RUTGERS HEALTH
School of Health Professions

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.

Faculty Contact Information:

Date submitted: March 7, 2025

Faculty Name: Dinesh P Mital

Department/Program: Health Informatics

Telephone number: 973-972-3607

E-mail: mitaldp@shp.rutgers.edu

Project Detail:

Project Title: (56 characters max)	**Dental Implant Success Prediction Using Dental Decision Support System**
Hypothesis:	Dental Decision support systems can predict success and quality of dental implant. This AI based tool is expected to perform better than human judgement, and leads to robust and better quality of procedures.
Description: (Include design, methodology, data collection, techniques, data analysis to be employed, evaluation and interpretation methodology for research component)	Dental implant failure is a significant concern affecting patient outcomes and treatment success. Multiple factors, such as patient health, surgical techniques, and implant characteristics, contribute to implant longevity (Moraschini et al., 2015). The aim of this study is to identify key predictors of implant success through a systematic literature review and exploratory data analysis of publicly available datasets. The student will collect and analyze relevant research articles and structured datasets, perform statistical analysis to assess key variables and develop a preliminary predictive

	model. The findings will help create a foundational framework for clinical decision-making regarding implant treatments. **Objectives** • Conduct a systematic literature review on key factors affecting dental implant success. • Analyze publicly available datasets to assess significant predictors of implant longevity. • Develop a preliminary statistical model to identify key trends in implant outcomes. • Provide insights to support future development of a clinical decision support tool.
Specific Student Responsibilities:	**Data Collection:** Use publicly available datasets and previous implant studies. **Variable Selection:** Identify and analyze important factors (age, bone density, smoking, diabetes, etc.). **Model Development:** Build a basic predictive model using logistic regression or decision trees. **Software Application:** Student is expected to learn CORVID software for this project **Model Evaluation:** Assess model accuracy using available retrospective data and compare to existing outcomes.
Start / end date of project:	June 2, 2025 August 28, 2025

WHAT OTHER EDUCATIONAL OPPORTUNITIES ARE AVAILABLE TO STUDENTS? (e.g., journal club, seminars, clinic, rounds)	Software resources will be provided to student Literature and reading material will be made available through library-based resources.
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)	Research Results will be presented in Rutgers research day and will also be submitted to International J of AI in Healthcare

CHECK ALL APPROPRIATE BOXES BELOW AND PROVIDE REQUESTED INFORMATION.

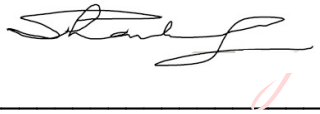
This project is: ☐ clinical ☐ laboratory ☐ behavioral ☐ survey x☐ educational

☐ Other: please specify_____

☐ 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



Digitally signed by Shankar Srinivasan PhD
DN: cn=Shankar Srinivasan PhD, o, ou, email=srinivsh@shp.rutgers.edu, c=US
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Signature of Department Chair

March 6, 2025
Date