TESLA

connecting science,business and society

Project Proposals

24 March 2016

13:00 - 18:00

Science Park C1.112

Welcome

Dear guest,

Welcome to Tesla's first official project proposal presentations!

The Tesla minor is an intensive program for second year master students at the faculty of Natural Sciences, Mathematics and Informatics. During this program, students are challenged to apply their scientific and academic background in business and society. Students participate in a wide variety of training sessions, workshops, lectures and assignments. Most of their time will be spend on working on projects for all sorts of clients.

For the past three weeks, 29 enthusiastic students of different disciplines worked together on 10 projects. During these presentations, their initial plans and ideas for every project will be presented. This booklet provides an overview of the teams and the projects they work on. Please don't hesitate to ask questions after every presentation. Feel free to stay for drinks afterwards.

Enjoy!

Tijmen Bakker, Evie Cox & Berend Smits, Chairs of the Project Proposal Presentations.

More information: www.teslaminor.nl

Program

13:00	-	13:10	**Opening**	
13:10	-	13:35	**Zon op Stal**	*Berend, Marieke & Charlotte*
13:35	-	14:00	**Green & Healthy Campuses**	*Anna, Laura & Suzanna*
14:00	-	14:25	**Giving Color to the Blue**	*Annemarie, Erwin & Linda*
14:25	-	14:35	Break	
14:35	-	15:00	**A Sustainable Solution to E-Waste**	*Naomi, Guus & Mary-Jo*
15:00	-	15:25	**The imPORTance of Sustainability**	*Martijn, Katharina & Paris*
15:25	-	15:45	Coffee	
15:45	-	16:10	**Preparing for the City of Tomorrow**	*Maarten, Evie & Merrit*
16:10	-	16:35	**Making Groningen Great Again**	*Sander & Vanja*
16:35	-	17:00	**Green Gold**	*Tessa, Mirjam & Tijmen*
17:00	-	17:10	Break	
17:10	-	17:35	**Towards a Society Powered by Sunshine**	*Emma, Alexandra & Lennart*
17:35	-	17:55	**Back to Work and Sports**	*Marleen, Marijn & Miriam*
17:55	-	18:00	**Closing**	
18:00	-	21:00	Drinks	

13:10 | Zon op Stal

FrieslandCampina

Growth and aging of the world population is becoming problematic. Farmers are facing the complicated challenge of providing high quality food in order to fit the needs of the population. The increase in demand for food combined with the abolishment of the milk quota will likely result into growth of the dairy industry. One of the most well-known dairy companies in the world is FrieslandCampina. FrieslandCampina aims to achieve climate-neutral growth by reducing emissions from high quality milk production at farm level. Furthermore, health and safety are of great importance for FrieslandCampina. However, many farms contain asbestos roofs, which endanger the health of farmers and their families. The European Union demands all asbestos roofs to be removed by 2024. In this project, we built a business case that aims to tackle these problems altogether. By cooperative replacement of asbestos roofs with solar panels, health risks and environmental impact of dairy farming can be reduced.

Consultants

Berend Smits, Marieke Brüggemann & Charlotte Clarijs

Client

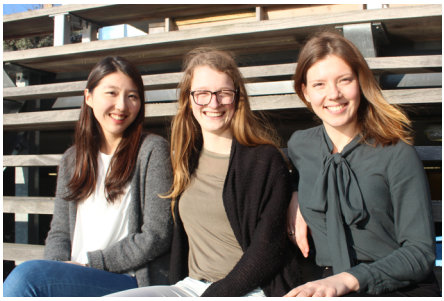
dr. Ynte de Vries

Supervisor

dr. Erik Manders

13:35 | Green & Healthy Campuses

Royal FloraHolland



Increasing urbanization has led to less green environments and even more, to people spending more time indoors without any direct contact with nature. This development has a negative effect on our health. Increasing green space in public environments can positively impact people as it could influence mental health (e.g. relieve stress) and behaviour (e.g. enhance social contact, stimulate exercise), which would in general improve productivity and well-being. Royal FloraHolland wants to promote the functional aspects of plants as part of their innovation agenda, which aims to develop and test new earning opportunities for entrepreneurs in the horticultural sector. In collaboration with them, we aspire to create a scientifically sound business model that would provide a pleasant and healthy environment for the users of university buildings and provide widely applicable information on making indoor work environments healthier.

Consultants

Anna Sagong, Suzanna van Baardewijk & Laura Petrina

Client

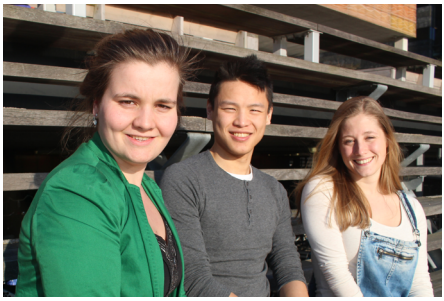
Nicolien Hendrickx

Supervisor

dr. Jolanda Maas

14:00 | Giving Color to the Blue

The National Police



Recently, several items were published in the news regarding the high number of long-term absent personnel among Dutch policemen (NOS, 2016). It is estimated that 4550 of the 65.000, or 7 % of people that work for the police stay at home each day. However, these numbers are a rough estimation. In fact, the National Police currently has no idea of how many officers stay at home, why they are staying at home and what the cause is of their long-term absence. The high number of long-term absent personnel entails enormous costs and a reduction in efficiency in the workforce. Research suggests that absent police officers often have psychosocial complaints. Nonetheless, this group has not been the subject of study and current programs are aimed to prevent psychosocial complaints.

Our team will investigate the situation of long-term absent policemen, will assess the cause and propose a solution. Our goal is to help these officers to get back on the workfloor.

Consultants

Annemarie Sinke, Erwin Choy & Linda van Soolingen

Client

Teun-Pieter de Snoo

Supervisor

dr. Harm Krugers

14:35 | A Sustainable Solution for E-Waste

TNO

Electrical and electronic equipment (EEE) such as mobile phones and televisions are ubiquitous in modern societies. As the total amount of EEE grows steadily, this simultaneously creates an ever expanding amount of e-waste. Due to a myriad of reasons, this e-waste is often processed in the informal sector, especially in developing countries. This informal processing creates a lot of problems, for instance by causing environmental pollution, loss of scarce resources and health hazards.

Motivated by a desire to improve these circumstances, our client TNO asked us to develop a sustainable business model that provides a solution for one or more problems in the e-waste sector. To do this, we will first map out the sector in more detail. Subsequently, we will deduce multiple possibilities for sector entrance from this data, and select the highest potential options for the second phase of the project. During this second phase we will work towards our final deliverable: one or more fully developed business models that can contribute to improving conditions in the e-waste sector.

Consultants

Naomi Montenegro Navarro, Guus Teunisse & Mary-Jo Diepeveen

Client

drs. Renato Calzone

Supervisor

dr. Moniek Tromp

15:00 | The ImPORTance of Sustainability

Port of Amsterdam

The Port of Amsterdam is one of the largest harbors in Europe. In the coming years sustainable growth of the economic activities is one of the key ambitions of the Port of Amsterdam. In 2020 the Port of Amsterdam aims to belong to the most sustainable harbors in the Europe. With this project we aspire to contribute to reach this goal. We seek to find an innovative, sustainable and efficient solution to one of the following themes: sustainability, ecology or quality of life. The overarching objective of our project is to increase public appreciation of the harbour without disrupting its economic activities.

Consultants

Martijn Kamps, Katharina Müller & Paris Asif

Clients

Remco Barkhuis & Kim Borgmann

Supervisor

dr. Arie Vonk

15:45 | Preparing for the City of Tomorrow

Bureau Marineterrein

For 400 hundred years Marineterrein was owned by the Royal Dutch Navy. Many warships were built here to protect the VOC fleet, giving high historical value to the area. Now, Marineterrein is assigned a new function, as the Navy will no longer use the premises, and is gradually opened to the city of Amsterdam. It is a unique location as it has no fixed allocation plan until 2018. Bureau Marineterrein Amsterdam will guide the urban development and innovation of the area to prepare us for the city of the future. An element of the future city is to have minimal impact on the environment. This is where we come in as TeamMarine: our goal is to develop an innovative project that has little to no impact on the surrounding environment, that connects its surroundings and is applicable to a larger scale. We will focus on the themes 'water' and 'circularity'. In the scope of these themes, we will present three possible pilots we have in mind to implement at Marineterrein.

Consultants

Maarten Erich, Evie Cox & Merrit Beck

Clients

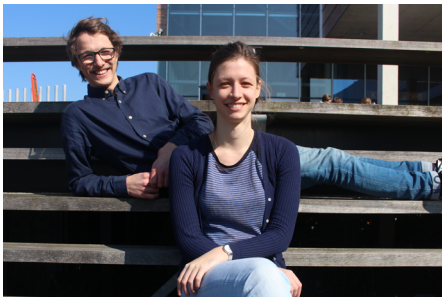
Liesbeth Jansen & Anikka Fulop

Supervisor

dr. Boris Jansen

16:10 | Making Groningen Great Again

TNO & Economic Board Groningen



In 2017 Groningen will be the first region in the Netherlands to receive the new 5G wireless internet. 5G will bring new advantages that will allow devices to connect to each other with minimal human interaction. Our goal in the coming 5 months is to investigate how the 5G network can be used to improve the Traffic and Logistics industry in Groningen. The possibilities of 5G in this sector range from creating the first autonomous cars to improving robots working in warehouses. We hope to investigate the possibilities for innovative use-cases for Traffic and Logistics stakeholders in Groningen. We are excited to present our plans to you in the coming project proposal presentation! Stick around and feel free to ask us critical questions.

Consultants
Sander van Dorsten & Vanja Saric

Clients
Nathalie van Schie (TNO) & Peter Rake (EBG)

Supervisor
prof. dr. Robert Meijer

16:35 | Green Gold

Commonland

Since the medieval ages the Netherlands have conquered the wet peatlands, by building dikes and polders. Dewatering of these peatlands created fertile lands on which dairy farmers could live and to run their farms there for generations. However, the poldering and subsequent air exposure caused the land to oxidize and to literally evaporate. This resulted in the subsidence of the land, resulting in entire landmasses slowly sinking meters below the sea level. The oxidation of the peatland is accompanied by gigantic amounts of CO2 release and the destruction of the beautiful Dutch landscape. The land subsidence is an ongoing process of which the effects can clearly be seen in the Dutch landscape, especially in the Amsterdam rural area.

In this project, we attempt to find solutions to this problem, while providing inspirational, social, natural and financial returns for the stakeholders. Innovation and communication is key to solving the peatland problem.

Consultants
Tessa van Dijk, Mirjam Heinemans & Tijmen Bakker

Client
Sanne Kruijt

Supervisor
drs. Frans Oosterhuis

17:10 | Towards a Society Powered by Sunshine

Sungevity

Consultants
Emma Schook, Alexandra Wolters & Lennart de Vries

Clients
Jasper Hörmann & Lisanne Brummelhuis

Supervisor
prof. dr. Wim Sinke

Fossil fuels are slowly depleting, whereas global primary energy demand is increasing. Fossil fuel combustion is a major cause of significant climate changes that will have serious impact on humanity. An important source of renewable energy that can meet up to the world's total energy demand is solar energy. Our client, Sungevity, is a mission driven solar electricity company that has created a powerful residential market with the purpose of powering people's life with sunshine towards a sustainable society. Currently, the solar energy surplus produced during the day cannot efficiently be utilized at night. There is an increasing demand to use home-produced solar energy more efficiently, especially with expected changes in net metering legislation. Besides, dependence of the central electricity and natural gas network means dependence of fossil fuels, which is undesirable.

Our project sets out to investigate with what modular products or services Sungevity could potentially expand their solar systems in order to i) optimize the use of solar power, ii) decrease the use of fossil fuels, and iii) create more sustainability consciousness, all in a financially viable way.

17:35 | Back to Work and Sports

AMC (ACES & Coronel Institute)

Consultants
Marleen Schuijer, Marijn van Doorn & Miriam Maan

Client
dr. Paul Kuijer & prof. dr. Mario Maas

Supervisor
dr. Paul Kuijer

Imagine you have a job as a construction worker, but you incur a knee injury during a game of soccer. After surgery and some physical therapy, the injury is cured. However, you are still hesitant to go back to work, because you might put too much pressure on your knee. Likewise, an increasing number of individuals with injuries of their locomotor system do not return to work or sports, even though they have been declared physically healthy. The Coronel Institute for Occupation and Health of the AMC has extensive expertise on the factors that determine whether a patient will return to work. The departments Orthopedics and Radiology, together combined in the ACES institute, see a lot of patients that might need guidance in turning back to work, but these departments are not able to offer this guidance. Collaboration between Coronel and ACES could be the first step in developing better and more client-centred health care. Together, these institutes aim to implement performance-based measures to actively monitor the revalidation process with one goal in mind: get people back to work and sports as successfully and soon as possible.

Notes