

**“How our school is addressing the strategic management challenges of One Health in research, education and society”**

Laurent Buisson, Dean & Executive Director

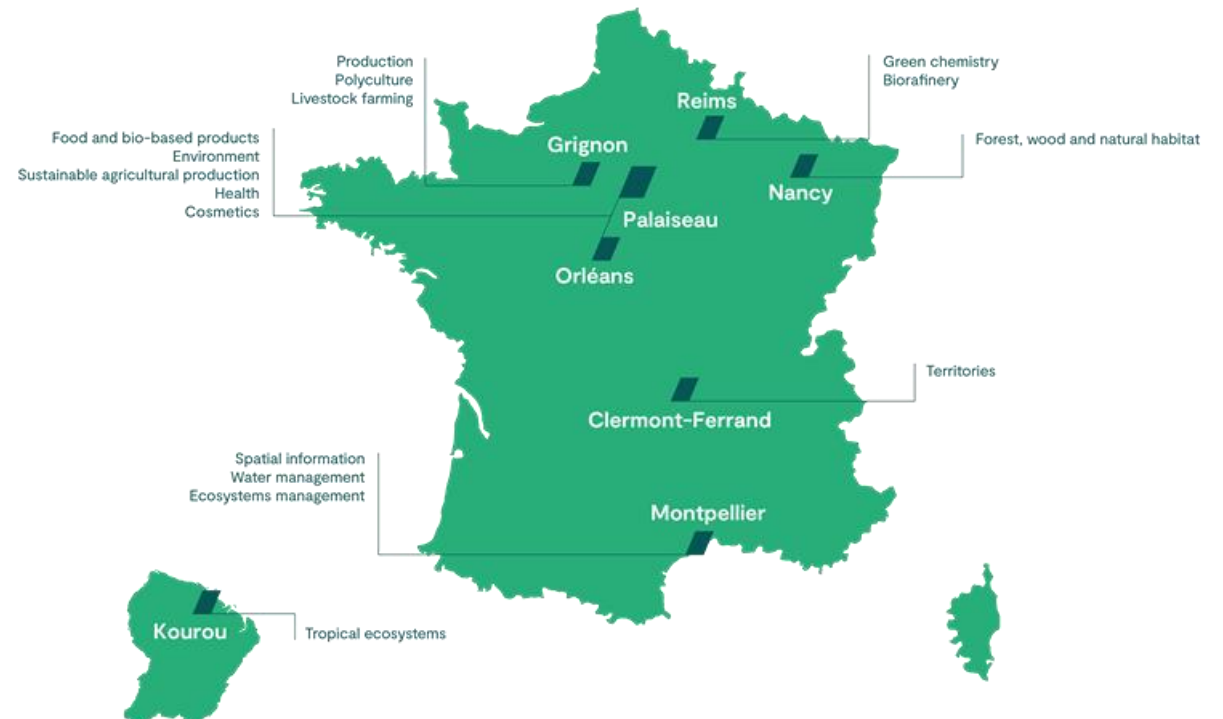
Julia Zinsmeister, Associate Professor



## Our Missions

### Addressing the main global challenges of the 21<sup>st</sup> century

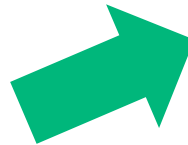
- Feeding a growing population in a sustainable way
- Protecting natural resources
- Developing the bioeconomy
  - Fostering innovation



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## Education

*Engineering curriculum, Masters of Science, PhD, Advanced Masters, Executive education*

~ 3 000 trained students per year

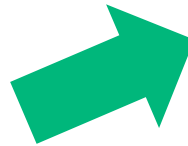
### 5 EDUCATION & RESEARCH DEPARTMENTS

SVS Life and Health sciences	SIAFEE Agronomy, Forestry, Water and Environmental Sciences and Technology
SPAB Science and Engineering for Food and Bioproducts	SESG Economic, social and management sciences
MMIP Mathematical Modeling, IT, and Physics Department	

## Our Missions

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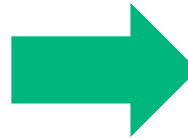
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## Research & Innovation

*4 thematic areas:*

- *Agricultural production and forestry*
- *Food and non-food transformations*
- *Sustainable management of natural resources and the environment*
- *Human health*

~ 250 academic/scientific staff, 24 Research Units, 5 Innovation Labs

## Agricultural production and forestry



## Food and non-food processing



## Microbiology and human health



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## Research & Innovation

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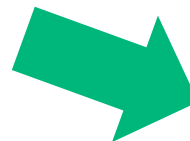
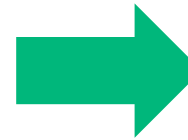
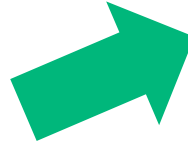
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## Strong collaborative environment

*A School of University Paris-Saclay, in one of the top 10 research clusters worldwide*

*~ Private & public research and education*

*~ Inter & Transdisciplinary*

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Our Missions



Research & Innovation

Address  
challenges

- Feeding
- Protection
- Development
- Food

**How do we address ONE HEALTH challenges at AgroParisTech taking into account our expertise – both in education and research – and our ecosystem?**

forestry  
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one of the top 8 research clusters worldwide

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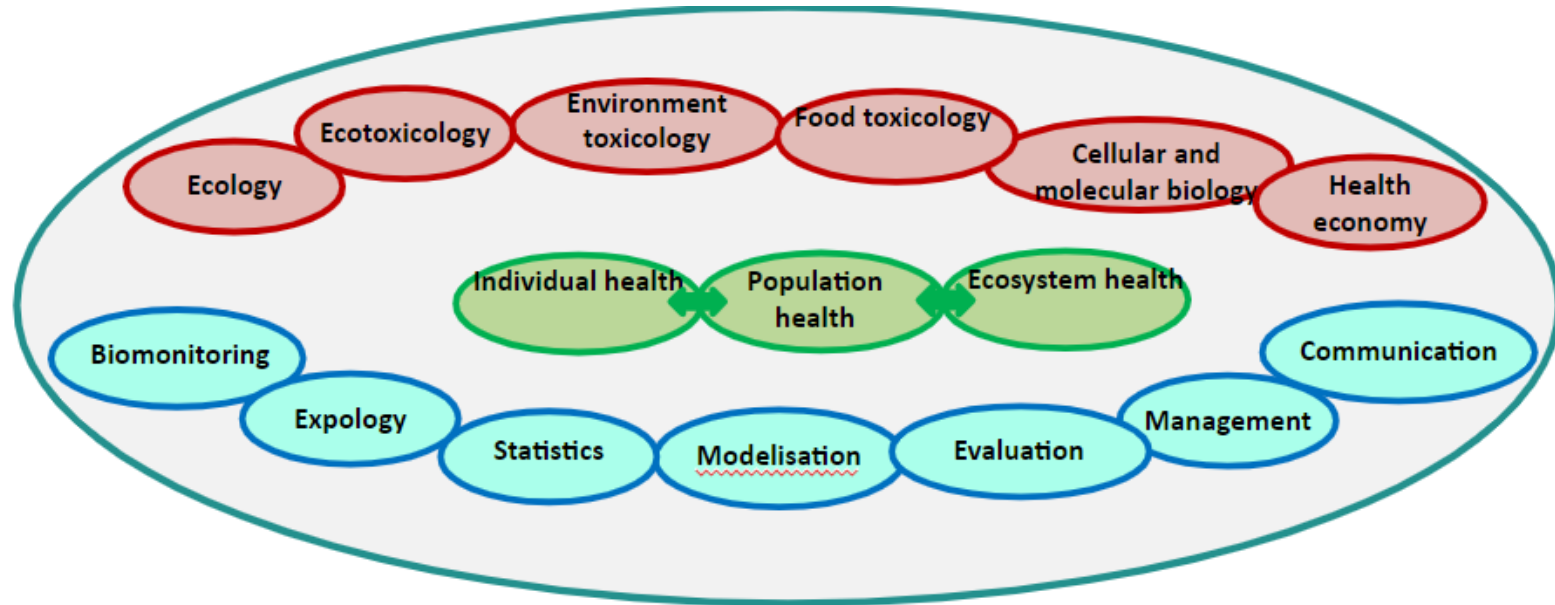
~ Inter & Transdisciplinary

# METATOX: specialization for 3<sup>rd</sup> year of engineering students (2<sup>nd</sup> year of master level) - *From evaluation to management of toxicologic risks for ecosystems and human health*

## Education

- Transdisciplinary
- Multi-scale approach
- Concrete case studies
- Open to other engineering students

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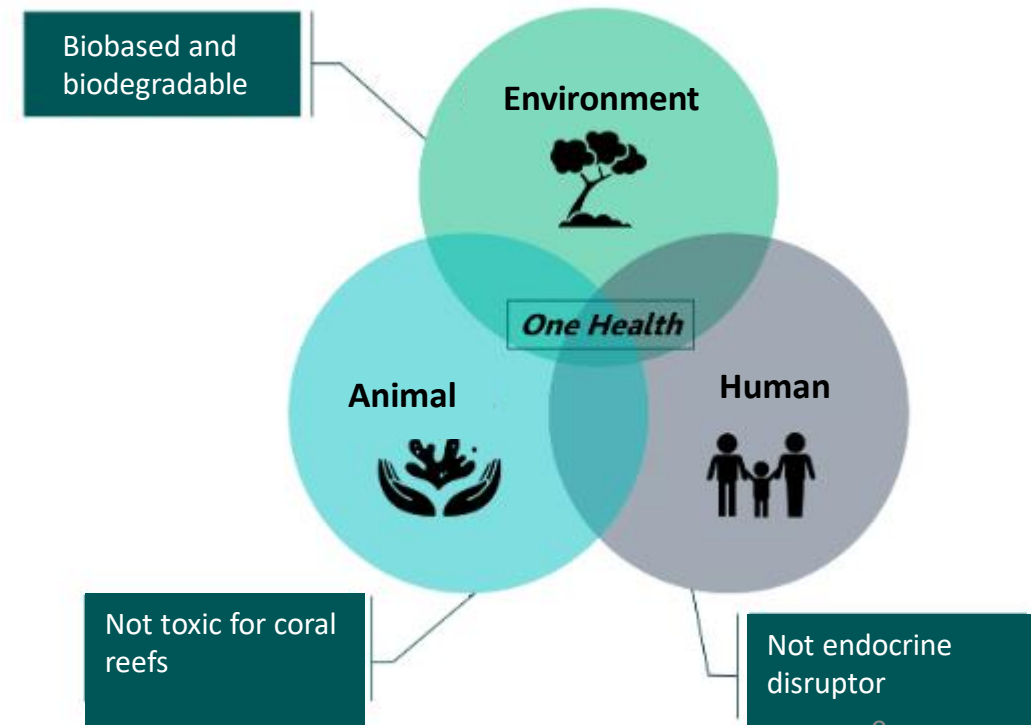
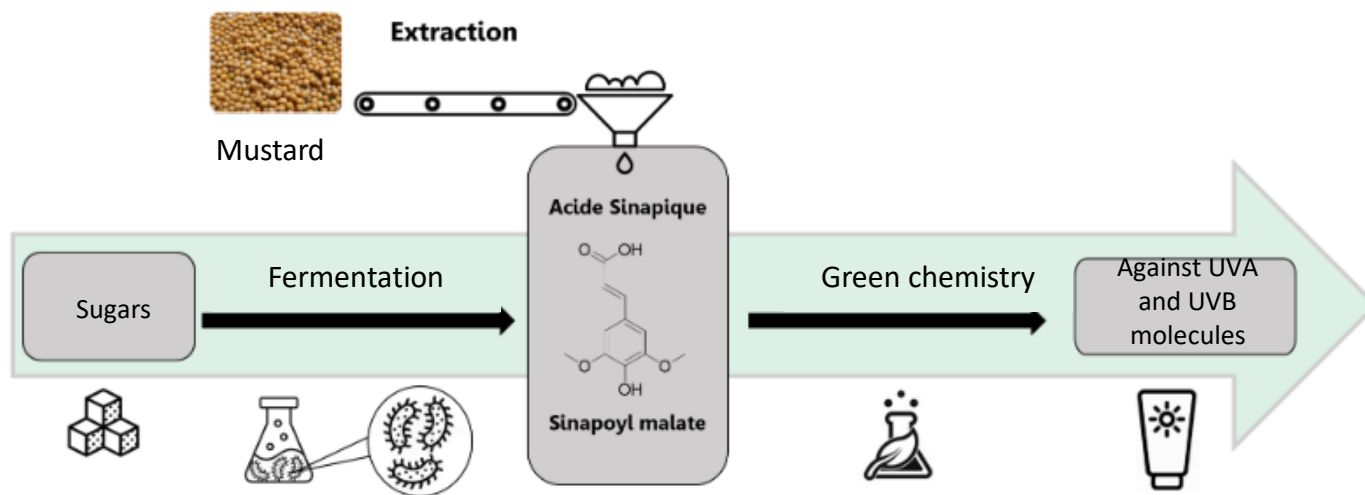






# From evaluation to management of toxicologic risks for ecosystems and human health

## → biobased and biodegradable sunscreen development

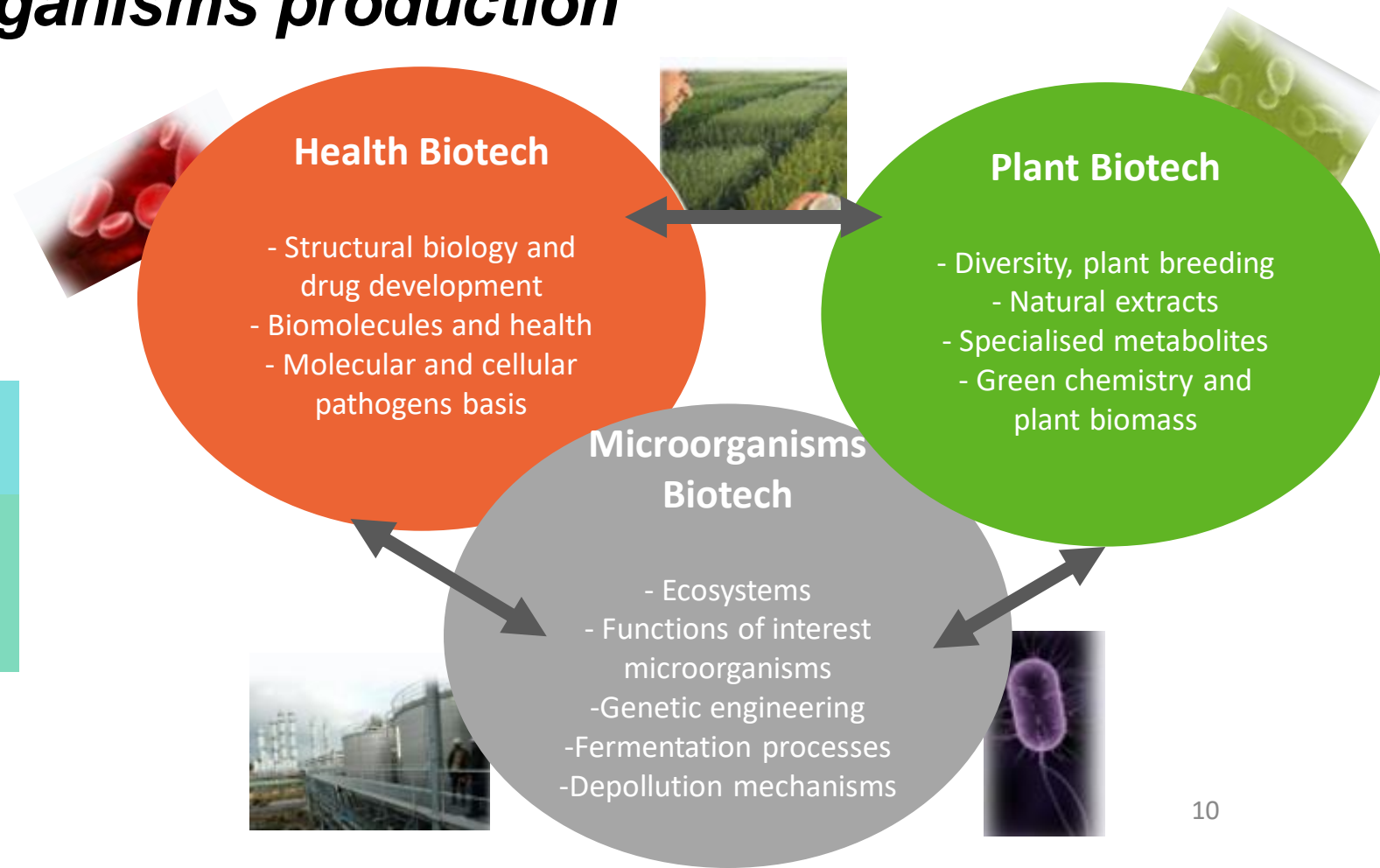


# BIOTECHNOLOGY: specialization for 3rd year of engineering students (2nd year of master level) - *Biology and Biotechnology for health, plant and microorganisms production*

## Education

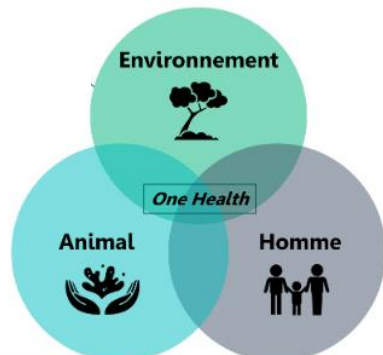
- Transdisciplinary
- Multi-organisms
- Concrete case studies
- Open to other engineering students

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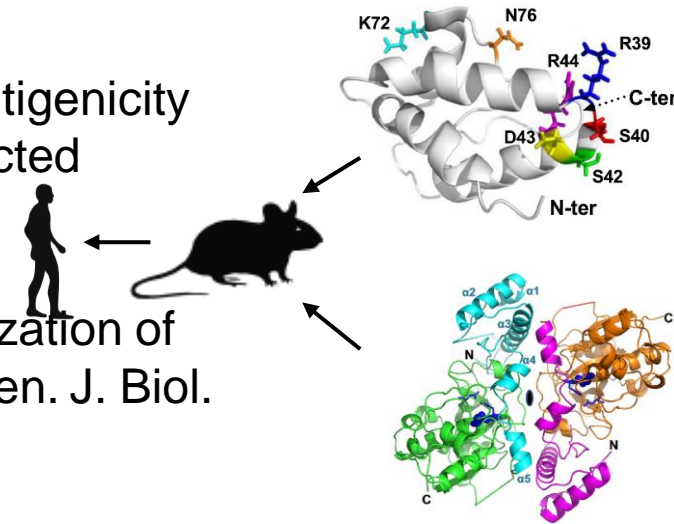




Ragweed (*Ambrosia artemisiifolia*)



- Mameri, H., *et al.* Critical structural elements for the antigenicity of wheat allergen LTP1 (Tri a 14) revealed by site-directed mutagenesis. *Sci. Rep* (2022)
- Groeme R., *et al.* Structural and Functional Characterization of the Major Allergen Amb a 11 from Short Ragweed Pollen. *J. Biol. Chem.* (2016)



## Plant quality / Human and animal nutrition

- Avezum, L., *et al.* Improving the nutritional quality of pulses via germination. *Food Reviews International*, (2022)
- Berthelot *et al.* The effect of maternal linseed supplementation and/or lamb linseed supplementation on muscle and subcutaneous adipose tissue fatty acid composition of indoor lambs. *Meat Science* 90 (2012)

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Our Missions:



Research & Innovation

Address  
challenges

- Feeding a growing population
- Protecting the environment
- Developing sustainable agriculture
- Fostering innovation

forestry  
managements  
of natural  
resources

5 InnLabs

interdisciplinary

ecosystem,

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**A new tool :  
The One Health Institute,  
A French collaborative approach**



## 4<sup>th</sup> National plan for health & environment

Interministerial public policy to reduce chemical, biological and physical contaminants in the environment and thus their consequences on human, animal and ecosystem health

3 Ministers of Agriculture, Health and Environment have entrusted 3 national higher education institutions to train public executive officers in risk management using the One Health approach



**INSTITUT  
ONE  
HEALTH**



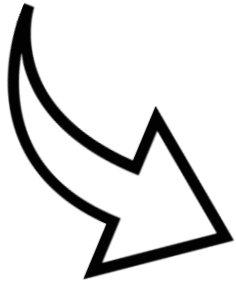
## Origin

- **France innovation strategy for infectious diseases**

→ From the French 2030 Acceleration Strategy

→ Included in EID@Lyon (graduate school focused on infectious diseases)

→ Association of veterinary, environmental and public health higher education institutions



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ONE  
HEALTH**

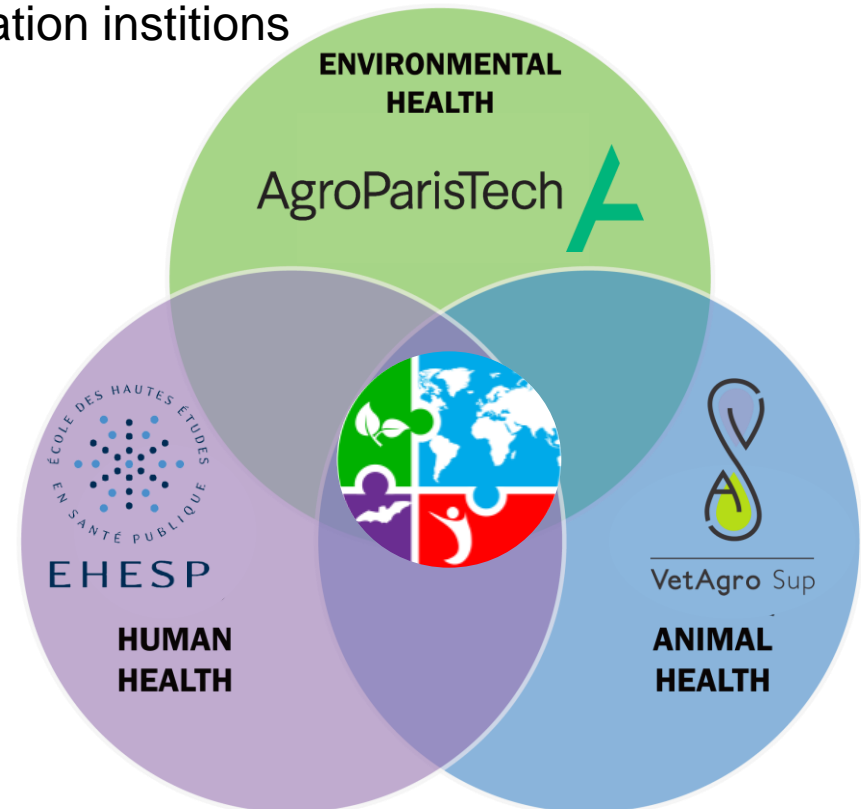
## Missions

- **Addressing the challenges of global health and emerging infectious diseases**

→ Training for public and private decision-makers

→ Expertise & Decision making

→ Public policy support on One Health issues

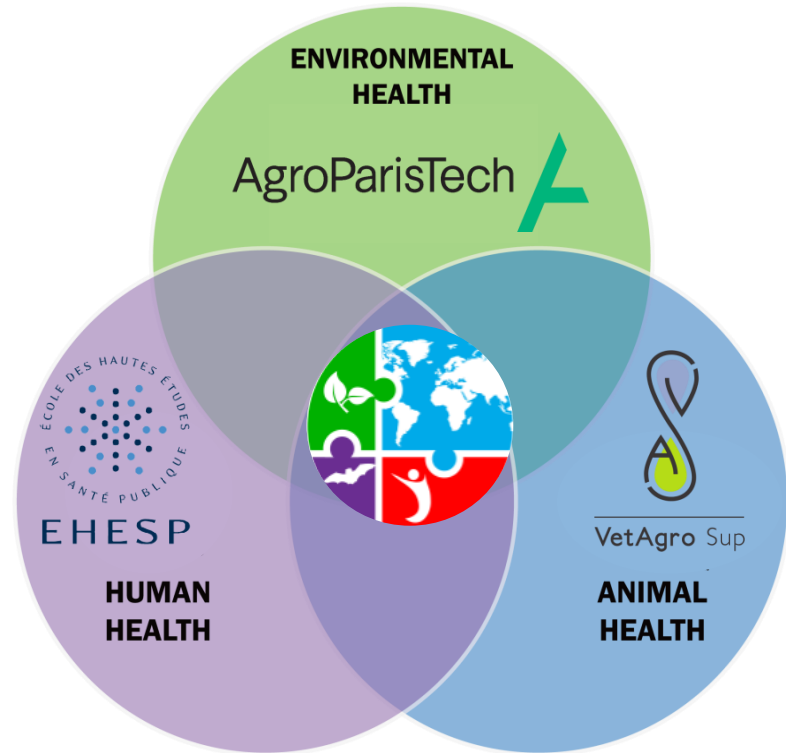




## Multi and cross-disciplinary

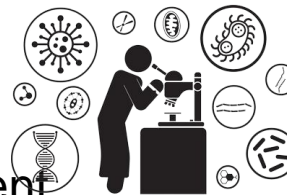
### Governance

- Through decision-making, elaborating the committees, adding and building partnerships
- Based upon the diversity, experiences and networks of the members of the institute

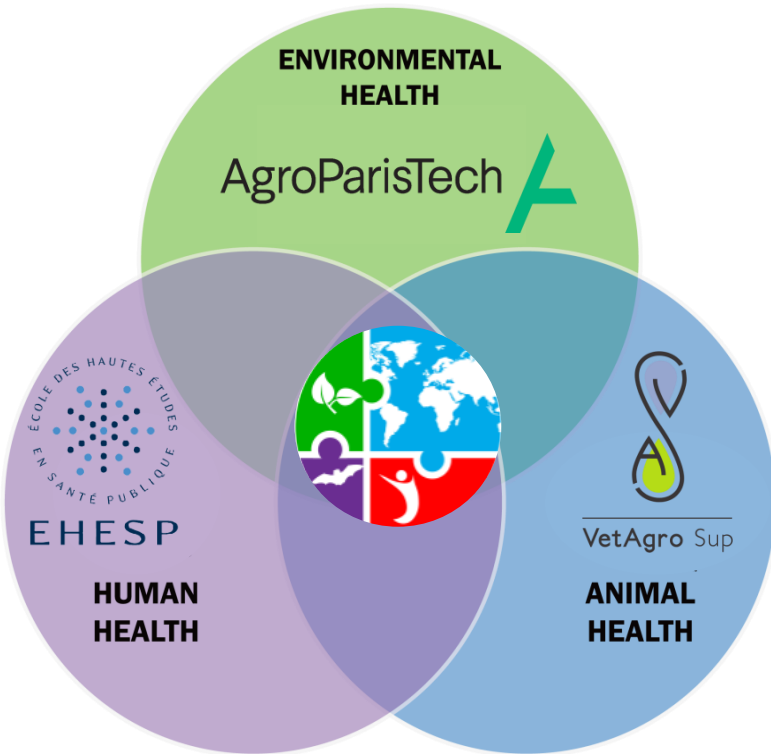


### Integration of lecturers of human, environmental and animal health

- To create a One Health methodology
- To design the programme and training content







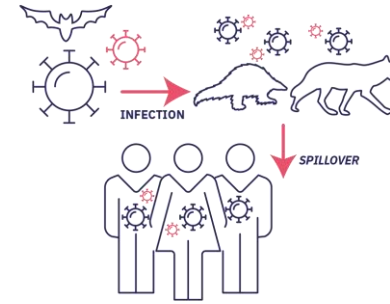
## Lecturers & partners

### Cross-disciplinarity

- Lecturers from the members of the consortium
- Experts from public, professional and academic organisations
- Partnerships with publics and private institutions to cover and represent all sectors of society with a One Health approach

## Scientific content & One Health issues

- Emerging infectious diseases
- Nuclear, radiological, chemical and biological risks
- Links between environmental, animal and human health
- Pressure of biodiversity loss and climate change
- Social and economic approaches
- Preventing and managing crisis
- Territorial issues



Thank you for listening



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HEALTH**