



SHP Student Interns for Research and Scholarly Activities Project Proposal Form

Instructions:

Please fill each box to the right of the required fields, obtain the required signature and return via email to Michele Sisco (mcoral@shp.rutgers.edu) by **March 24, 2025**.

If you are sending attachments, please ensure your contact information is added to all your forms.

Please note if you are a Non-Resident Alien to see the tax withholdings:
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Faculty Contact Information:

Date submitted:	3-30-2026
Faculty Name:	Jean-Francois Daneault
Department/Program:	RMS
Telephone number:	973-972-8482
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Project Detail:

Project Title: (56 characters max)
Testing and validation of physics-informed models for movement tracking and segmentation

Hypothesis:
Physics-informed models outperform state-of-the-art movement tracking and segmentation algorithms

Description: (Include design, methodology, data collection, techniques, data analysis to be employed, evaluation and interpretation methodology for research component)	We developed a physics-informed model for movement tracking and segmentation. We have done preliminary testing against synthetic data. This work will be done using python and requires knowledge of machine learning.
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Specific Student Responsibilities:
The student will be asked to further test the model and compare it to the state-of-the-art movement tracking and segmentation algorithms, perform statistical comparisons, and write-up the results.

Start / end date of project: June-August 2026

<p>WHAT OTHER EDUCATIONAL OPPORTUNITIES ARE AVAILABLE TO STUDENTS? (e.g., journal club, seminars, clinic, rounds)</p> <p>WHERE DO YOU PLAN TO PRESENT OR PUBLISH THE FINDINGS WITH THE STUDENT? (e.g., national or state meetings, newsletter or journal, SHP poster day)</p>	<p>The student will be part of weekly lab meetings, and may be co-author on publications depending on contribution. If significant contribution, the student may even be able to attend/present the results at a conference.</p> <p>We plan on presenting the results at IEEE conferences, and publish in methods journals. The student will also be expected to present at the SHP poster day.</p>
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CHECK ALL APPROPRIATE BOXES BELOW AND PROVIDE REQUESTED INFORMATION.

This project is: clinical laboratory behavioral survey educational

Other: please specify Computational

This project involves the use of human subjects (including chart review, retrospective studies and questionnaires).

Pending Approved IRB Protocol Number _____

IRB approval must be obtained by June 2025

Are you an Employee at RU? Yes No

Are you a Non-resident Alien? Yes No

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 Signature of Department Chair

3/30/26

 Date