













EMJM - ERASMUS MUNDUS JOINT MASTER

PROGRAMME Leading International Vaccinology Education – LIVE

SUPPLEMENTARY DOCUMENT 4

LIVE ALUMNI

PREAMBLE

This file is the supplementary document 4 for the project of the Erasmus Mundus Joint Master "Leading International Vaccinology Education" (LIVE). LIVE is submitted to the Erasmus Mundus call of Feb 16th, 2023.

This document contains:

- An overview of the career paths of the LIVE Master Alumni after graduation and statistics concerning the LIVE Master Alumni
- Examples of LIVE-Alumni driven projects
- A list of scientific publications by LIVE Master Alumni that were a result of Master LIVE Internships
- Testimonials from LIVE Master Alumni themselves about their experience of the LIVE Master and the opportunities it provided

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hyperlinks refer to the paragraph



https://masterlive-vaccinology.eu/



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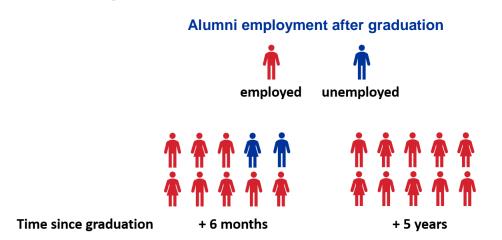
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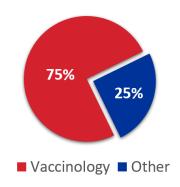
1. LIVE Alumni at a glance

LIVE Master Alumni is a diverse group of scientists living and working around the globe. The Alumni, encouraged by the LIVE Master coordinators, actively maintain a connection among themselves and across promotions. This international network of vaccinologists opens possibilities for cooperation that benefit global development and furthering of knowledge and science.

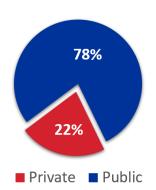
1.1. Career and gender balance



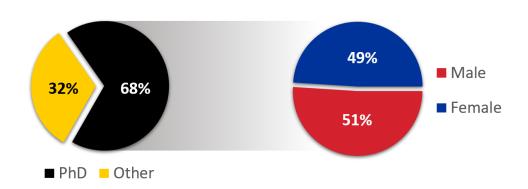




Alumni employment: public vs private sector

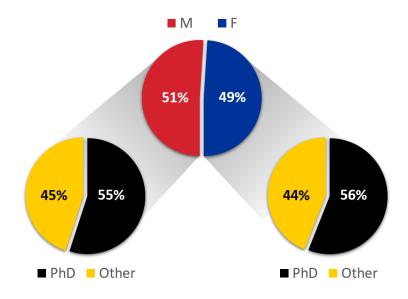


Alumni further education and gender distribution among those pursuing a PhD



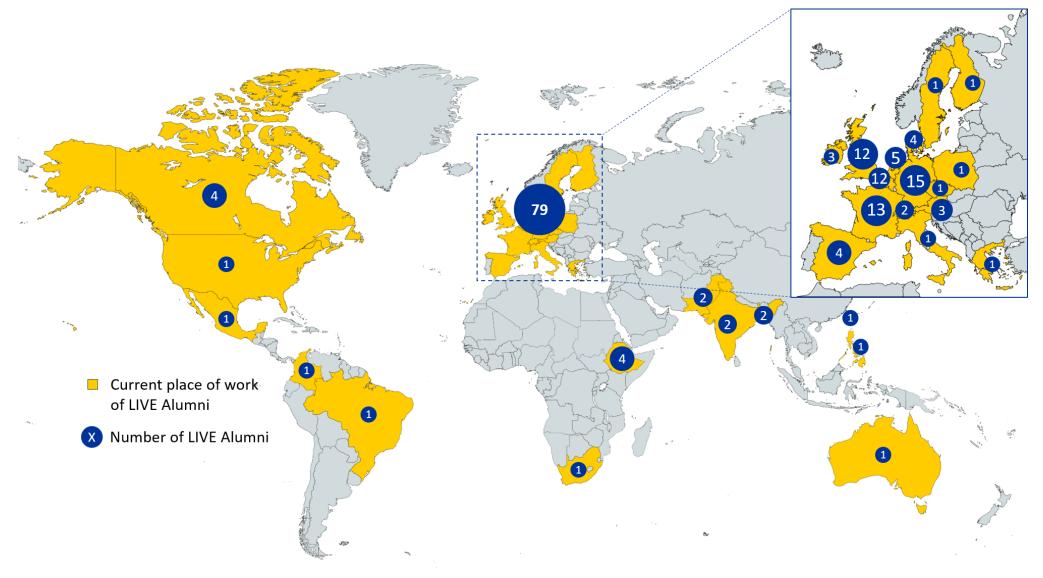


PhD vs Other employment within the gender groups of LIVE Alumni





1.2. Geography





2. Career profiles

2.1. Public health agent

Role: responding to outbreaks, disasters or other crises; collecting and analysing data; planning and conducing public health studies; providing individual or group counselling or training.

Areas of expertise: Environmental & Occupational Health, Health Administration, Health education, Epidemiology, Biostatistics, Infection Control, Child and Maternal Health, Reproductive health, Health Policy, Health Economics.

Requirements:

Degree/qualification: MPH, MSc, MD, PharmD, PhD

Skills: analytical skills, ability to digest and communicate data for decision making

2.2. Epidemiology

Role: developing policies of disease control at hospitals; offering training on communicable disease control measures; sharing expertise with public health departments on communicable disease control; conducting research on outbreaks to optimize response protocols.

Possible occupation: academic research epidemiologist, applied epidemiologist, field epidemiologist, infection control epidemiologist, clinical trial epidemiologist.

Requirements:

Degree/qualification: MPH, MSc, MD, PhD

Skills: scientific aptitude (ability to design and coordinate study, good knowledge on various statistical tests and software), communication skills, social intelligence

2.3. Scientific research

Role: writing research proposals and applying for funding, conducting experiments, processing and analysing results and data, publishing articles and presenting findings at scientific conferences, establishing industry/academia collaboration, training and supervising other members of the team, carrying out peer reviews of written publications.

Possible occupation: basic, translational, pre-clinical, R&D and clinical research.

Requirements:

Degree/qualification: MSc, DVM, PharmD, MD, PhD

Skills: scientific aptitude, attention to detail, communication skills

2.4. Communication

Role: internal communication: ensuing that employees from various departments are aware of the ongoing projects within the company, by distributing executive messages, making presentations, and conducting meetings; external communication: representing the company to stakeholders, media, and general public, developing and distributing materials to express what the company wants to share, making press releases and preparation for interviews.

Possible occupation: communication project manager, medical science liaison, science editor.

Requirements:

Degree/qualifications: MSc with communication, public relations, or marketing is a plus

Skills: written and oral communication skills, attention to detail, research ability

2.5. Medical affairs

Role: providing clinical and technical information for the company, sharing expertise and ideas for product development, claims and promotions, writing medical review and designing promotional materials for scientific



meetings, defending claims in the case of a challenge by competitor, challenging competitors claims, contributing on SmPCs (Summary of Product Characteristics), PILs (Patient Information Leaflets) and label contents.

Possible occupation: global public affairs lead, pharmacovigilance manager, regulatory affairs.

Requirements:

Degree/qualification: MSc, MD, PhD

Skills: knowledge of the relevant area, health system and regulation, communication skills



3. LIVE Alumni-powered projects - examples

3.1. MSc in Veterinary Immunology, Gondar University, Gondar, Ethiopia

 Type of project
 MSc program

 Name
 MSc in Veterinary Immunology

 Website
 https://cvmas.uog.edu.et/master-of-science-in-veterinary-immunology/

Presentation: Two LIVE Master Alumni from the Jenner (2016-2018) promotion - Saddam Mohammed Ibrahim and Anmaw Shite Abbat, both DVMs originally from Ethiopia, - have organised and launched the first MSc program in 'Veterinary Immunology' in Ethiopia. The two coordinators site the LIVE Master as one of the most important factors that inspired them to organise a MSc in Veterinary Immunology program in their own country. Another important driver of the program is the lack of trained professionals in the field of veterinary immunology in Ethiopia.

Chiversity of Golops

The MSc in Veterinary Immunology at the University of Gondar (Ethiopia) is a 2-year Master program that aims to provide qualified manpower for one of the major sectors of Ethiopian economy – livestock. Skilled specialists coming out of the MSc in Veterinary Immunology would contribute to **food security** in Ethiopia and other countries, and to **the growth of Ethiopian economy**.

The program is best suited for DVMs, animal health experts, but also lab technologists, biologists and MDs. The course plan includes Advanced immunology, Immunological methods, Infection immunity, Vaccinology and Immunotherapy, as well as two semesters dedicated to Internship and MSc thesis. This new MSc program received enthusiastic support of the Ministry of Science



Saddam M **Ibrahim** (left) and Anmaw S **Abbat** (right), Master LIVE **Jenner (2016-2018)** promotion

and Higher education of Ethiopia. Additionally, Saddam and Anmaw have engaged with the LIVE Mater network and LIVE Master coordinator Prof. Christine Delprat to establish cooperation with private companies in Europe.

To strengthen this MSc program, Saddam and Anmaw plan to further promote the program and build new partnerships with companies and labs, and also to grow the program by enlisting more students in each promotion.

You can learn more about this MSc program from one of the coordinators, Saddam:

https://mediacenter.univ-lyon1.fr/videos/?video=MEDIA210524134641125&autostart=true

Extract from VaxInLIVE2021 e-symposium, May 19th, 2021



3.2. IVAA - International Vaccinologist Alumni Association

Type of project		Alumni association		
	Name	IVAA		
	Website	https://ivaassociation.wixsite.com/ivaa		

Presentation: Originally created as part of the "Project Management" teaching unit during the M2-S3 of the LIVE Master, International Vaccinologist Alumni Association (IVAA) since developed into a community with regular events organized for the members. The association welcomes members among LIVE Master alumni, current LIVE Master students, but also lecturers and partners of the program. IVAA encourages its members to connect and exchange ideas and opportunities within the network.



IVAA identifies the following objectives: to **represent** the LIVE Master Alumni, and create an active network of alumni, current students, teachers and partners; to **exchange** information, ideas & vaccine-related news through social media platforms; to **communicate** job and PhD/Postdoc offers received from our network; to **recognize** and **promote** the achievements of alumni and students in the scientific community; to **organize** event for the members and to disseminate information about external congresses and scientific meetings.

IVAA was created on December 12th, 2018 by students from the **Pasteur (2017-2019)** and **Montagu (2018-2020)** promotion and officially registered in Lyon, France, on 1st January, 2020. Today IVAA is managed by a dynamic group of volunteers from different (current and past) promotions of the LIVE Master.

2022-2023 IVAA Steering committee:

President	President Vice-President		Secretary	Communication Manager	Membership Coordinator	Web Manager
M Saleh YUNUS	Niladri PAUL	Sana ABDUL MAJEED	Nieves DERQUI	Josselyn Andrea YAGUANA NAVARRETE	Dominika DMOWSKA	Adhara MADHURI
Barré-Sinousi (2020-2022)	Barré-Sinousi (2020-2022)	Barré-Sinousi (2020-2022)	Montagu (2018-2020)	Gilbert (2021-2023)	Kariko (2022-2024)	Gilbert (2021-2023)

Recurrent Activities:

- Monthly Journal Club: monthly online meeting (via Zoom) for IVAA members, where an Alumni or current student is invited to present a scientific article. The presenter is encouraged to present an article to which they have contributed or that deal with their research topic.
- **▼ Careers talks/Networking workshops**
- CV workshop
- **IVAA** regularly participates in the **VaxInLIVE** conference, the integration week

Past Events:

- ₩ LIVE Master graduation event (2021)



3.3. Vaccine Talks Collective

Type of project	Association	
Name	Vaccine Talks Collective	
Website	https://vaccinetalks.wordpress.com/	

Presentation: The Vaccine Talks collective is a product of a reality project called "SAQinVAC" for "Social Acute Question in vaccinology", created by the LIVE Master students from the Hilleman (2019-2021) promotion during the M2-S3 in the frame of the practical for the "Project management" and "Communication on vaccines and public health" teaching units. 8 students (managers and builders) were accompanied by 2 advisors (Dr Hélène Valentin (CRCL, immuno-virologist) and Dr Olivier Morin (UCBL, Ass Prof teaching didactics of socially acute questions in science and education for sustainable development from the Research Unit S2HEP).



The aim of the project was to address vaccine hesitancy in France and in the world more broadly, by taking apart specific examples of vaccine misinformation. The students have produced



₩ A Booklet https://vaccinetalks.wordpress.com/book let-acknowledge-controversies-of-vaccine-hesitancy/



A Video https://youtu.be/BNYnjrv_vHY



The deliverables are available for free in both French and English. These materials will be used by the S2HEP lab and beyond.



3.4. VacciNEXT 2023

Type of project	Event/Conference		
Name	VacciNEXT 2023		
Website	https://www.linkedin.com/in/vaccinext-powering-next-generation-vaccines-341709254/		

Presentation: VacciNEXT 2023 is a one-day symposium organised by the LIVE Master students. The first such symposium was held on Jan 12th, 2023, organised by the **Gilbert (2021-2023)** LIVE promotion students as part of the reality project **Junior's Innovative Research day** (JIR), "Project management" teaching unit.

The aim of JIR is to bring to light **innovation** in vaccinology particularly the research of **young scientists** pursuing a PhD in the field of vaccinology. Accordingly, four out of 5 invited speakers for the first edition of VacciNEXT were themselves LIVE Alumni. The event was open to all those wishing to attend in person in Lyon at Claude Bernard University of Lyon or online via Zoom.



Speakers at VacciNEXT 2023:

- Dur-e-Nayab Waheed, LIVE Jenner (2016-2018), PhD student, University of Antwerp, Belgium "HPV vaccination programs in low and middle-income countries"
- Vinnycius Pereira Almeida, LIVE Montagu (2018-2020), PhD student, University of Oxford, United Kingdom "Combining adoptive T-cell therapy with cancer vaccines to enhance anti-tumor immune responses"
- Leonie Mayer, LIVE Montagu (2018-2020), PhD student, University Medical Center Hamburg-Eppendorf, Germany – "Clinical development of MVA-based vaccines against emerging infections"
- ** Emil Joseph Vergara, LIVE Montagu (2018-2020), DPhil student, St. George's University of London, United Kingdom "Post-exposure immunization against multi-drug resistant tuberculosis"
- **Sebastian Ols**, PhD, postdoctoral researcher, Karolinska Institute, Sweden − "Diversifying the B cell response to immunization through multivalent antigen display"



4. Scientific publications by LIVE Alumni

4.1. Scientific articles published as a result of Master LIVE S4 Internships (non-exhaustive):

Schmitt, H.-J., Saidu, Y., Hrynkevych, K., Adam, A.M., Ankunda, C., Barro, C., Chacon-Cruz, E., Cobanoglu, Ö., Costa, B., Gutiérrez-Melo, N., Kawalazira, R.C., Khatiwada, M., **Mahmood, S.** (Pasteur 2017-2019), Mukumbayi, P.M., Müschenborg-Koglin, S., Naidu, A., Nikdel, M., Ribeiro-Moraes, J., Saha, S., Salloum, M., Sanicas, M.J., Stoma, I., **Tan, J.V.G.** (Gilbert 2021-2013), Sanicas, M., 2022. The formal ability of countries to deliver high-quality vaccination services: Introducing the Country Vaccination Score (CVS). VacciReview. https://doi.org/10.33442/vr220901

Al Awaidy, S.T., Khatiwada, M., **Castillo, S. (Hilleman 2019-2021)**, Al Siyabi, H., Al Siyabi, A., Al Mukhaini, S., Dochez, C., **2022**. Knowledge, Attitude, and Acceptability of COVID-19 Vaccine in Oman: A Cross-sectional Study. Oman Med J 37, e380. https://doi.org/10.5001/omj.2022.70

Derqui, N. (Montagu 2018-2020), Nealon, J., Mira-Iglesias, A., Díez-Domingo, J., Mahé, C., Chaves, S.S., **2022**. Predictors of influenza severity among hospitalized adults with laboratory confirmed influenza: Analysis of nine influenza seasons from the Valencia region, Spain. Influenza Other Respir Viruses 16, 862–872. https://doi.org/10.1111/irv.12985

Mahmood, S. (Pasteur 2017-2019), Erber, W., Yi, Z., Dobler, G., Schmitt, H.-J., **2022**. The Changing Epidemiology of Tick-Borne Encephalitis (TBE). VacciReview. https://doi.org/10.33442/vr220601

Liu, Z., Kundu, R., **Damena, S.** (Pasteur 2017-2019), Biter, A.B., Nyon, M.P., Chen, W.-H., Zhan, B., Strych, U., Hotez, P.J., Bottazzi, M.E., 2021. A scalable and reproducible manufacturing process for Phlebotomus papatasi salivary protein PpSP15, a vaccine candidate for leishmaniasis. Protein Expr Purif 177, 105750. https://doi.org/10.1016/j.pep.2020.105750

Hernandez Puente, C.V. (Jenner 2016-2018), Hsu, P.-C., Rogers, L.J., Jousheghany, F., Siegel, E., Kadlubar, S.A., Beck, J.T., Makhoul, I., Hutchins, L.F., Kieber-Emmons, T., Monzavi-Karbassi, B., **2020**. Association of DNA-Methylation Profiles With Immune Responses Elicited in Breast Cancer Patients Immunized With a Carbohydrate-Mimicking Peptide: A Pilot Study. Front Oncol 10, 879. https://doi.org/10.3389/fonc.2020.00879

Linares-Fernández, S. (Jenner 2016-2018), Lacroix, C., Exposito, J.-Y., Verrier, B., **2020**. Tailoring mRNA Vaccine to Balance Innate/Adaptive Immune Response. Trends Mol Med 26, 311–323. https://doi.org/10.1016/j.molmed.2019.10.002

Pedrera, M., Macchi, F., McLean, R.K., Franceschi, V., Thakur, N., Russo, L., **Medfai, L. (Pasteur 2017-2019)**, Todd, S., Tchilian, E.Z., Audonnet, J.-C., Chappell, K., Isaacs, A., Watterson, D., Young, P.R., Marsh, G.A., Bailey, D., Graham, S.P., Donofrio, G., **2020**. Bovine Herpesvirus-4-Vectored Delivery of Nipah Virus Glycoproteins Enhances T Cell Immunogenicity in Pigs. Vaccines (Basel) 8, 115. https://doi.org/10.3390/vaccines8010115

Sanchez, L. (Jenner 2016-2018), Vidal, M., Jairoce, C., Aguilar, R., Ubillos, I., Cuamba, I., Nhabomba, A.J., Williams, N.A., Díez-Padrisa, N., Cavanagh, D., Angov, E., Coppel, R.L., Gaur, D., Beeson, J.G., Dutta, S., Aide, P., Campo, J.J., Moncunill, G., Dobaño, C., 2020. Antibody responses to the RTS,S/AS01E vaccine and Plasmodium falciparum antigens after a booster dose within the phase 3 trial in Mozambique. NPJ Vaccines 5, 46. https://doi.org/10.1038/s41541-020-0192-7

Bah, A., **Sanicas, M.** (Pasteur 2017-2019), Nigou, J., Guilhot, C., Astarie-Dequeker, C., Vergne, I., 2020. The Lipid Virulence Factors of Mycobacterium tuberculosis Exert Multilayered Control over Autophagy-Related Pathways in Infected Human Macrophages. Cells 9, 666. https://doi.org/10.3390/cells9030666

Uthayakumar, D. (Jenner 2016-2018), Paris, S., Chapat, L., Freyburger, L., Poulet, H., De Luca, K., **2018**. Non-specific Effects of Vaccines Illustrated Through the BCG Example: From Observations to Demonstrations. Front Immunol 9, 2869. https://doi.org/10.3389/fimmu.2018.02869



4.2. PhD dissertations by the LIVE Alumni (non-exhaustive)

Alumnus	LIVE promotion	Discipline	PhD title	Affiliation	PhD Supervisor
Sergio Linares Fernández	Jenner (2016-2018)	Vaccinology, Immunology	Optimising a mRNA Vaccine platform against HIV-1 : from the in vitro transcription design to envelope protein expression	UCBL, Lyon, France	Jean-Yves Exposito and Bernard Verrier
Daria Chirita	Jenner (2016-2018)	Immunology	Pyrin inflammasome and Familial Mediterranean Fever: deciphering the role of the B30.2 and CHS domains in pyrin regulation	UCBL, Lyon, France	Thomas Henry
Joao Pedro Pereira Bonifacio Lopes	Jenner (2016-2018)	Immunology, Vaccinology	Influenza A Virus: From Infection to Prevention. Long-term Effects of an Early Life IAV Infection in vivo and Optimization of the Live Attenuated Influenza A Vaccine Backbone Using Mouse Models	University of Geneva, Geneva, Switzerand	Mirco Schmolke

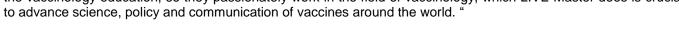


5. In their own words: LIVE Alumni testimonials

Nayab - Jenner LIVE promotion (2016-2018)

currently PhD student and project leader at VAXINFECTO, University of Antwerp, Antwerp, Belgium

"LIVE Master is a life-changing experience, personally and professionally. It gave hope and freedom to my dreams of becoming a scientist in the field of vaccinology and also helped me become an independent woman who can achieve her dreams of pursuing science and working in state-of-the-art institutes in Europe and enabling me to live a life of no dependency defined by my society. It also gave me a wide network to create collaboration projects in my own home country to make sure that knowledge transfer continues and strengthens higher education institutes in developing countries. Knowledge about vaccines is a critical need of these times and the times to come; therefore, providing such a platform to students to equip them with all the vaccinology education, so they passionately work in the field of vaccinology, which LIVE Master does is crucial





Lara – Jenner LIVE promotion (2016-2018) currently Clinical Project Leader at Paraxel International, Berlin, Germany

"The program has opened my eyes to a field that would both interest my scientific mind and leading personality. My European degree has definitely helped in landing my first job in Germany. What I've learnt during the 2 years at LIVE are much more than science and all prove to still be worthy to the day."

Christiana - Jenner LIVE promotion (2016-2018)

currently Global Vaccine Advisor at HelpAge International, London, UK

"The LIVE Master Programme gave me the opportunity to build my vaccine career and integrate into the global immunization sector."

Sultan - Pasteur LIVE promotion (2017-2019)

currently COVID-19 vaccination preparedness and response consultant at WHO, Dhaka, Bangladesh

"I think the Master LIVE is an exceptional program that nurtures and trains young minds in a subject of great value for the society. This has been more evident during the COVID-19 pandemic when vaccine served as silver bullet and brought us back to some form of normality after horrific 2-3 years. Coming from LMIC like Bangladesh, I can vouch that professionally trained persons in vaccinology are very very rare in this part of the world. So, when I was working in IVD (Immunization and Vaccine Development) department of WHO during the COVID-19 pandemic after my graduation, I was able to utilize my knowledge and skills for the benefit of the people of Bangladesh. Bangladesh became one of the very few countries from LMICs which achieved more than 70% vaccination coverage, a benchmark set by WHO. I feel my knowledge, education and global exposure that I achieved during the Master LIVE had a significant role to play in this achievement. In Master LIVE, students come from every corners of the world and its generous scholarship allows bright, motivated students from ever corner of the world to be trained without barrier of financial hardship or affordability. I am personally in debt to this program for my professional and prosomal growth and development. "

Melyssa – Pasteur LIVE promotion (2017-2019)

currently PhD student at Jean Monnet University, Saint Etienne, France

"The Master LIVE was a great part of my life, perfectly complementing my Bachelor studies and background knowledge to continue pursuing my dream in the vaccines world. Personally, it is a wonderful experience to study at 5 different European universities involving three different countries. Scientifically it fills us with the vaccines state of the art, allowing us to interact with renowned decision-makers in the public and private sectors. It is simply a must-have training for future vaccinologists."



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Rodrigo - Montagu LIVE promotion (2018-2020)

currently PhD student at Karolinska Institute, Stockholm, Sweden

"During the LIVE master, we were exposed to an extremely diverse and interdisciplinary training. Without this training, I would probably not be working in the vaccinology field. Furthermore, some lectures inspired me to further my knowledge in bioinformatics applied to vaccinology. This was essential for me to decide my career path and start a computational PhD applied to vaccine research and development. I hope the LIVE master can keep inspiring new students to explore and pursue new successful career paths in the vaccine field."





Leonie – Montagu LIVE promotion (2018-2020)
currently PhD student at the Institute of Infection Research and Vaccine Development, Hamburg, Germany

"A really unique part of the LIVE master is the international network. I noticed that this gives me an advantage compared to my colleagues because within the LIVE alumni I have a connection to so many institutions and almost any topic in vaccinology. This has helped me a lot so far during my PhD when I had a question regarding a specific topic."

Vinnycius – Montagu LIVE promotion (2018-2020)

currently PhD student at Ludwig Institute for Cancer Research, University of Oxford, Oxford, UK

"I definitely appreciate all the efforts done by the LIVE master to keep the students connected across many generations and cohorts. Being able to meet past and younger members of this lovely community has proven to be a great channel for partnerships, networking and, importantly, for friendships. I have friends who studied in other Erasmus masters and few of them know people in the cohorts before or after them, so I can see that the community built with LIVE is very unique, united and very active. I was recently invited to participate in the Vaccinext symposium in Lyon, where I could talk about my PhD work and discuss new



vaccines platforms with the students. It was a honour to be invited to such interesting event, and in the occasion I could meet many of my previous LIVE friends and meet new ones. These are connections I aim to keep both in my professional and personal life. I hope this connection stays strong and that the LIVE master continues its mission to educate talented students about vaccinology and create exciting opportunities to connect to the community of vaccinologists it's building."





"The LIVE master was game changing in my life, it gave me the opportunity of pursuing the career I wanted. With the plus of building a new circle of great friends from all parts of the world, as well as forming part of a network of alumni, great professors and scientists."

Shiva – Hilleman LIVE promotion (2019-2021) currently PhD student at Centre for Translational Immunology, Utrecht, Netherlands

"The thing I liked most about LIVE masters was the buildup from semester 1 which focused more on advanced immunology to semester 3 where we really started focused on novel vaccine development. Additionally, having management projects along with courses also helps to hone organisational and "real world" skills."







M Saleh – Barré-Sinousi LIVE promotion (2020-2022) currently Research Associate at LMPH, University of Antwerp, Antwerp, Belgium

"The Master LIVE strives to provide all the ingredients you would need to excel and be a professional both in academia and industry. It is challenging but at the same time exhilarating, and quite up to you to make the very best of it."

Tamari – Barré-Sinousi LIVE promotion 2020-2022 currently about to start a PhD at Ludwig Boltzmann Institute for Hematology and Oncology, Vienna, Austria

"As from medical background, LIVE has introduced me to the world of science and its limitless potential. Besides being able to exchange the ideas with the brightest minds of the world, I have met incredible human beings from all over the planet. It was a huge honor to be able to be part of this amazing programme, which has completely changed my life and I hope the same chances will be given to wonderful new generations of Vaccinologists. "

