



IAESTE

INTERNSHIP OFFER

BR-2026-245-BOT



Botucatu - SP, Brazil



ON-SITE

INTERNSHIP HOST



Name of Company
UNESP - Botucatu
Instituto de Biociências



Website
<http://www.ibb.unesp.br/>



Address of Company
Botucatu
Brazil



Number of Employees
500



Business or Product
University

INTERNSHIP OFFER



8 - 8 weeks



1400 BRL
per Month



800 BRL
per Month

Latest Possible Start Date

Within Months
Jun-2026 - Dec-2026

Company Closed Within
-

Deductions Expected
0

Payment Method
Other

Arranged by
Student with IAESTE Brazil support

Estimated Cost of Living including Lodging
1400 BRL / Month

Working Environment: Field work

Working Hours / Week: 20.0

Our aim is to study and analyze mathematical models applied to tumor growth and therapies, where a combination of therapies will be the focus. Linear stability and numerical simulations will be considered in the studies.

Cancer is a disease that represents a major global challenge in terms of public health, due to its high morbidity and mortality rates. Several complex biological mechanisms drive tumor progression, involving interactions between neoplastic cells, the stroma, and the immune system. Although they favor the growth of malignant cells, the immune system also has the ability to restrict it, which gave rise to immunotherapy. CAR T (Chimeric Antigen Receptor, CAR) cell immunotherapy is an emerging approach, showing promising results in hematological malignancies, but its performance in solid tumors is limited. Several conjectures are presented to explain this limitation, including tumor heterogeneity and immunosuppressive cells, such as tumor-associated macrophages (TAM). Recent findings suggest that co-administration of radiotherapy may mitigate such limitations, although clinical trials for this combination are still in early stages, making it difficult to define treatment protocols. In this sense, mathematical modeling in oncology emerges as an important tool to study the various mechanisms underlying tumor progression, enabling the exploration of varied scenarios and potentially providing experimental and clinical innovations that would not be conceivable without the predictive capacity of theoretical analyses and computational simulations. Based on these premises, we aim to develop and evaluate mathematical models to investigate the interaction between tumor cells, immune system cells, and CAR T cell immunotherapy in association with radiotherapy, oncolytic virus and chemotherapy, in order to establish clinically relevant scenarios.

ADDITIONAL INFORMATION

Deadline for Nomination - 31-Mar-2026

Date - 06-Feb-2026

On Behalf of Receiving Country - IAESTE Brazil