



SensUs

Medal
Submission Document

PULSe

Version March

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www.pulse-sensus.team

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January

1. Bronze

1.1 Register on SensUs Connect;
















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March

1. Bronze

1.1 Motivation;

Considering the impact of the current Covid-19 sanitary crisis on our lives, PULSe's team members were motivated to join a competition aiming at dampening the consequences of a potential future Influenza A outbreak. Getting the chance to participate in an international competition, with an interdisciplinary and international team, stimulates them to step out of their comfort zone. PULSe's main objective is to develop a feasible, creative and innovative biosensor by integrating each team member's knowledge and skills. We believe that "teamwork makes the dream work". Hence, our goals will be achieved through working as a team rather than individual team members. PULSe is an 11 bright and ambitious minds' team wanting to take the extra mile. In a nutshell, PULSe's motivation and willingness to evolve on a personal and professional level is its main driving force.

May

1. Silver

1.1 Meet with Alumni;


Attendees	SensUs KU Leuven team 2020 alumni: Roozbeh Yazdanpanah Ravari, Torben Roy, Aditya Badola; Ine Mols SensUs KU Leuven team 2021 (current) PULSe: Ivana Janíčková, Darina Abaffyová, Anais Hubart, Eleonore Wolters
Goal of the Meeting	Discuss organizational and technical insight with KUL SensUs team alumni
Date	20/05/2021
Preparation time	1 hour
Duration	1 hour
Summary	<p><i>General information</i></p> <p>The meeting was organized with the KU Leuven SensUs team alumni of 2020. The meeting started with a short informal discussion that was followed by a brief presentation of our team's biosensor concept. Next, we discussed technical aspects of our concept as well as tactics of planning and organizing lab work during summer and business plan. <i>Technical insights</i></p> <p>The discussion was both, about the bioassay aspect as well as the sensor technology aspect of the biosensor development. Regarding the bioassay, we identified a problem in the complexity of the assay, which might have an influence on the time limit of the SensUs competition. From the aspect of sensor technology, we discussed the overall chip design (channels, passive/active chip, simple/PDMS chip) and the use and mixing of the magnetic beads. As the sensor concept of the alumni also worked with magnetic beads, they could suggest some solutions to problems we are facing. <i>Business insights</i></p> <p>The translational potential of smartphone-based readout was discussed. In particular the problems with designing the read-out system only for one smartphone type. Also, we received tips on building the business plan. <i>Organizational insights</i></p> <p>As many of the participants of the 2020 team were due to covid pandemic in their home countries, the organization of lab work and experiments were the responsibility of fewer people.</p>
Evaluation	To conclude I believe we learned valuable information that will help us to move our work forward.



June

1. Silver

1.1 Interviews with medical professionals;

Professional Name	Cedric Hillegeer
Short description about professional	Cedric Hillegeer is part of the new generation physicians and is part of what we call a first line support in the COVID-19 crisis. He studied general medicine at the University of Antwerp and is specialized in family and sports medicine. Of course, during the pandemic there was not much time for sports medicine and so his focus was on family medicine. He practices in Temse, a rural town in East-Flanders, where he saw the devastating effects of COVID-19 in both younger and older populations.
Conducted by	Anaïs Hubart & Emily Rosschaert
Date	25/06/2021
Preparation time	3 hours
Duration	45 minutes
Summary	<p>Mr. Hillegeer described the beginning of the pandemic as a complete chaos. While we received images from the traumatic situation in Italy, Belgium had no plan and on top of this there was a big lack of equipment. It was scary because one had no idea what the risk factors were, even young patients were hospitalized. Patients showed no abnormal lung sounds but there were some specific symptoms like loss of smell and taste. COVID-19 is primarily a respiratory disease but also has prothrombotic effect.</p> <p>All this emphasizes how important it is to develop a plan for specific types of viral pandemics. Another crucial factor is the possibility to test. Mr. Hillegeer made clear that his preference lay with the GP's performing the tests themselves. People breaking their quarantine during this crisis proved that they aren't always trustworthy. Of course, there are some requirements before a test can be used at a GP's. A test should be available at a low cost and have high specificity and sensitivity. Ideally a test should not take more than 10 min, since a consultation lasts around 15 min. A connection between the test and a healthcare application like CareConnect would be a big plus. It would be easier to follow up patients and have a clear view out the spreading of the virus.</p> <p>Clear communication towards the public and pointing out their responsibility is also a key element in dealing with a pandemic.</p>
Evaluation	We filtered for the information that was useful for us and that we could apply in our business plan or development of the biosensor.
Screenshot	 A screenshot of a video interview. On the left, a woman with long dark hair and glasses, wearing a patterned top, is smiling. On the right, a man with short dark hair and a beard, wearing a red polo shirt, is also smiling. A small inset video in the bottom right corner shows a third person, likely the interviewer Emily Rosschaert.

2. Gold

2.1 Organize online Event;

Title of Event	Meet the Teams by PULSe
Date	29/03/2021
Preparation time	3 weeks
Type of event	Networking, quiz, meeting of the different teams
Abstract	As in these corona times the importance of socialization and possibilities of online activities have become even more apparent, we decided to organize an event where we can meet people from other teams. The international aspect of the competition, i.e. the contribution of teams from all over the world, has made this idea even more attractive, given otherwise we could only meet at Eindhoven (which might not even be possible for all teams now).
Objective of activity	Getting to know each other
Promotion	SensUs Connect, e-mail, Insagram chat message

 Darina Abaffiyová created an event Meet the Teams by PULSe 2 months ago

Dear international SensUs teams, dear SensUs organization,

Wherever you are in the world right now, whatever you are doing: STOP! You are about to read a message of major importance:

YOU ARE AMAZING! HOPE YOU ARE HAVING A GOOD DAY!

Hopefully, this put you in a good mood and makes you want to read further. The PULSe Team is taking the initiative to organize the first meeting event. The event will take place online through zoom, the link can be found below.

WHAT? Quiz & get-to-know-each-other time.

WHEN? March 29th, at 5pm (GMT+1)

WHERE? [Zoom](#)

REQUIREMENTS? Motivation, a competitive mindset and first and foremost: a big smile.

Please, react to this event if you're interested in joining us so we know how many people to expect.

We are looking forward to meeting you on the 29th of March.

PULSe Team (KU Leuven, Belgium)

[Read less](#)



15 Likes · 2 comments

Like Comment

Meet the Teams by PULSe



SensUs@biw.kuleuven.be <sensus.biw@...>
To



24/03/2021

Hello Team Captains!

We've all been busy studying and working on our biosensors, and yet we haven't had the time or the opportunity to meet each other. :(We'd like to go ahead and fix that and that's why we're organising an event where we'd love to meet you all!

On top of that, this will already help you to fulfill one of the silver medal criteria. Yay! :)

Please, mark your attendance on the event on Connect (<https://connect.sensus.org/events/p/41694>) or respond to this e-mail, so we have an idea of how many we'll be.

We're so excited to meet you. See you on Monday!

Best regards,

PULSe Team



Partners	None
Contact person	Wout Mens, Eléonore Wolters
Evaluation method	To evaluate this event, we will consider the number of participants we managed to gather, the time they decided to spend in the event and the overall atmosphere and activity/passivity of all participants.

Evaluation (fill in after the event)	
Number of participants	18 (of which 4 from PULSe)
Lessons learnt	We learned that despite the simplicity of the idea, it is important to take a focused moment to plan, consider the audience and the media to reach the audience. From the event itself, we learned that other teams are going through similar struggle and worries as we do, which gave us a little boost for the upcoming months.
Recommendations	A recommendation would be to start planning a little earlier and use more media to promote the event well in time.

Picture

The top screenshot shows a Zoom meeting grid with 18 participants. The bottom screenshot shows a quiz question: "Which of the following is not the analytical aim of SensUs 2021 competition?" with four options: Rapid, Accurate, As easy as possible, and As much as possible. The quiz shows 18 participants and 0 answers.

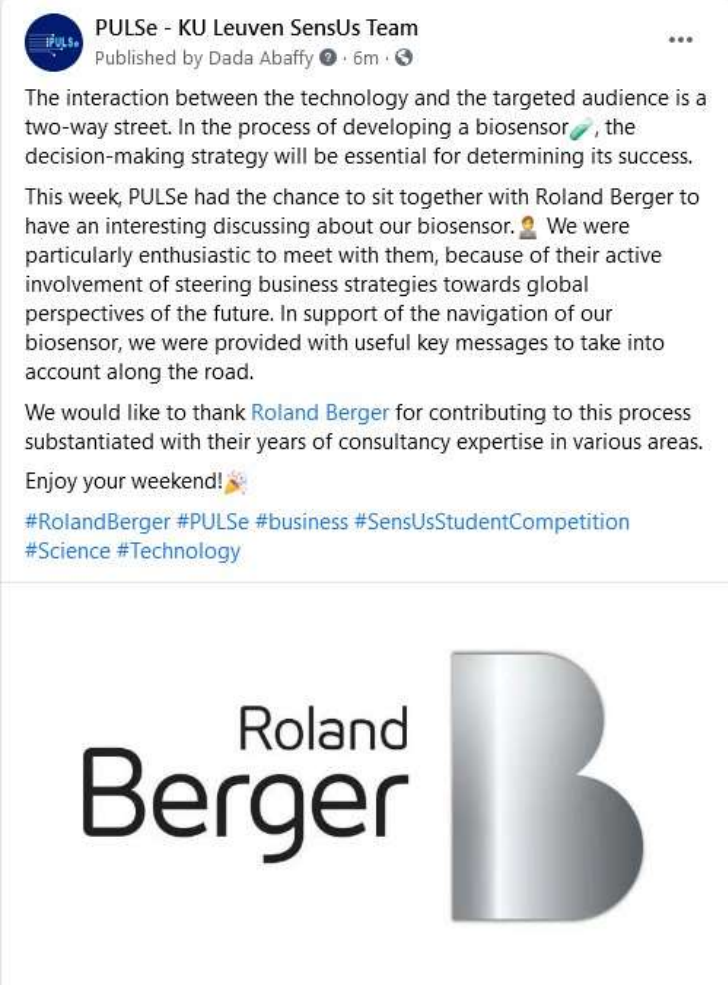
July

1. Silver

1.1 Meetings with a SensUs Partner;

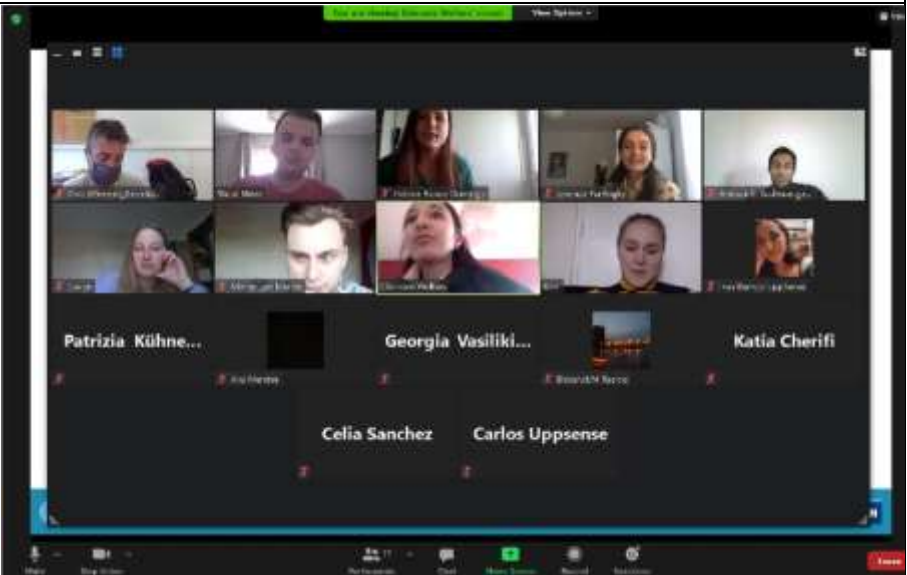
Partner	Roland Berger
Attendees	PULSe: Lai-Jin (Lily) Leung, Evelyn Lerinckx, Vasileios Loukopoulos and Jintong Ge; <u>Roland Berger</u> : Robert-Jan van der Vorm

Goal of the Meeting	We scheduled a meeting with Roland Berger to consult their expertise for the business plan of our biosensor. We selected this company on the basis of their active involvement of transitioning business strategies towards global perspectives of the future. We were particular enthusiastic towards their mission in creating awareness for sustainability and climate change, as we wanted to understand how this can be implemented in one company's strategy. In addition, we were interested to learn more about their obtained perspective on the Digital Transformation of the Health Industry.
Date	20/07/2021
Preparation time	3 hours
Agenda	<ol style="list-style-type: none"> 1. Recapitulation and highlights of the concept of our biosensor 2. Business plan <ol style="list-style-type: none"> a. Searching the market potential? b. Narrowing the customer section? c. Focus on sustaining or disruptive innovation? d. What ways to make money on a free app? e. Subscription service on the app? f. "The perspective the Digital Transformation of the Health Industry" <p>Remark: The questions are simplified in this document to retain an organized overview; a more detailed version of our agenda can be delivered if requested.</p>
Duration	45 minutes
Summary	<p>The start-up of a company revolves around a good decision-making strategy and the interaction between the technology and the target audience is a two-way street. We discussed the directions of our business with Mr. van der Vorm to have his opinion on in what direction our business plan should be headed, as we want to ensure making the right choices for the launch of our biosensor. He helped us readdress our focus by explaining that it's more important to direct our focus on the objective and giving the right arguments for the decisions rather than on what you choose. In specific, he informed us that our app should be part of our service. A way to earn money with an app is through advertising. However, people dislike this when using an app. On the other hand, a subscription strategy will become a barrier for customers.</p> <p>Regarding sustainability and climate change, it's a bonus to be able to have this as part of your business plan. However, in this case, it should not be our first priority. In deciding to pursue it, we should assess if we would have a positive impact or not.</p>
	<p>In the Health Industry, the customer's behavior will be country/culture-dependent in terms of consumption, involvement and their willingness to assent to certain services. Its market potential of biosensors can be obtained through market reports (top down approach). They don't necessarily need to be obtained through buying; we can also utilize google.</p> <p>In conclusion, it's important that your business centers around how you motivate your decisions. This way you can make any case work. A business plan is best kept easy to understand and it starts with focusing on one or two customer's segments.</p>
Evaluation	The valuable information we gathered from this meeting will contribute to our decisionmaking strategy for the business plan.

<p>Minutes</p>	<p>Chips might be a kind of waste: Know what's the impact firstly and then think about solutions eg.: calculate how much waste per year</p> <p>Global distribution: one country first and then more countries and then global.</p> <p>Search marketing: Use google. Can send us a report?</p> <p>Customer section: Choose one group in the business plan. Figure out who is the most important to change the value. We can make some assumptions. In reality, companies normally do interviews.</p> <p>Disruptive innovation: Think about what is our goal. In the business plan, let others understand our choices and make some arguments for our choice. Convince them we have the best idea in the world.</p> <p>Make money from the free app: As a service of our product. Advertising (but people hate them).</p> <p>Think about 3 reasons to convince others to invest in this product and convince them your choices are correct. The choices in the business plan depend on what you want.</p> <p>Digital transformation: Need consent. He can help us ask his colleague about the details. It's country/culture-dependent.</p>
<p>Social Media Post</p>	 <p>PULSe - KU Leuven SensUs Team Published by Dada Abaffy · 6m · 🌐</p> <p>The interaction between the technology and the targeted audience is a two-way street. In the process of developing a biosensor, the decision-making strategy will be essential for determining its success.</p> <p>This week, PULSe had the chance to sit together with Roland Berger to have an interesting discussion about our biosensor. We were particularly enthusiastic to meet with them, because of their active involvement of steering business strategies towards global perspectives of the future. In support of the navigation of our biosensor, we were provided with useful key messages to take into account along the road.</p> <p>We would like to thank Roland Berger for contributing to this process substantiated with their years of consultancy expertise in various areas.</p> <p>Enjoy your weekend! 🎉</p> <p>#RolandBerger #PULSe #business #SensUsStudentCompetition #Science #Technology</p> <p>Roland Berger</p>

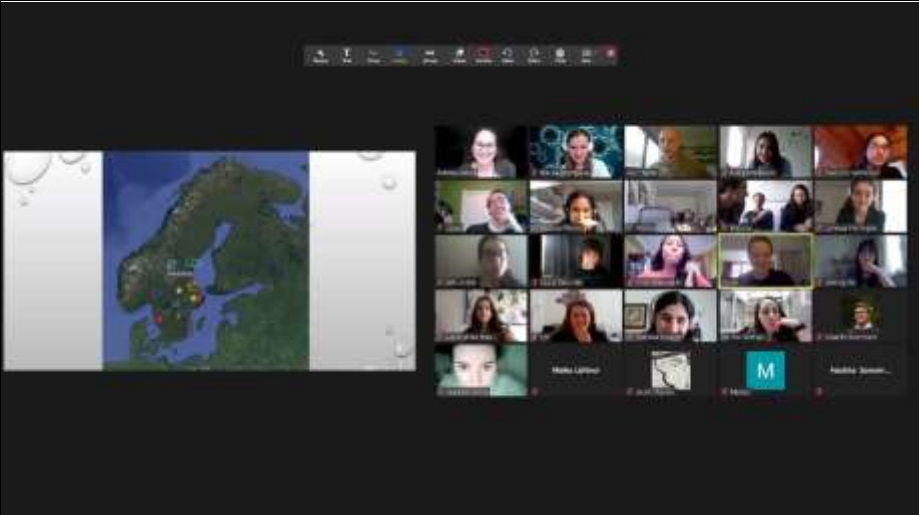
1.2 Be present at two online events;

<p>Title of activity 1</p>	<p>Meet the Teams by PULSe</p>
<p>Organized by</p>	<p>PULSe</p>
<p>Date</p>	<p>29/03/2021</p>
<p>Type of activity</p>	<p>Networking, quiz, meeting of the different teams</p>

Abstract	As in these corona times the importance of socialization and possibilities of online activities have become even more apparent, we decided to organize an event where we can meet people from other teams. The international aspect of the competition, i.e. the contribution of teams from all over the world, has made this idea even more attractive, given otherwise we could only meet at Eindhoven (which might not even be possible for all teams now).
Objective of activity	Getting to know each other
Lessons learnt	From the event itself, we learned that other teams are going through similar struggle and worries as we do, which gave us a little boost for the upcoming months.
Recommendations	A recommendation would be to start planning a little earlier and use more media to promote the event well in time.
Screenshot	

Title of activity 2	Uppsense Pub Quiz
Organized by	Uppsense
Date	05/05/2021

Type of activity	Networking
Abstract	Similarly to our event, the point was simply to relax and meet members of other teams and do some fun little activities together – like talking about customs and languages in different countries in a game-like way.
Objective of activity	Having a fun time among the teams, get to know each other a bit.

Lessons learnt	Learned about some customs and idioms of the different countries which the teams come from.
Recommendations	We think the event was organized very well and hence we have no remarks in this section.
Screenshot	

2. Gold

2.1 Present at a professional Event;

Title of event	<Add a title>
Date	<Date of event>
Preparation time	<Preparation time>
Type of event	<e.g. conference, networking>
Abstract	<Brief description of the event. Explain here why it is a professional event>
Objective of event	<e.g. connecting industry with students, giving feedback on current team>
Partners	<Which partners were present at the event? e.g. university organizations, industry, speaker, etc.>
Contact person	<Who can be contacted by the SensUs Organization for questions?>
Evaluation method	<Add a description about how you will evaluate the activity>
Evaluation (fill in after the activity)	
Number of participants	<Number of participants at the event>

Lessons learnt	<Add a description of the lessons that you learned>
Recommendations	<Add recommendations for other local communities>
Picture	<Add a picture or screenshot of you being present here>

August

1. Bronze

1.1 Tips for subsequent SensUs Teams

- Tip 1: Plan a big organisational meeting at the start to:
 - Plan a fixed day and frequency for meetings (for each team)
 - Make excel file with all the deadlines and divide the work
 - Make everyone's role in the team clear
- Tip 2: Take time to build up a nice relationship with your teammates, go grab a coffee, do a pizza night, or go for a drink after a hard day of work in the lab.
- Tip 3: Take time to prepare the questions for the feedback moments and partner sessions. Very valuable information comes out of these meetings.

Valuable tips in the document:

- (General) Promote positive curiosity, even to outside your Team and mentors. Share your findings. This can be done through social media but also through your progress meetings and direct communications.

Team(s): UppSense

- (Planning and time management) Note and analyze the mistakes and learn from them instead of hiding them. Both sharing successes and frustrating failures with the Team reduces burnout and improves Team cohesion.

Team(s): Sensing Barcelona

- (Planning and time management) Do not hesitate to approach professionals and experts; they are often open and enthusiastic about helping us! When defining your scientific and business strategy, don't forget to talk with professionals of the different areas.

Team(s): BiosensUM, LxUs

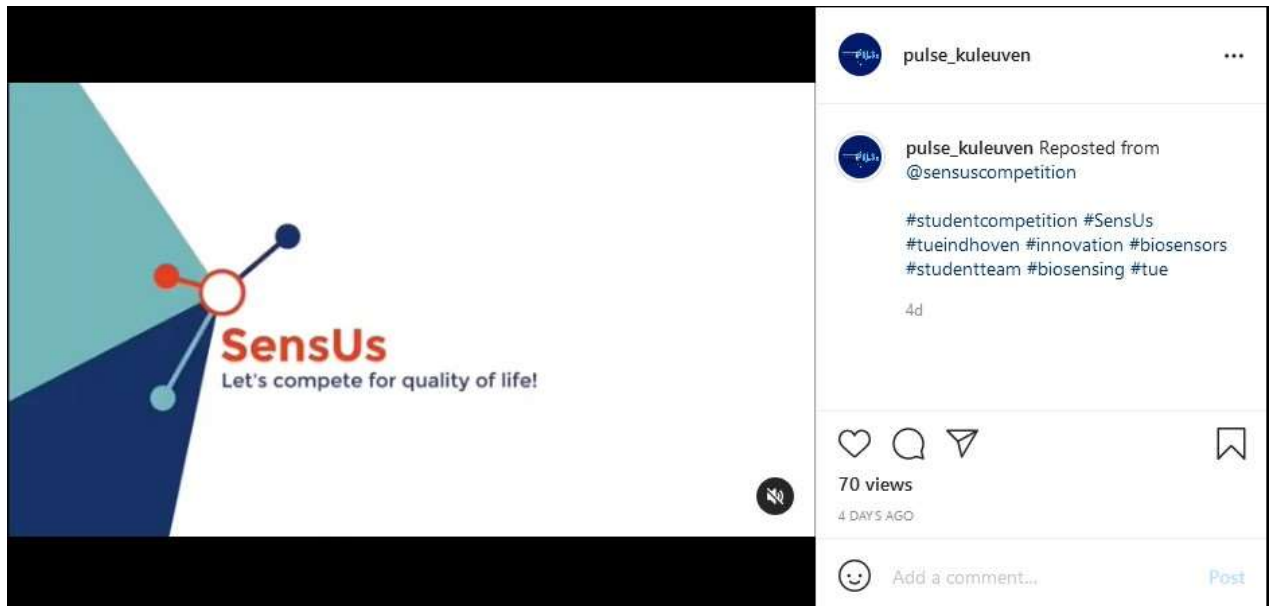
- (Working from home) Set smaller daily/weekly deadlines for yourself on what you need to contribute/deliver for the progress of the project and stick to them!

Team(s): SenseNC

2. Silver

2.1 Reposts on social media;

FIRST REPOST:




pulse_kuleuven Reposted from @sensuscompetition

#studentcompetition #SensUs #tueindhoven #innovation #biosensors #studentteam #biosensing #tue

4d

70 views
4 DAYS AGO

Add a comment... Post



SensUs - KU Leuven Team
Published by Dada Abaffy · 3 March at 09:15 ·

? ? Who is SensUs Student Competition? What do they stand for? Find out here!

#sensus2021 #sensuscompetition #SensUs #tueindhoven #innovation #biosensors

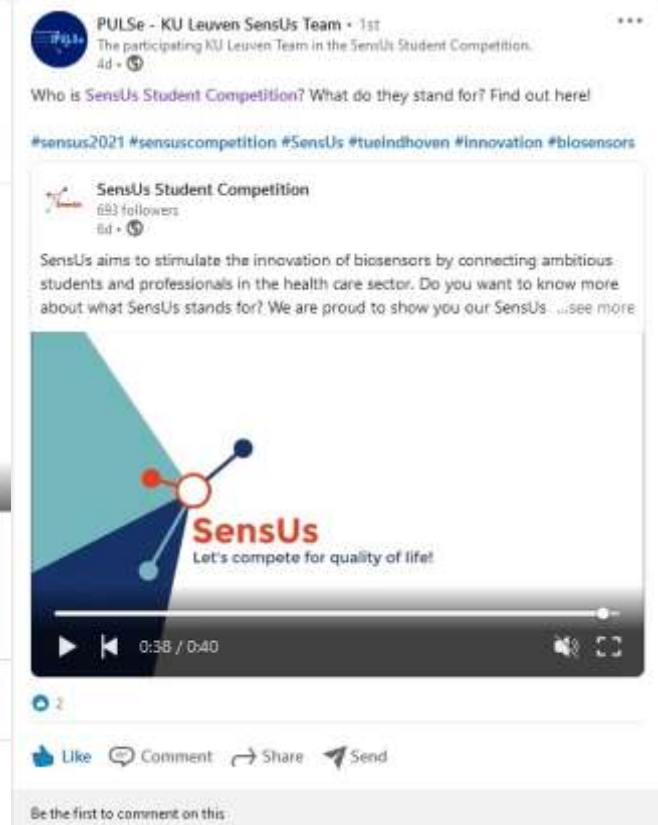
SensUs Student Competition
1 March at 16:00 ·

SensUs aims to stimulate the innovation of biosensors by connecting ambitious students and professionals in the health care sector. Do you want to know more abo... See more

181 People reached 13 Engagements Boost Unavailable

7

Like Comment Share



PULSe - KU Leuven SensUs Team · 1st
The participating KU Leuven Team in the SensUs Student Competition.
4d ·

Who is SensUs Student Competition? What do they stand for? Find out here!

#sensus2021 #sensuscompetition #SensUs #tueindhoven #innovation #biosensors

SensUs Student Competition
693 followers
6d ·

SensUs aims to stimulate the innovation of biosensors by connecting ambitious students and professionals in the health care sector. Do you want to know more about what SensUs stands for? We are proud to show you our SensUs. ...see more

2

Like Comment Share Send

Be the first to comment on this

SECOND REPOST:

PULSe - KU Leuven SensUs Team
Published by Dada Abaffy · 2m · 🌐

Learn more about this year's theme of the [SensUs Student Competition!](#) 🎥

SensUs Student Competition
7h · 🌐

"Today, more than ever, we experience the worldwide spread of a deadly virus. The current situation shows we are in dire need of solutions to be ready to face t... See more

0 People reached 0 Engagements Boost Unavailable

Like Comment Share

Comment as PULSe - KU Leuven SensUs Te... 📷 📹 🗨️

Press Enter to post.

PULSe - KU Leuven SensUs Team
The participating KU Leuven Team in the SensUs Student Competition.
now · 🌐

Learn more about this year's theme of the [SensUs Student Competition!](#)

SensUs Student Competition
756 followers
5h · 🌐

"Today, more than ever, we experience the worldwide spread of a deadly virus. The current situation shows we are in dire need of solutions to be ready to face the next pandemic!"

SensUs 2021 challenges the competing student Teams to come up with a biosensor to rapidly measure influenza in saliva. In this way, the next influenza pandemic can be overcome. Get to know more about the Influenza theme of SensUs 2021 by watching this video!

#studentcompetitions #SensUs #tueindhoven #biosensors #Innovation #biosensing #studentteam #tue

Like Comment Share Send

Add a comment...

22:24

pulsekuLeuven · 7h

This year's theme: Influenza A
#The Flu

sensuscompetition

sensuscompetition "Today, more than ever, we experience the worldwide spread of a dead... more"

Check out this video!
#Improve #Healthcare

@sensuscompetition

Send message

PULSe - KU Leuven SensUs Team
@PULSeKULeuven

The KU Leuven team participating in the SensUs Student Competition.
📍 Belgium 📧 pulse-sensus.team 📅 joined March 2021

22 Following 17 Followers

Tweets Tweets & replies Media Likes

You Retweeted

SensUs Competition @SensUs2021 · 7h

SensUs 2021 challenges the competing student Teams to come up with a biosensor to rapidly measure influenza in saliva. In this way, the next influenza pandemic can be overcome. See this video to get to know more about the Influenza theme of SensUs 2021!

Theme video SensUs 2021: Influenza, the next pand...
"Today, more than ever, we experience the worldwide spread of a deadly virus. The current ...
@youtube.com

THIRD REPOST:

PULSe - KU Leuven SensUs Team
Published by Dada Abaffy · Just now



SensUs 2021
What happens during the SensUs Weeks?

August 23rd-27th	Venture Building Program
Monday August 30	Workshop 'Sensors for influenza'
Tuesday August 31	Arrival of Teams at TU/e Campus
Wednesday September 1	Opening Ceremony High Schools Project Finale
Thursday September 2	Meet the Partners Event
Friday September 3	Testing Event SensUs Event 2021

Check out sensus.org

SensUs TU/e Eindhoven University of Technology

SensUs Student Competition
17 July at 17:00 ·

The SensUs Weeks are coming! Two weeks full of learning opportunities, knowledge exchange, interesting discussions, and, of course, the award ceremony of the Se... See more

3. Gold

3.1 Post on SensUs Connect every month; **FEBRUARY:**

E **Eléonore Wolters**
13 hours ago

Hello everyone!! We are happy to tell you guys more about us through this post! :) PULSe is the Belgian team representing KU Leuven in the SensUs competition. It is composed of 11 highly motivated students with highly diverse backgrounds. Six different nationalities, six different study fields, 1 common trait: the will to learn and leave their comfort zone. Brainstorming, researching, trying, enjoying will be the key words of this year's SensUs adventure. More than excited and ready for it, the team looks forward to start this competition with other great teams from all over the world!



2 Likes · 1 comment

Like Comment

Maxim Lambrechts
4 minutes ago

Having a good understanding of any problem leads to a successful solution. Therefore, it's important to understand why a biosensor might be an indispensable tool to detect infections in time. In the added video different counter measurements and their influence on the spreading of the infection are compared. One of which is early detection of carriers of the disease.

We and the other PULSe members hope this video is as insightful to you as it was to us.


[Simulating an epidemic](#)



Simulating an epidemic
YOUTUBE.COM
Experiments with toy SIR modelsHorse page: <https://www.3blue1brown.com>Brought to you by you: <http://3b1b.co/ise-thanks>Awesome fan-made ...


Like Comment

MARCH:

 **Jintong Ge**
2 hours ago

Hi everyone,

This is a very interesting video about how biosensors play a key role in the future of diagnostics. And it also comes up with some interesting ideas about the applications of biosensors in diagnostics. PULSe team hopes it can be helpful and enjoyable for you!



Biosensors and the Future of Diagnostics
YOUTUBE.COM

From cancer-diagnosing urine tests to smartphone Ebola surveillance, biotechnology is improving patient access to treatment and advice worldwide ...

1 Like

Like Comment


 **Vasileios Loukopoulos**
24 minutes ago

Hi everyone!

In PULSe we are sure that everybody eagerly anticipates to be in Endhoven in August, as we do! But would you like to first make a (virtual) stop at a city not far away... LEUVEN!

Leuven is where all the magic of the PULSe team happens! Here is a sneak peek of our awesome city!

<https://www.youtube.com/watch?v=x1nHfUgaoc>




I Luv Leuven: Leuven in motion
YOUTUBE.COM

First hyperfilm of Leuven, made by Basel Zoretsieda. 1 man, 2 cameras, 15.000 pictures and 100+ videos from more then 50 locations. Shooting took 4 ...

Like Comment

APRIL:

 **Lai-Jin (Lily) Leung**
9 minutes ago

Hello everyone,


With new perspectives established with the fast-track process of Covid-19 vaccines/tests and united force of expert researchers to reach a Universal Flu Vaccine, we are hopeful towards advanced and successful methods to prevent future pandemic outbreaks.

With today's PULSe post, we find that this video is a great way to send out an encouraging reminder into the Sensus community of why we all decided to participate in this amazing competition in the first place. As long as the quest for the Universal Flu Vaccine remains under development, succeeding in the Sensus competition's objective is essential in our global efforts to fight off future flu pandemics.

Let's express our excitement and gratitude for being able to be part of this amazing initiative altogether by directing our maximal efforts to come up with amounting solutions to demarcate the spread of influenza A.

[Is a Universal Flu Vaccine Within Reach?](#)

[Read less](#)



Is a Universal Flu Vaccine Within Reach?
YOUTUBE.COM

Researchers are a step closer to developing a universal flu vaccine to help prevent seasonal influenza, which causes millions of hospitalizations ...

Like Comment

 **Darina Abaffiyová**
2 hours ago

Hey there!

We hope you are all doing well and that your biosensor is gradually getting its shape. :)

Do you feel like you have seen all of Netflix by now? Or are you looking for something to watch in your lunch break without feeling like you're losing the time you should be studying (don't know about you, but here the exam period is quickly approaching)?

We want to recommend you a documentary series "Pandemic: How to Prevent an Outbreak".

<https://www.imdb.com/title/tt11497904/>

Check it out! We are curious to hear what you think.

[Read less](#)



Pandemic: How to Prevent an Outbreak (TV Series 2020-) - IMDb
IMDb.COM

With Syra Madad, Jake Ginnville, Sarah Ives, Holly Goracke. In this docuseries, meet the heroes on the front lines of the battle against influenza ...

Like Comment

MAY:



Eleonora Wollers
2 days ago



Dear Sensus community!

Hope you are all doing well wherever you live! We had good news in Belgium: the bar terraces reopen today!!

Anyway, today we would like to share our website with you all: <https://pulse-sensus.team/>! We spent a lot of time and effort on it and are quite proud!

If you want to follow us through some pictures on our websites or get to know the members/ their tasks within the team you can always have a look :)

[Read more](#)



HOME

PULSE-SSENSUS TEAM

Sensus COMPETITION Sensus is a community that raises awareness about the importance of biosensors in modern health care. Since 2016, the Eindhoven ...

2 Likes

Like Comment



Jintong Ge
3 hours ago



Hi everyone,

FULSe team wants to share with you about our University, KU Leuven. KU Leuven, officially known as Katholieke Universiteit Leuven, is the oldest university in Belgium. Here, students have an international environment, high-level education, and convenient life. If you want to learn more about life in KU Leuven, please watch this video. Enjoy!

[Study at KU Leuven: life in Belgium and student campuses](#)



Study at KU Leuven: life in Belgium and student campuses
YOUTUBE.COM

Like Comment

JUNE:



Anais Hubart
30 minutes ago



Hello everyone! I hope you are doing well!

Yesterday, I came across this very interesting talk from Leor Weinberger about "Can we create vaccines that mutate and spread?"

In this Covid pandemic context, with the rise of new variants and with the development of new vaccines, I thought this talk raised quite relevant questions.

Here below is the description of the talk and the link to it.

Have a nice weekend!

"Viruses mutate and spread from person to person, a dynamic process that often leaves us playing catch-up when there's a new disease outbreak. What if vaccines worked the same way? Virologist Leor Weinberger shares a scientific breakthrough: "hijacker therapy," a type of medical treatment that could attack, modify and spread alongside a virus, potentially treating afflicted individuals and slowing the spread of infections like HIV."

https://www.ted.com/talks/leor_weinberger_can_we_create_vaccines_that_mutate_and_spread?utm_campaign=tedsponsored&utm_medium=referral&utm_source=tedsponsor

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Leor Weinberger: Can we create vaccines that mutate and spread?
TED.COM

Viruses mutate and spread from person to person, a dynamic process that often leaves us playing catch-up when there's a new disease outbreak. What ...

Like Comment



Vasileios Loukopoulos
10 hours ago



Hello everyone!

Probably most of you had exams this period and we hope it went well for everyone!

In case you want a break, here is a (small) video talking about the origin of the flu.

Hope you enjoy and now we can focus more on the flu again!

<https://www.youtube.com/watch?v=KRLH0C4PSE>




Tracking down the sneeze that started seasonal flu
YOUTUBE.COM

Where does the flu come from, and how can we make the flu vaccine better? A scientist armed with pipe cleaners and 10,000 RNA samples explains. Vox

1 Like

Like Comment

JULY:



Emily Roschaert
11 hours ago


Good evening everyone!

Today we want to talk about a more sensitive, but very important subject, "How the pandemic affects the mental health of young people".

The SensiUs competition contributes to the power of motivation. We all are developing a biosensor which would help in preventing big outbreaks, and thus severe measures that force ourselves into isolation in the future. Also, does an organization like SensiUs gives a chance to young people to come together, to work as a team, and to be there for each other, especially in difficult times like today.

We are looking forward to meeting everyone at the innovation days!

[Read more](#)




How the pandemic affects the mental health of young people | DW News
YOUTUBE.COM

After more than a year of lockdowns and losses, studies show that the pandemic is taking a massive toll on people's mental health. Especially young

1 Like

Like Comment



Darina Abatyyová
17 hours ago

Shoutout to the sponsors of the PULSe team, who have been of much help to us during the past months, whether it be financially or by providing support with their valuable knowledge.

FOx Biosystems - aims to revolutionize the life sciences industry and research market using its real-time, label-free analysis technology, with technology based on an innovative fiber-optic-based surface plasmon resonance biosensor - <https://foxbiosystems.com/>

Waters Corporation - creates business advantages for laboratory-dependent organizations by delivering practical and sustainable scientific innovation to enable significant advancement in healthcare delivery, environmental management, food safety, and water quality - <https://www.waters.com/>

Antelope DX - develops a point-of-need diagnostic platform that allows consumers and healthcare professionals to have on-the-spot access to key health parameters - <https://www.antelope-dx.com/>

Comate Engineering - translates the ideas from different sectors to a success in the market with focus on technical expertise, in combination with usability and a design that reflects the quality of the product - <https://www.comate.be/>

We are extremely thankful to all of them!

[Read less](#)

Like Comment

AUGUST:



Ivana Janičková
5 hours ago

Detecting influenza can be done also indirectly. In this article Google presents a method of detecting rise of influenza epidemics via an analysis of the health-related queries submitted to its search engine.

 **detecting-influenza-epidemics_(2).pdf**

Like Comment

3.2 World-value;

The impact of the covid-19 pandemic was devastating. People could not see their loved ones, and some even lost the person dearest to them. It's only intuition that next to physical implications, the pandemic also had a huge impact on the mental health of the general population [1].

Moreover, next to the social hardships, the economic impact also should not be underestimated. An example could be the sudden drop in European inflation or the crash in the monthly European industrial production during the most hectic period of the pandemic¹. This is a sign that pandemics and the infectious diseases causing them can leave financial markets volatile and unpredictable. Which in turn can have an effect on mental and physical health. Therefore, it's important that as a community we analyse every aspect of the pandemic, scientifically and socially, in order to ward off every possible pandemic in the future. Based on this information, a course of action to avoid future pandemics can be made. This is especially useful when handling pathogens with the same niche-role. A classroom example is the comparison between the flu and corona due to their similarities. Both pathogens can spread from one person to another before symptoms arise and are very potent, thus resulting in an extremely dangerous situation. In case of the flu, it's only a matter of time before another infectious strain mutates and unlocks pandemic causing characteristics like the "Spanish flu" of 1918-1920 [2].

The measurements against the corona virus clearly showed that vaccination is a cornerstone of the solution. However, there are people that cannot be vaccinated, thus gain no benefit from it. An example being immunodeficient people, meaning that more measurements have to be made to have a more inclusive protection. There are multiple other aspects that are crucial to avoid outbreaks of these very potent diseases. An important cornerstone, next to vaccination, is pre-emptive testing of those who are at risk, want verification or had a risky encounter. Limiting the spreading of a pathogen is beneficial for every member of society. However, the current tests are complex, not accessible and sometimes even have a deterrent effect on the user. Therefore, PULSe developed a biosensor that is convenient, user friendly and has conclusive test results in a timely manner.

To understand how our biosensor can become the next strategy for successful source control, it is important to return to the biology of flu pandemics: Within the Influenza family, there are 4 types of Influenza viruses: A, B (Yamagata and Victoria), C and D. It is globally accepted that Influenza type A and B are characterized by seasonal epidemic roots, whereas a further distinction defines Influenza A to have monopoly on the generation of a flu pandemic. In line with it being able to constitute the foremost potential strains, we generally observe more severe symptoms and less immunity in adults against this type than for Influenza B [3]. Taken all together, this validates directing our biosensor to detect the presence of Influenza A subtype H1(N1) in saliva samples. To put respiratory viral pandemics overall into perspective: a situation where supportive and curative resources are constrained to limitations, an intelligent preventive strategy with effective biosensors and vaccines restores the hope to nip a prospective second pandemic, caused by influenza A, in the bud.

[1] Salari, N., Hosseini-Far, A., Jalali, R. *et al.* Prevalence of stress, anxiety, depression among the general

population during the COVID-19 pandemic: a systematic review and meta-analysis. *Global Health* **16**, 57 (2020). <https://doi.org/10.1186/s12992-020-00589-w>

[2] Martini, M., Gazzaniga, V., Bragazzi, N. L., & Barberis, I. (2019). The Spanish Influenza Pandemic: a lesson from history 100 years after 1918. *Journal of preventive medicine and hygiene*, 60(1), E64–E67. <https://doi.org/10.15167/2421-4248/jpmh2019.60.1.1205>

[3] Centers for Disease Control and Prevention. (2019, November 18). Types of influenza viruses. Centers for Disease Control and Prevention.

¹ <https://ec.europa.eu/eurostat/web/covid-19/economy>

<https://www.cdc.gov/flu/about/viruses/types.htm?web=1&wdLOR=c253522D5-9FB5-4469-A50F7E3BB4C3536C>.