

# Ambassador of the Month – 2024

## April 2024

Eugenio Contreras Castillo is a biologist and a PhD student at the National Autonomous University of Mexico. He works at the Paula Licona-Limón Lab in the Institute of Cellular Physiology. Eugenio has a deep passion for Immunology and everything related to it. In recent years he has focused on understanding how T cells work.



**Tell us a bit about the current research that you are part of.** Currently, my research focuses on unravelling the molecular mechanisms by which the TGF signalling pathway controls the function and suppressive abilities of regulatory T cells (Tregs). Specifically, our primary efforts are aimed at understanding how TIF1g, a protein involved in this signalling pathway, bestows Treg identity and prevents their conversion to proinflammatory Th subsets.

**What made you choose the field of Immunology over others?**

As an undergrad, I was very interested in understanding cancer biology, and the strategies to control this disease. When reading about this topic I discovered that it is difficult to understand the immune system. It was a new world. At first, I

took this as a challenge but later I found it so fascinating that I got sucked in, and here I am years later very happy with my choice.

**What drove you to Immunopedia?**

I heard about Immunopaedia last year when I applied to the IUIS-ALACI-SMI-ASOCHIN Immuno-Chile 2023 Congress.

**What advice do you have for fellow researchers who are interested in Immunology?**

Always be curious, don't be afraid to ask questions! In research, it is always important to look at a problem from different perspectives.

**If you were not involved in Immunology, what other scientific fields do you see yourself contributing to?**

Sociology or conservation biology.

**If you could learn and perform the assay/laboratory technique of your dreams, which one would it be and why?**

I guess it would be some spatial transcriptomics as it has huge potential to help understand the immune interactions in the tissue in a more detailed manner.

**If anyone was visiting Mexico for the first time, what do you feel are the top 5 things they must not leave without experiencing?**

I recommend visiting the National Art Museum, exploring my alma mater, UNAM, touring colonial cities such as Queretaro, Puebla, or Oaxaca, sampling local cuisine, and savouring "tacos al pastor."

**Recent publication:**

Eugenio Contreras-Castillo, Verónica Yutsil García-Rasilla, María Guadalupe García-Patiño, Paula Licona-Limón, Stability and plasticity of regulatory T cells in health and disease, *Journal of Leukocyte Biology*, 2024;; qiae049, <https://doi.org/10.1093/jleuko/qiae049>

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## Immuno-Chile 2023 Interviews

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**March 2024**



Oscar Medina-Contreras is an immunologist who works on the regulation of intestinal immune responses. He has a B.S. in Biology, a Ph.D. in Molecular Biomedicine, and completed a postdoctoral fellowship in the School of Medicine and the Emory Children's Center at Emory University. He was also a Research Associate in the Center for Inflammation, Immunity & Infection at the Institute for Biomedical Sciences at Georgia State University. Since 2015, Dr. Medina has been a Medical Sciences Researcher in the Immunology & Proteomics and the Epidemiology, Endocrinology & Nutrition Research Units at the Mexico Children's Hospital.

**Tell us a bit about the current research work that you are part of?**

My main area of research is to thoroughly characterize the intestinal lamina propria macrophage populations and their unique anti-inflammatory signature, as they may promote differentiation of T regulatory cells and tolerance in the

mucosa. I also study the family of inflammatory cytokines IL-36, in various models of intestinal inflammation, ulcerative colitis or Crohn's disease, obesity, and cancer. I am particularly interested in studying the intercommunication that exists between the cells of the immune system and the intestinal epithelium, and the modulation that these cell populations have with the commensal microbiota.

**What made you choose the field of Immunology over others?**

Throughout my academic career, I have maintained a profound interest in the intricate mechanisms governing organismal function. The complexity of immune regulation has particularly captivated my attention. I am convinced that the field of immunology offers an unparalleled lens through which to attain a comprehensive understanding of biological systems from a systems biology perspective.

**What drew you to Immunopaedia?**

Immunopaedia's aim to share immunological knowledge for both students and clinicians, in several developing countries.

**What advice do you have for fellow researchers that are interested in Immunology?**

Be prepared, sometimes you will get wonderful results. While moments of success are gratifying, it is essential to acknowledge that frustration will be a frequent companion. Therefore, cultivating a high threshold for frustration is crucial for sustained progress and resilience.

**If you were not involved in Immunology, what other scientific fields do you see yourself contributing to?**

Astrophysics.

**If you could learn and perform the assay/laboratory technique of your dreams, which one would that be and why?**

I've done most of the techniques I wanted to do. However, the rapid development of novel methodologies necessitates frequent updates to the experimental repertoire. The capacity to

monitor phenotypic and metabolic alterations in vivo and in real time would be great as it would significantly enhance research capabilities.

**If anyone was visiting Mexico for the first time, what do you feel are top things they must experience?**

Mexican food is a must. Museums, colonial architecture, pyramids, and the Trans-Mexican Volcanic Belt.

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## February 2024



Dr. Margaret Oluwatoyin Japhet is an Associate Professor of Virology at the Department of Microbiology, Obafemi Awolowo University, Nigeria. She completed her undergraduate and master's studies in Microbiology and Virology respectively, from the University of Ibadan, Nigeria. Dr Japhet completed her doctorate study in Microbiology at Ekiti State University, Nigeria, and Robert Koch Institute, Berlin, Germany, where the molecular aspect of the work was carried out. She is a fellow of the EDCTP (European and Developing Countries Clinical Trial Partnership) and New York Academy of Science, being awarded

different grants for viral studies by both organizations. In addition, she is a faculty member as a visiting Professor in the Faculty of Pharmacy, Howard University, USA. Dr Japhet's research focus is on immunology of viral infections, diagnosis, and control.

**Tell us a bit about the current research work that you are part of?**

I am currently involved in the development of nanoparticle-based immunoassay kit for detection of rotavirus diarrhoea using cotton swab, rotavirus antigen, monoclonal antibody and nanobeads. Group A rotavirus (RVA) is the most common cause of severe diarrhoea in infants and young children worldwide, accounting for about 60% of all diarrheal episodes in developing countries, yet its routine diagnosis is scarce in developing countries due to cost, equipment and need for trained personnel. Our study is on development of a rapid, sensitive, simple, and equipment-free rotavirus kit, suitable for use in low-income areas with limited access to laboratory facilities and trained personnel.

**What made you choose the field of Immunology over others?**

My immunology study is attached to virology. Immunology is core to viral studies and virology cannot be complete without immunology. There is the need to know how viruses affect the body and how the immune system reacts to fight these infections. This is the basis of vaccinology/control of viral infections.

**What drew you to Immunopaedia?**

I became aware of Immunopaedia during the Immuno-Gambia course which held at Banjul, the Gambia in 2016. I enjoyed the training, and I was invited to become an Immunopaedia Ambassador amongst all the Nigeria participants. I have since been involved in writing "Breaking News," creating videos on immunology, and recently, I assisted in the preparation of pre-course material.

**What advice do you have for fellow researchers that are interested in Immunology?**

Interest, passion, and determination! They should not give up on an initial challenge in comprehension. They can get basic knowledge from the Immunopaedia website for a start.

**If you were not involved in Immunology, what other scientific fields do you see yourself contributing to?**

I can't think of any!

**If you could learn and perform the assay/laboratory technique of your dreams, which one would that be and why?**

Whole genome sequencing and next generation sequencing, because this could help to detect both known and novel viral transcripts.

**If anyone was visiting *Ile-Ife, Osun State, Nigeria* for the first time, what do you feel are top 5 things they must not leave without experiencing?**

- Visiting the Obafemi Awolowo University Campus, Africa most beautiful Institution with architectural master pieces
- Visiting the Oni of Ife Palace, the ancient Yoruba heritage
- Ife Grant Resort Centre
- Ojaja Mall
- Country Kitchen Eatery for sumptuous meals and drinks

#### **Recent Publications:**

Adesina, O.A., Akanbi, O.A., Opaleye, O.O., **Japhet M.O.**, Wang, B., Oluyeye, A.O., Klink P., Bock, C.T. (2021). [Detection of Q129H Immune Escape Mutation in Apparently Healthy Hepatitis B Virus Carriers in Southwestern Nigeria](#). *Viruses*. 29;13(7):1273 pgs 1-14. –

Omotade, T.I., Babalola, T.E., Anyabolu, C.H., **Japhet, M.O.** (2023). [Rotavirus and Bacterial Diarrhoea Among Children in Ile-Ife, Nigeria: Burden, Risk Factors and Seasonality](#). *PLoS*

ONE.18(9):1-16.

**Japhet, M.O.**, Adama, T.U., Oyewale, A.P., Omotade, T. I., Awe, A., Elujoba S. O. (2023). High Prevalence of Hepatitis E IgM [Antibody among pregnant women in their Second and Third Trimester in Southwest Nigeria.](#) *Pan African Journal of Life sciences (PAJOLS)*. 7(3): 699-705

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## January 2024

In January we showcased some interviews from the participants of the Immuno-India course in late 2023.