

Engaging more than  
**2000 undergraduate students**  
in ocean research experiences with  
RUCOOL over the last 15 years!!

**SENTINEL MISSION**

TELEDYNE TECHNOLOGIES INCORPORATED

RUTGERS THE STATE UNIVERSITY OF NEW JERSEY

United Nations Decade of Ocean Science 2021-2030

**Workforce Development Supporting the Blue Economy:**  
*Undergraduate Research in the Classroom*



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## The Opportunity

### Our Students face a grand challenge :

- To provide food, water, energy, and economic security for a growing population
- They face this challenge while our ocean planet is undergoing rapid change

### Through experiential learning our students will

- Be better prepared to face the challenge
- Enter a new blue economy workforce translating data into knowledge and decision-making



## Undergraduate Student Research Pathway



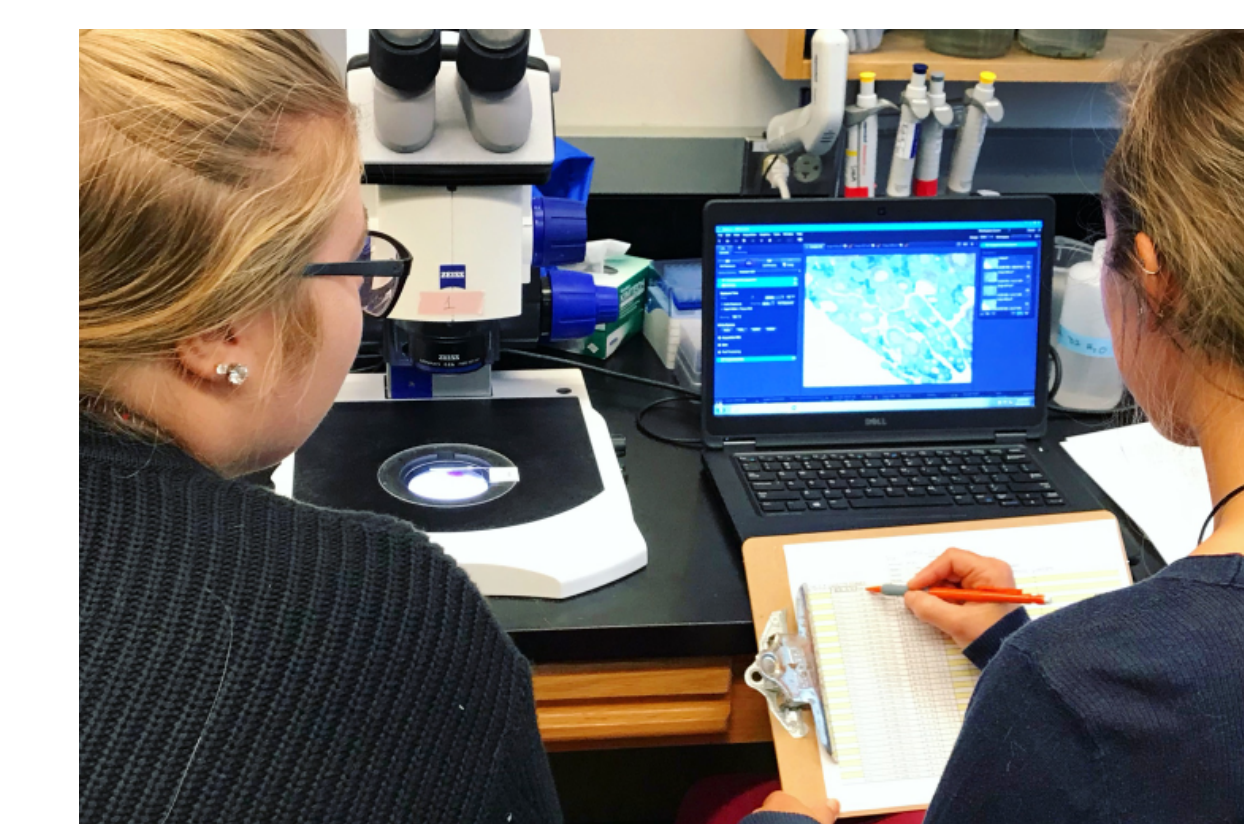
### Oceanography Learning Community (First Year and transfer Students):

- Empower students to get involved in research
- Introduction to research opportunities
- Field experience on a research vessel.



### Ocean Methods and Data Analysis (All Students)

- Introduction to ocean sensors
- 2 Semester options: Chemical/Biological and Physical/Geological sensors
- Research teams conduct research cruises



### Independent Research (All Students)

- Semester long research experiences
- Projects customized to student interest
- Culminate in presentation of results



### Topics in Oceanography (All Students)

- Contribute to team based research projects
- Research activity contributes to ongoing RUCOOL research
- Students embarking on glider mission to circle the globe (Sentinel Mission, scan QR code for more information)



### Master's in Operational Oceanography (4+1 Program)

- Gain hands on experience working with cutting edge ocean technologies
- Work on real world problems connecting ocean society and economy
- Develop strong data analysis and communication skills

## CONCLUSIONS

- Global Challenge: Provide food, water, energy and economic security for a growing population on a changing planet
- The emerging new blue economy responding to this challenge must be enabled by a diverse workforce capable of creating new knowledge and communicating the risk
- Our undergraduate research pathway prepares experienced and inspired students able to translate data into knowledge they can communicate for decision-making

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