoring equipment hampers freedom of movement and patient safety. Consequently, the ambulation of critically ill patients puts a huge demand on staff as it often requires the assistance of at least three persons and is extremely time consuming. Therefore, ambulation training is virtually not executed.

We developed a movable treadmill solution with a weight bearing safety utility for bedside use in the intensive care unit (ICU), in combination with a standardized rehabilitation protocol, that allows early ambulation training with critically ill patients. Our explorative randomized clinical trial showed positive effects in the patient group treated with body weight supported treadmill training over patients receiving usual care physiotherapy.

Contact: m.vanderschaaf@amsterdamumc.nl & m.meeks@amsterdamumc.nl

Quick fire session: Tuesday November 23, 09.00 – 09.45

Contact

For additional information and inquiries please contact:

Claar-els van Delft
Tel +31 (0)6 2848 0549
claar-els@hihr.eu
www.hihr.eu

Caroline Sai
investors@eithealth-investornetwork.eu
www.eithealth.eu

Healthy Ideas Healthy Returns

Funded by the European Union