

# Mentoring UG Research in Global Contexts: Vertically Integrated Projects (VIP) Global

# Institutional Description

**Purdue University** is a large public (Big 10) STEM & research-intensive university in the Midwest with a predominantly white student population and a high number of international students (20%).

The Center for Intercultural Learning, Mentorship, Assessment and Research (CILMAR) aims to embed intercultural learning and assessment across campus. CILMAR mentors intercultural leaders, supports innovative scholarship, and encourages best practices in teaching and learning.



# Mentoring Model: VIP Global

## What is VIP Global?

VIP Global pairs content area experts (faculty) and trained interculturalists to mentor international teams of undergraduate students.

VIP Global stems from the <u>VIP (Vertically</u> <u>Integrated Projects) model</u> developed by Purdue Engineering faculty.

The VIP model fosters interdisciplinary teams of undergraduate/graduate students and faculty. These teams are large-scale (10-20+ undergraduates) and long-term (projects last for years—sometimes even decades). Students can receive credit for their participation for up to 4 years.

The VIP model is supported by the <u>VIP</u> <u>Consortium</u>, a nonprofit alliance consisting of 36 higher education institutions.



### How does VIP Global work?

VIP Global connects Purdue students and faculty with students and faculty from international partner universities to work on global problems or approach research questions from different local contexts.

Intercultural mentors and students work through a 12-hour asynchronous/synchronous curriculum together throughout the semester to intentionally support global competency development.

The program features two models: faculty- and student-driven team formation.

 Faculty-driven: Based on faculty research and ongoing projects; students recruited by the VIP office and major advisors



• Student-driven: Created by students; VIP office assists in finding a faculty mentor





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## **VIP Statistics & Examples**



Total teams: 70 (VIP Global: 6)



**Total participants**: ~300 (VIP Global: ~80)



## Members per team: 3-20

## Sample projects:

### **Open Estudio - Virtual Exchange:**

Students from Purdue University, Universidad de Antioquia, and Instituto Técnico Metropolitano (both in Medellín, Columbia) collaborate to create digital media artwork. Students practice intercultural teamwork as they learn programming and 3D animation techniques.

### **RODETUR (Rotating Detonation Combustor - Turbine Rig):**

Mechanical engineering students at Purdue University and Technische Universitat Darmstadt in Germany work together virtually to facilitate the continuous operation of a rotating detonation combustor-turbine. Through intercultural collaboration, students perform mechanical tasks, analyze and evaluate the system, and complete a manufacturing plan.

#### Race to Zero (R2Z):

Purdue students work with students from Universidad de Ingeniería y Tecnología (UTEC) and Universidad Nacional de Ingeniería (UNI) in Lima, Peru to develop a Net-Zero Energy Building (NZEB) that utilizes hydrogen fuel cell technologies. This project is based off of the United Nations' "Race to Zero" climate change initiative to foster a zero-carbon economic recovery.

	Innovations/Benefits		Challenges/Limitations
•	Leverages existing VIP program to provide a general model for professional development in undergraduate research teams	•	<ul> <li>Currently, large investment of time, curriculum costs, and assessment costs, which may not be possible at every university</li> </ul>
	Interdisciplinary and collaborative model compensates for faculty reluctance/ discomfort in supporting global competency development through CILMAR expertise		
		•	Requires institutional support and good interdisciplinary relationships across campus
•	Embeds assessment of learning outcomes	•	• Easier to recruit students within STEM and
•	Functions well virtually	specifically within Engineering, although	
•	Minority Engineering Program staff encourage their students to engage in VIP		all disciplines
	Global and similar program EPICS		



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