WOODS HOLE OCEANOGRAPHIC INSTITUTION
COVID-19 RISK MITIGATION STRATEGIES

UNOLS Council Meeting July 15, 2020

WHOI Risk Assessment Background

WHOI has completed three Risk Assessments (RA) for three vessel voyages since April 16, 2020 and are working through it's fourth RA currently.

1. R/V Atlantis Risk Assessment for deadhead transit to MLR shipyard. 29 day transit through Panama Canal.
2. R/V Neil Armstrong Risk Assessment for first science op AR44 "OOI Pioneer 14." 11 day mission.
3. R/V Neil Armstrong Risk Assessment for a 40 day International voyage AR45, "OSNAP CF".
4. Began RA for upcoming R/V Neil Armstrong mission, AR46 "OOI Irminger – OSNAP" departing Aug 8. 35 days.

WHOI Risk Assessment Methodology

Risk assessment development

- Risk developed from multiple sources
  - ✔ USCG COVID-19 announcements
  - ✔ UNOLS Coronavirus (COVID-19) Considerations for Making Decisions Regarding Conducting Science Onboard U.S. Academic Research Fleet Vessels WHOI Ship Ops identified risks (including GW Maritime Medical access)
  - ✔ Science Team identified risks
  - ✔ WHOI SSSG identified risks
  - ✔ WHOI R/V Neil Armstrong Master identified risks
  - ✔ Wilhelmsen Ship Agency Port Restrictions Map
  - ✔ WHOI COVID-19 Guidelines and FAQs
  - ✔ UAF Return to Sea Presentation (LTER)
- Formed a collaborative and knowledgeable working group to discuss and agree to final list of risks and guidance practices
- All identified risks were discussed and mitigation steps were developed and agreed to by the team.
- Prior to departure, all parties will be consulted and risks and mitigations reviewed. If real or perceived risk levels should change, the Marine Superintendent or Chief Scientist may halt operations and delay or cancel the cruise

Risk Assessment Team

- Chief Scientist
- Master R/V Neil Armstrong
- WHOI VP Marine Operations Facilities
- WHOI Director Ship Operations
- WHOI Port Captain
- WHOI HR Manager
- WHOI Science Coordinator
- WHOI Ship Operations Project Manager
- WHOI Ship Operations Crew Personnel Coordinator
- Other science team members

Common Risk Factors

- COVID-19 status in home port / Town / State of MA latest guidelines
- Local science party participants
- Crew changes, travel & hotel availability for quarantine
- Science and crew alternates
- Testing availability and results
- Vessel access with essential personnel / vendors / stores deliveries
- Daily Self-Assessments for each person
- Treatment of COVID-19 while at sea
- Refuge Ports
- Containment on board
- Vessel Social Distancing Plan

Common Mitigations

- Science party using only local participants
- Spread crew & technicians out on vessel to single staterooms
- Reduced science party to one per state room (11 max on R/V Neil Armstrong)
- Re-scope science missions to accommodate less personnel and reduced sea time
- Enhanced cleaning protocols
- Crew and science alternates in case someone tests positive prior to departure
- GW Medical updated guidance
- Contact ship agents, Local P+I correspondents to notify of our intented operating areas and prepare for possible evacuation in “refuge ports”.
- Medical Evacuation plan

Risk Assessment Snapshot (AR45 OSNAP)

Vessel:	**RV NEIL ARMSTRONG**
Date:	**6/5/2020**
Condition:	**COVID-19**
Cruise/ Deployment:	**AR45 OSNAP**

Consequence \ Likelihood	1: Unlikely	2: Possible	3: Quite Possible	4: Likely	5: Very Likely
1: Negligible	Low Risk	Low Risk	Low Risk	Medium Risk	Medium Risk
2: Slight	Low Risk	Low Risk	Medium Risk	Medium Risk	Medium Risk
3: Moderate	Low Risk	Medium Risk	Medium Risk	Medium Risk	High Risk
4: High	Medium Risk	Medium Risk	Medium Risk	High Risk	High Risk
5: Very High	Medium Risk	Medium Risk	High Risk	High Risk	High Risk

			Risk Identification				Risk Mitigation				EXECUTION
Count	Category	Risk ID	Risk Identifiication	Likelihood	Consequence	Risk Rank	Control Measures/Mitigation	Likelihood	Consequence	Risk Rank	Person In Charge
1	Pre-cruise considerations	PC 1	What are institutional policies relating to the cruise?	4	4	H	Institution policies have been developed in conjunction with the Port Office, Ship, and Chief Sci. Work on campus is still limited. Policies are in place for essential personnel to work on campus for cruise prep (REF 1).	2	4	M	WHOI/Port Office
2	Pre-cruise considerations	PC 2	Will all UNOLS and WHOI COVID19-related protocols be made available to all science and crew prior to the cruise?	2	3	M	A shared drive with policy and guideline documents has been created to aid in transparency of all agreed upon protocols as they are formed and modified thorughout the cruise planning process	1	2	L	Master/Chief Sci
3	Pre-cruise considerations	PC 3	Will participants be screened for pre-existing conditions (using a questionaire) leading to increased health risk if infected?	4	5	H	Yes, WHOI policies include pre-screening for pre-existing conditions (REF 6).	1	2	L	WHOI/Port Office
4	Pre-cruise considerations	PC 4	Will there be a follow-up questionnaire for screening of participants (immediately prior to departure)?	2	2	L	No follow up questionnaire needed. Participants will submit daily monitoring assessments (WHOI Daily self-assessment) online until end of 14 day isolation period, which will be three days before departure. Cleared participants will proceed from isolation directly to the ship.	2	2	L	Master/Chief Sci

WHOI Risk Assessment Summary (AR 44 Pioneer)

- 35 total Risks
- Before Mitigation
  - 0 Low
  - 18 Med
  - 17 High
- After Mitigation
  - 21 Low
  - 14 Med
  - 0 High

Pioneer Science		Risk Identification Summary			Risk Mitigation Summary		
		Low	Medium	High	Low	Medium	High
Total	35	0	18	17	21	14	0
Total	%	0%	51%	49%	60%	40%	0%
Category Summary							
Prep Team	4	0	2	2	3	1	0
Cruise Logistics	9	0	5	4	6	3	0
Science Party	6	0	3	3	5	1	0
Shipboard Policy	6	0	5	1	2	4	0
Medical Policy	10	0	3	7	5	5	0
	0	0	0	0	0	0	0

Mitigation Challenges

- Crew restricted to vessel while in port
- Crew traveling to ship for crew changes have to quarantine in local hotels 16 -14 days prior to crew turnover
- Science creating separate loading team, science team, off load team
- Science to quarantine and self-isolate at home.
- Alternates for crew and science also have to quarantine for same period
- Transportation for testing (different for science & crew)
- Online WHOI Self-Assessments conducted daily for all hands once quarantine begins

WHOI “Return to Sea” Process

- 1 to 2 months prior to mission gather all stakeholders to set up meeting and documentation schedules beyond regular cruise planning meetings.
- Schedule weekly or 2x week Risk Assessment meeting.
- Alert Funding agencies & UNOLS of intentions to seek approval to return to sea
- Working group to update all existing protocols from lessons learned on existing and past cruises.
  - Risk Assessment & Risk Summary
  - Social distancing plan
  - Refuge Ports plan
  - Mission Planning Guide
  - Science Pre-Cruise Timeline / Schedule
- Present Rationale and Recommendation to return to sea to WHOI Senior Management, NSF, ONR and other required Program Managers 1 week prior to loading/move on date.

The End

- Questions?