



SINGAPORE





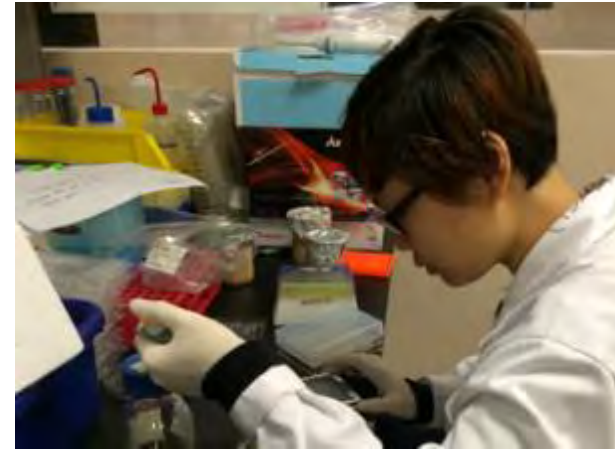
# St John's Island National Marine Lab as a National Research Infrastructure

***National Research Infrastructure (NRI)** is a research facility that, because of its strategic value, cost, scale or potential user base, is operated as a national resource and **open to all researchers**.*

- Access to marine research facilities **for the community**
- Facilitate multi-discipline interactions through **shared use space**
- Supports national agencies for projects with strategic significance
- Catalyzes collaborations in strategic international research programs
- Implements manpower training programs in marine science

Website & researcher portal: <http://sjinml.nus.edu.sg/>

**NATIONAL RESEARCH FOUNDATION**  
PRIME MINISTER'S OFFICE  
SINGAPORE  
Research . Innovation . Enterprise





# *Why a Marine Laboratory?*

- Enables real time lab-to-field research
- Supports a multi-discipline community of scholars
- **Brings Science into the Community**







Seawater Flume



Controlled  
Environment Aquaria



Biosafety Level 2  
Aquaria



## RESEARCH FACILITIES

### Seawater aquaria

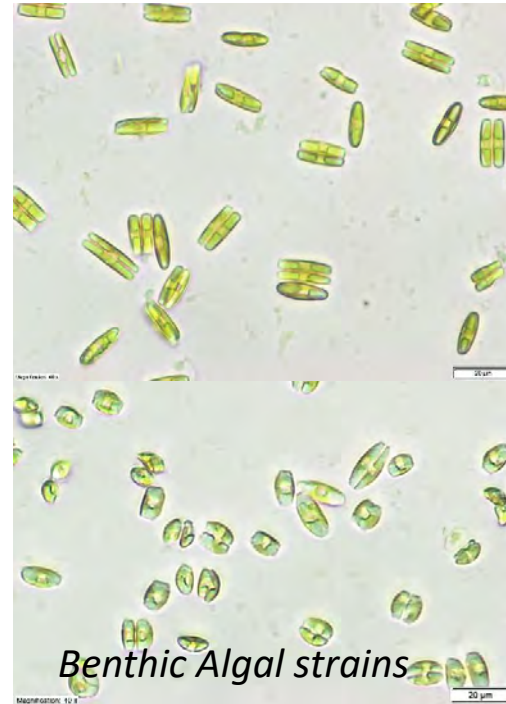




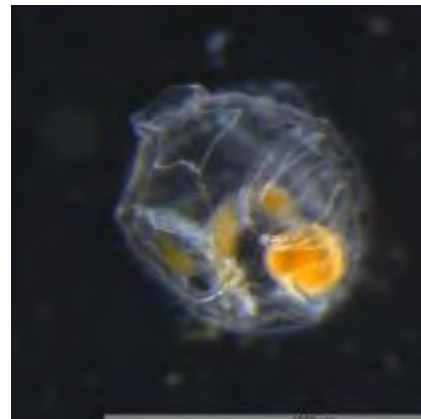
# INVERTEBRATE LARVAL CULTURE FACILITIES



## MARINE MODEL ORGANISMS FOR RESEARCH



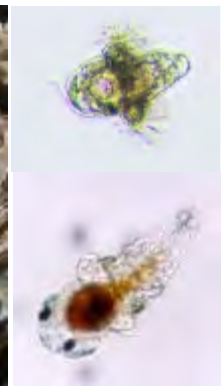
*Benthic Algal strains*



*Mytella strigata*



*Perna viridis*







# National Research Infrastructure (NRI) St. John's Island National Marine Laboratory (SJINML)

## RESEARCH FACILITIES

Thematic labs with lots of scientific equipment



Confocal laser LSM 900



Flowcam 8400



S3e Cell sorter





# National Research Infrastructure (NRI) St. John's Island National Marine Laboratory (SJINML)

## RESEARCH VESSEL

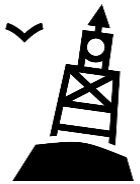


- 12m vessel with A-frame and winch for lifting and towing equipment
- Field support team that provides training and technical support with trip planning, field sampling, collections and safety management





# MARINE ENVIRONMENT SENSING NETWORK



## Research grade Environmental Monitoring and R&D

Buoys for research & test-bedding; complements existing NEA suite



## Baselines & protocols

Collects data for key parameters; detection of emerging threats



## Data platform for research

Tiered access; catalyse research collaborations



Real-time monitoring buoy at  
Bendera Bay, St. John's Island.





# National Research Infrastructure (NRI) St. John's Island National Marine Laboratory (SJINML)

## OUTREACH & EDUCATION

- Marine science skills training programs
- Education for capacity building in marine science
- Open classroom teaching, field courses; local & international
- Public outreach activities – newsletter, seminars, nature walks

**In collaboration with NParks:**

- Sisters Island Marine Park Public Gallery

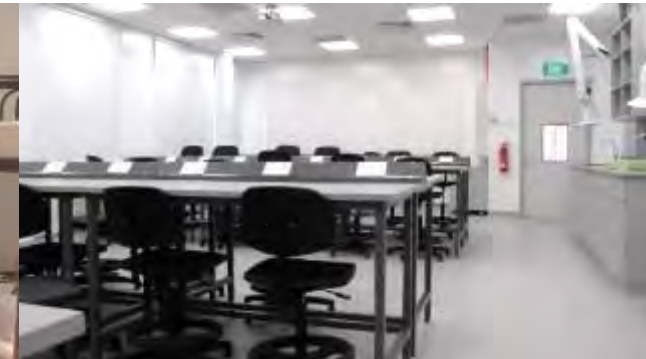
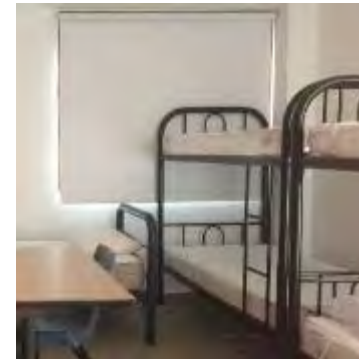
50 PAX SEMINAR ROOM

30 PAX TEACHING CLASSROOM

30 PAX DORMITORY



Organiser for annual NUS-Temasek Foundation  
STEP Environment Camp for Asian youth



# ROLE OF RESIDENT SCIENTISTS

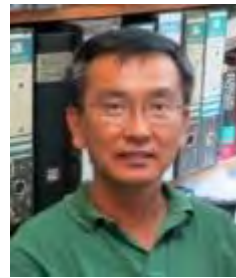
- *Provide leadership in management of the lab*
- *Provide mentorship for young scientists at the lab*
- *All active researchers in their host institutions*



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Principal Research Fellow  
BIOFOULING



Jani Tanzil  
Deputy Facility Director,  
Senior Research Fellow  
CORAL BIOLOGY



Tan Koh Siang  
Senior  
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BIODIVERSITY



Leong Chee Yew  
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ALGAL BLOOMS



Dr Steve Summers  
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SCELSE-SJINML  
MICROBIAL ECOLOGY  
OCEAN PLASTIC POLLUTION



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Research Fellow  
CONSERVATION



Ow Yanxiang  
Research Fellow  
SEAGRASS BIOLOGY



Lee Bee Yan  
Research Fellow  
CRUSTACEAN BIOLOGY



Nicholas Yap  
Research Fellow  
JELLYFISHES &  
ANEMONES



Research Fellow  
AQUACULTURE



# Research @SJINML



- **Environment:** benthic sampling, environment stressors in reefs
- **Climate Change:** seagrass-ocean acidification, ecological resilience of coral and seagrass, biogeochemical studies, blue carbon research
- **Marine Conservation:** giant clams, sustainable aquarium trade
- **Pollution:** impact of plastics on marine life, breakdown in the ocean
- **Biodiversity:** Deep Sea Biology, biodiversity surveys, invasive species
- **Food Security:** harmful algal blooms, aquaculture, novel foods
- **Engineering :** Antifouling, Corrosion, Eco-engineering .....

# Challenges for managing researchers under NRI

- Overcoming cultural barriers in academia: “PI-lab” vs thematic shared labs
- Managing researcher responsibility and safety in a shared spaces
- Harmonizing safety training, increasing programs for skills training
- Long term sustainability: facility fees, income challenges

## ASEAN- Japan:

- Marine environment is transboundary: environment challenges requires a long term regional view
- Regional networking between marine labs to enhance capacity in climate change monitoring & adaptation
- Marine laboratories can play an important role to foster climate resilience in the region through education and research





## More information

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