

Dear IDEX Selection Committee,

It is with great pleasure that I present my qualifications and excitement for the IDEX scholarship during my studies at University Paris - Saclay. After receiving my bachelors degree from University of California Berkeley in Applied Mathematics and exploring the vast computer algorithms used to model physical world data, I believe an international education program to study the complexities that are associated with modern AI will help facilitate my future goals as a scholar and changemaker.

My interests lie in data integration for complex system modeling, an idea first introduced to me in the context of smart cities by Dr. Marta Gonzalez at UC Berkeley. Dynamic, multilayered, connected were among the many terms used to bring together this subject matter before me, and in my past and present work, I have been studying how large systems made of many individual components can be grouped through interactions and similarities.

As a Staff Research Associate in Data Science, I have been tackling this problem for highly variable predator, prey and environment interactions using long term data and applying mathematical algorithms to help us model ecological processes. As a part of a highly productive research team led by PIs Dr. Albert Ruhi and Dr. Stephanie Carlson and Postdoc Dr. Robert Fournier, I have engaged in the push for two major research undertakings resulting in two publications by year's end.

In this vein, I have been exploring labs at University Paris - Saclay to conduct environmental data science research. I have connected with two who have expressed interest, Dr. Franck Courchamp's BioM team (who has offered me a research project that I can conduct during my M2 research internship) and Dr. Vincent Martinet who both focus on environmental economics. In addition to these efforts, I hope to also explore those who may be connected to researchers at UC Berkeley.

These research opportunities are very exciting as they will help me in my pursuit of my PhD and introduce me to the French research procedures. A scholarship such as IDEX will help me as I transition from UC Berkeley to University Paris - Saclay and even greater, from the US to France. It is a trying time for research in America, so support from a program such as IDEX would encourage a sense of community for me amongst the other international scholars in partnership with the local researchers. I appreciate your time and consideration.

Thank you,
Tyler Marino