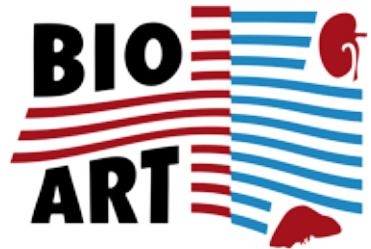
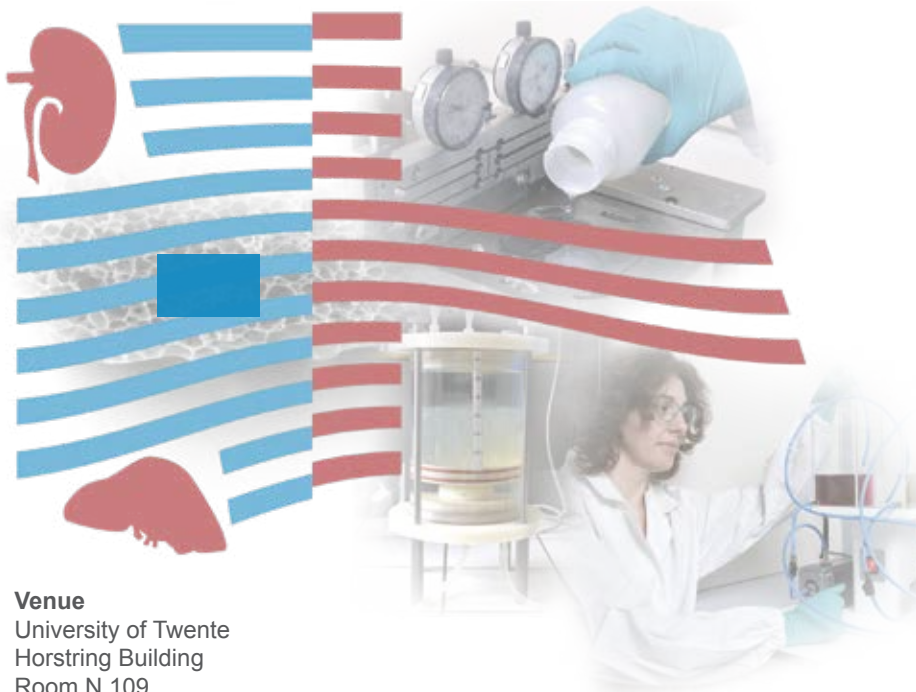


## Biomedical membranes and (bio)artificial organs



8 -12  
June  
2015

## PROGRAMME



**Venue**  
University of Twente  
Horstring Building  
Room N 109



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# Welcome to the BIOART Summer School

**T**hank you very much for participating to the Bioart summer school on “Biomedical membranes and (bio) artificial organs”. The school is organised within the framework of the “Bioart” Marie Curie ITN project, which aims to provide the European Union with specific multi-disciplinary expertise in the area of (bio)artificial organs.

**F**or this school, we have prepared a balanced programme with important lectures by experts of various disciplines from academia and industry. We will also organise a poster session, where you can present and discuss your latest research work, as well as an interactive research assignment session where you can work towards an innovative project idea.

**T**ake the time between the school lectures / activities to meet and interact with your colleagues and the invited speakers / experts. The school, besides an exciting learning experience, could also be a great way to expand your professional and personal network.

**Prof. Dr. Dimitrios Stamatialis**  
Coordinator of the ITN BIOART project



## Monday 8 June 2015

08.00 – 09.00 Registration

09.00 – 09.15 Welcome Prof. Dr. D. Stamatialis

### General topics

09.15 – 11.00 “Biomedical membranes - preparation and characterization”  
*Dr. A. Kemperman, University of Twente, NL*

11.00 – 11.30 COFFEE/TEA BREAK

11.30 – 12.30 “Colloidal interaction forces and electrostatic charges at solid-electrolyte interfaces”  
*Prof F. Mugele group, University of Twente, NL*

12.30 – 14.00 LUNCH

### (Bio) artificial liver

14.00 – 15.00 “Bioartificial liver, its challenges”  
*Prof. R. Chamuleau, University of Amsterdam, NL*

15.00 – 16.00 “Membrane bioreactors using liver cells”  
*Dr. L. De Bartolo, ITM, IT*

16.00 – 16.30 COFFEE/TEA BREAK

16.30 – 17.30 “New Therapeutic Targets Discovered for Liver Repair and Regeneration with special reference to GMP and GCP regulatory issues”  
*Dr. S. Giri, University of Leipzig, DE*

18.00 – 19.30 DINNER

## Tuesday 9 June 2015

### General topics

08:30 – 09:30	“Biomaterial - cell interaction” <i>Dr. A. Poot, University of Twente, NL</i>
9.30 – 10.30	“Mass transfer and modeling in bioartificial organs” <i>Prof. C. Legallais, University of Compiegne, FR</i>
10:30 – 11:00	COFFEE/TEA BREAK
11:00 – 11:45	“Hemocompatibility of biomaterials and medical devices – scientific background and practical examples” <i>Dr. H. Lemke, Excorlab, DE</i>
11:45 – 12:30	“Biological safety of medical devices – regulatory issues” <i>Dr. H. Lemke, Excorlab, DE</i>
12:30 – 14:00	LUNCH
14:00 – 15:00	“Entrepreneurial Thinking: Bringing your Ideas to Life” <i>Dr. B. Papenburg, Materiomics B.V., NL</i>
15:00 – 17:00	Poster session (coffee and tea)
18:00 – 19:30	DINNER

## Wednesday 10 June 2015

### General topics

- |               |  |
|---------------|--|
| 09:00 – 10:00 | “Membrane functionalization strategies”<br><i>Prof. M. Ulbricht, University of Essen, DE</i>   |
| 10:00 – 11:00 | “Surface modification to guide protein adsorption and cell response”<br><i>Prof. Th. Groth – University of Halle, DE</i>   |
| 11:00 – 11:30 | COFFEE/TEA BREAK   |
| 11:30 – 12:30 | “Early stage health economic evaluation of bioengineered tissues & organs to facilitate market access and reimbursement”<br><i>Prof. M. Ijzerman, University of Twente, NL</i> |
| 12:30 – 14:00 | LUNCH  |
| 14:00 – 15:00 | “Membranes for tissue engineering and regenerative medicine”<br><i>Prof. G. Catapano University of Calabria, IT</i>  |
| 15:00 – 16:00 | “Ethical aspects of bioartificial organs and tissues”<br><i>Prof. P. Brey, University of Twente, NL</i>  |
| 16:00 – 16:30 | COFFEE/TEA BREAK   |
| 16:00 – 17:30 | Research Assignment: working in teams  |
| 18:00 – 19:30 | DINNER   |

## Thursday 11 June 2015

### **(Bio) artificial Kidney**

**09:00 – 10:00** “Evolution of dialysis membrane design: role of ultrastructure and dimensions”  
*Prof. J. Vienken, Nephro-Solutions AG, DE*

**10:00 – 11:00** “Chronic Kidney Disease - nephrologist perspective”  
*Dr. K. Gerritsen, Utrecht University Medical Center, NL*

**11:00 – 11:30** COFFEE/TEA BREAK

**11.30 – 12.30** “At the other end of the blood-line ... (what you should know about life on dialysis)”  
*Dr. J. Boomker, Dutch Kidney Foundation, NL*

**12:30 – 14:00** LUNCH

### **(Bio) artificial pancreas**

**14.00 – 15.00** “Functional beta cell replacement therapy through islet or whole pancreas transplantation”  
*Dr. M. Nijhoff, Leiden University Medical Center, NL*

**15:00 – 16:00** “Bioartificial pancreas device for patients with diabetes type 1”  
*Dr. A. van Apeldoorn, University of Twente, NL*

**16:00 – 17:30** Pitch of research assignments by the workgroups

**18:00 – 20:00** DINNER and Evening lecture: “When the movies were young”  
*Prof. J. Vienken, Nephro-Solutions AG, DE*

## Friday 12 June 2015

### (Bio) artificial Kidney

09:00 – 10:00

“Human Organs – on – chips”

*Dr. A. van der Meer, University of Twente, NL*

10:00 – 11:00

“The functional requirements of a living membrane for Bioartificial kidney”

*Dr. R. Masereeuw, Radboud University Medical Center, NL*

11:00 – 11:30

COFFEE/TEA BREAK

11.30 – 12:00

Research assignment awards / Poster awards /  
Concluding remarks

*Prof. Dr. D. Stamatialis, University of Twente, NL*

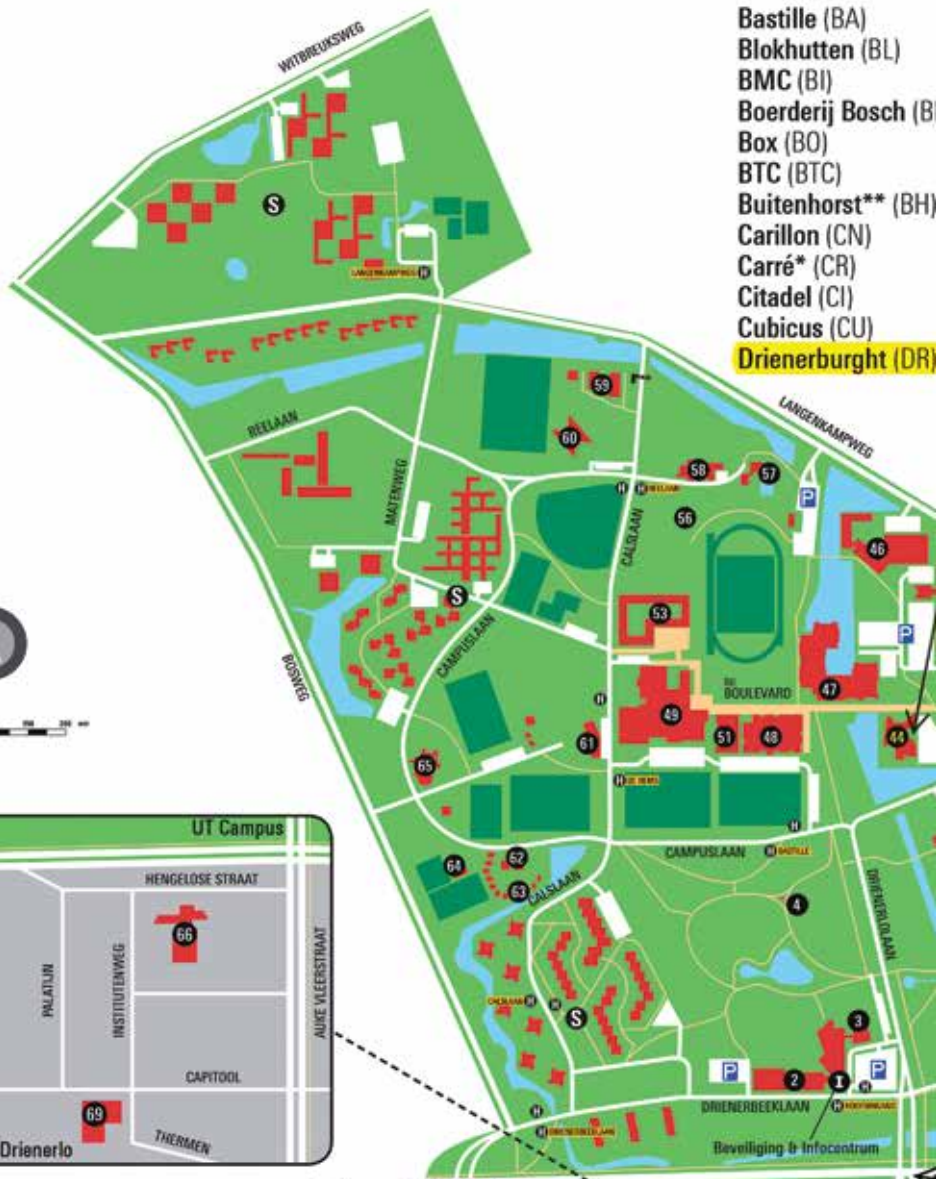
12:00 – 14:00

LUNCH + departure



# MAP C

- Bastille (BA)
- Blokhutten (BL)
- BMC (BI)
- Boerderij Bosch (B)
- Box (BO)
- BTC (BTC)
- Buitenhorst\*\* (BH)
- Carillon (CN)
- Carré\* (CR)
- Citadel (CI)
- Cubicus (CU)
- Drienerburght (DR)**



Hengelo

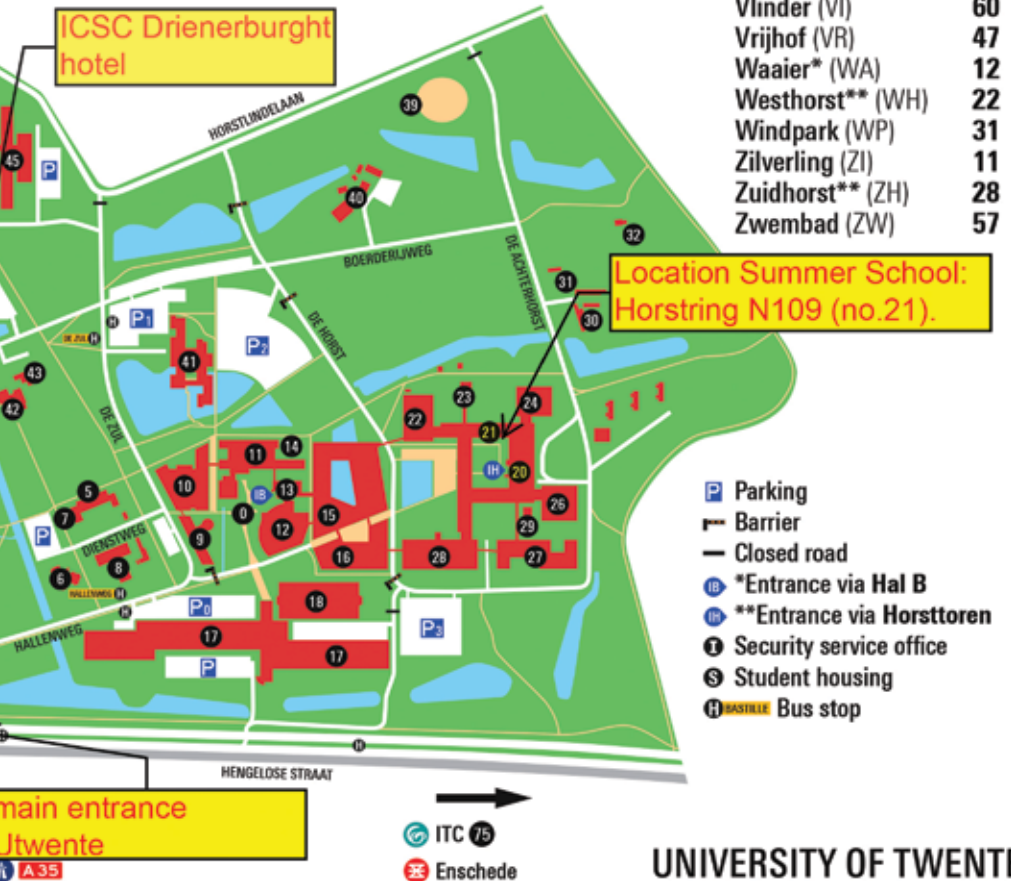
Station Drienerlo

66 BTC  
69 Therm

This map is downloadable at [www.utwente.nl/campusmap](http://www.utwente.nl/campusmap)  
 For a 3d-version see [maps.utwente.nl](http://maps.utwente.nl)

# OF THE UNIVERSITY OF TWENTE

48	Erve Holzik (ER)	40	Kleinhorst** (KH)	23	Schuur (SR)	43
63	Faculty Club (FC)	42	Linde (LI)	61	Seinhuis (SH)	7
32	The Gallery (GY)	17	Logica (LO)	65	Sky (SK)	51
62	Garage (GA)	5	Meander** (ME)	27	Sleutel (SL)	58
53	Hal B (HB)	13	Mondriaan (MO)	59	Spiegel (SP)	2
66	High Tech Factory (HTF)	46	Nanolab* (NL)	16	Sportcentrum (SC)	49
29	Hogedruklab (HD)	8	Noordhorst** (NH)	24	Stall (ST)	63
4	Hogekamp (HO)	45	O&O plein (OO)	0	Technohal (TH)	18
15	<b>Horstring** (HR)</b>	<b>21</b>	Oosthorst** (OH)	26	Teehuis (TH)	14
9	<b>Horsttoren (HT)</b>	<b>20</b>	Openluchttheater (OUT)	56	Tennispark (TP)	64
41	ITC (ITC)	75	Paviljoen (PA)	6	The Gallery (GY)	17
44	Keet (KT)	30	Ravelijn (RA)	10	Therm (TM)	69
					Trial-terrein (TT)	39
					Vleugel (VL)	3
					Vlinder (VI)	60
					Vrijhof (VR)	47
					Waaier* (WA)	12
					Westhorst** (WH)	22
					Windpark (WP)	31
					Zilverling (ZI)	11
					Zuidhorst** (ZH)	28
					Zwembad (ZW)	57



# What is BIOART?

BIOART is an Initial Training Network funded by the European Union. It brings together academic and private partners collaborating to provide young researchers with the research and entrepreneurial skills necessary to make a significant impact in the **treatment of kidney and liver diseases**, and enhance their career prospects in both the public and private sectors.

## Research Objectives

- Develop **prototype artificial kidney devices** enabling prolonged/continuous removal of uremic toxins
- Develop **prototype bioartificial kidney devices** using human renal epithelial cells to remove uremic toxins
- Develop **prototype bioreactor devices** to ensure the viability and function of hepatocyte cells

BIOART recruited **11 PhD students** (Early-stage researchers) and **5 postdocs** (Experienced researchers) to achieve its scientific objectives.

## Training Objectives

BIOART **trains a new generation of scientists** capable of addressing highly multi-disciplinary projects combining material science and engineering with biology and medicine.

## BIOART in brief

**Starting date:**

1<sup>st</sup> December 2012

**End date:**

30<sup>th</sup> November 2016

**Number of partners:** 11

**Coordinator:**

Prof. Dr. Dimitrios STAMATIALIS  
University of Twente, MIRA Institute  
The Netherlands

**Programme:**

FP7-PEOPLE-2012-ITN

**Project Reference:** 316690

**EC Funding:** 3,792,616 €



## **University of Twente**

Biomaterials Science and Technology (BST)  
The Netherlands

## **Paul Sabatier University**

Laboratoire de Génie Chimique (LGC)  
France

## **Radboud University Nijmegen Medical Centre (RUNMC)**

Nijmegen Centre for Molecular Life Sciences  
The Netherlands

## **University of Technology of Compiègne (UTC)**

Laboratory of Biomechanics & Bioengineering  
France

## **National Research Council of Italy (ITM-CNR)**

Institute on Membrane Technology  
Italy

## **Universität Leipzig (ULEI)**

Cell Technologies and Applied Stem Cell Biology  
Germany

## **Università della Calabria (UNICAL)**

Department of Environmental and Chemical Engineering  
Italy

## **EXcorLab GmbH**

Germany

## **GVS S.P.A.**

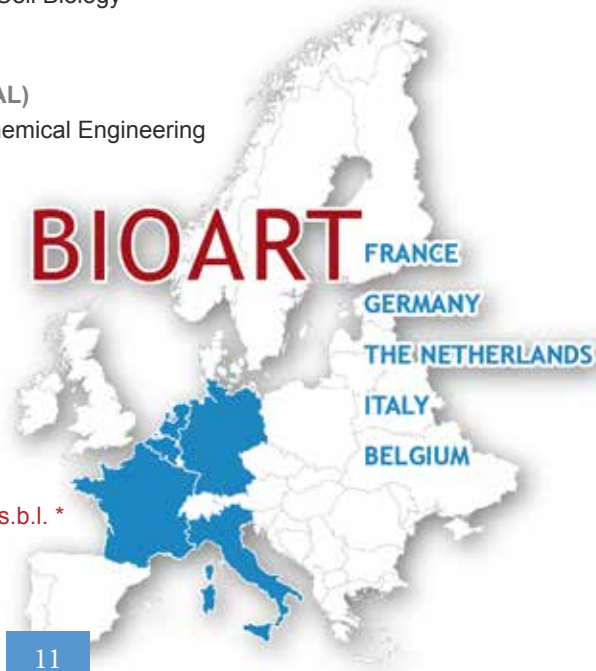
Italy

## **Bionethos Innovation GmbH**

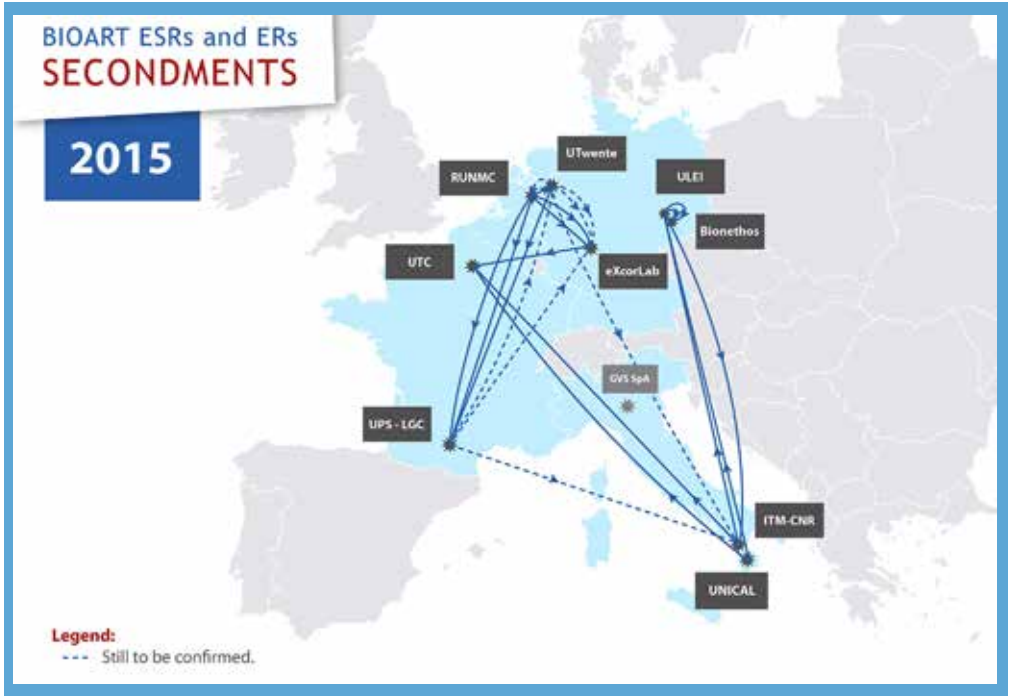
Germany

## **European Membrane House a.i.s.b.l. \***

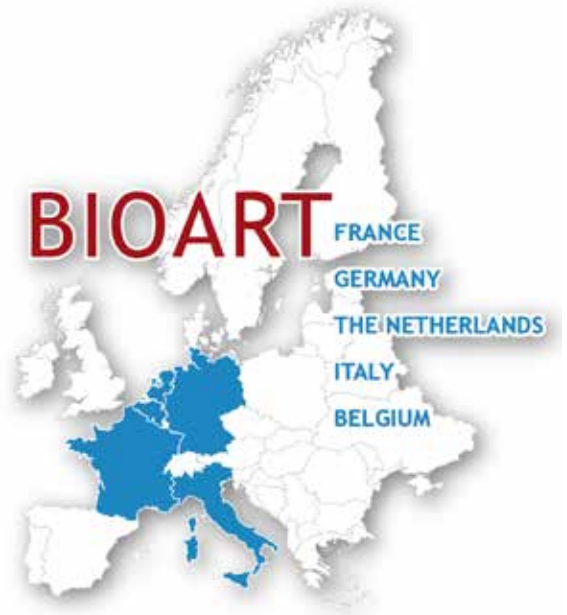
Belgium



# Map of the Fellows' Secondments in 2015



BIOART's team at Cetraro (Italy) in September 2014



[www.bioart-fp7.eu](http://www.bioart-fp7.eu)

**Summer School organised by**

Department of Biomaterials Science and Technology  
MIRA Institute of Biomedical Technology and Technical Medicine  
Faculty of Science and Technology  
University of Twente, Enschede, The Netherlands.



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The Summer School is sponsored by:



The Summer School is endorsed by:

