



# Safety, Health and Environment

## Fatigue Control and Mitigation Program Rubin Obs.-SLAC/NOIRLab Merge

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# Reminder - Code of Conduct



**Project & Community Workshop 2023**  
7-11, August 2023 | Marriott University Park Tucson | Tucson, AZ

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Rubin Observatory adheres to the principles of kindness, trust, respect, diversity, and inclusiveness in order to provide a learning environment that produces rigor and excellence.




Handshakes OK  
Fold Here



Elbow/Fist Bump OK  
Fold Here



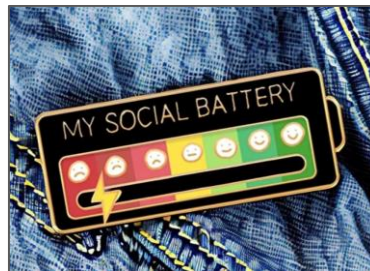
I Need My Space  
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Wear a mask if you want to!

Check name-tags for these contact comfort level stickers.

Use the confidential email [rubin2023-covid@lists.lsst.org](mailto:rubin2023-covid@lists.lsst.org) to request a test, report your test results, or ask questions.



If someone is wearing a pin like this, and it indicates a low social battery, please give them their space or offer to restart the conversation at a later time.

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# Reminder - Virtual Participation



Virtual participants should be muted when they're not speaking.

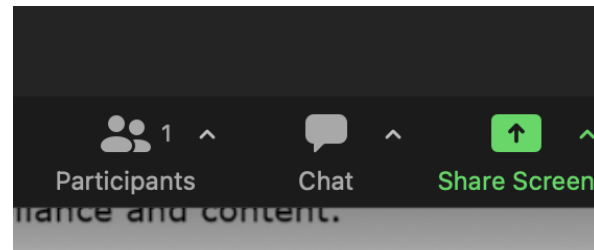


In-person participants should speak into the room microphone(s), or the chair should repeat all questions into the microphone, so that the virtual participants can hear what is said.



In the Rubin2023\_PCW Slack Space, all participants can use the session's channel for Q&A and discussion.

The channel name convention is, e.g.:  
#day1-mon-slot3a-intro-to-rubin



In Zoom, use the chat to:

- request to unmute to ask a question, or
- type your question so someone can speak it aloud.

The Zoom “raise hand” feature is generally harder for moderators to track, and is not preferred, but may be used at the discretion of the session chair.

# Our philosophy



**“Promote the philosophy that safety is not a priority that can be reordered, it is a value associated with everything we do.”**

**LPM -18, Rubin Obs. Safety**  
[Acronyms & Glossary](#) **Policy**

# Agenda

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## Fatigue Control and Mitigation Program

- What is Fatigue
- Is Fatigue a real Workplace issue
- Recognizing fatigue in the workplace
- Why manage fatigue at the Rubin Obs. Summit Site?
- First approach: ten-question survey
- Our way to minimize fatigue, The Fatigue mitigation Program
- Why fatigue mitigation program should continue during operation

## Rubin Obs./ NOIRLab Safety, Health & Environment Merge

- NOIRLab EHS chart
- The benefits and challengers of a common EHS Program
- S.W.O.T. analysis of Rubin/NOIRLab merge (by Sandra Romero)
- Merged activity already on place
- Conclusion

# Fatigue Control and Mitigation Program

# What is fatigue?

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When we talk about fatigue, we're not just talking about the occasional mid-afternoon slump where you could really use a nap.

Fatigue is defined as the state of feeling very tired, weary, or sleepy resulting from insufficient sleep, prolonged mental or physical work, or extended periods of stress or anxiety.





# Is Fatigue really a workplace issue?

In a single word: **ABSOLUTELY!**

Fatigue is a form of impairment, and researches shows that staying awake for long periods without adequate rest produces a similar effect to increased blood alcohol levels.





# Recognizing fatigue in the workplace

It's not always easy to spot fatigue in an employee, and in many cases, the onus is on the worker to recognize the symptoms.

Signs to look out for include:

- Weariness
- Tiredness or sleepiness (including nodding off and falling asleep against your will)
- Irritability
- Reduced alertness and concentration
- Memory issues
- Lack of motivation
- Headaches
- Loss of appetite
- Increased susceptibility to illness



# Why manage fatigue?

The Safety Team of the Vera C. Rubin Observatory values the safety and quality of life of all its workers, and has chosen to implement and carry out a Fatigue Control and Mitigation Program. This program is intended as an effective tool to control the risks associated with all the work carried out in this important project.



# First approach: ten-question survey

Fatigue is often caused by a number of inter-related factors. This survey will provide a guide to identify the risks of fatigue, but it is not exhaustive. Fatigue risks must be assessed and also set strategies to put in place on how to manage them.

## SURVEY FATIGUE CONTROL AND MITIGATION PROGRAM

Fatigue is one of the most significant factors that can affect the performance of workers, increasing the probability of operational errors, incidents, and accidents that can even be fatal. Fatigue is defined as a normal response to lack of sleep. The symptoms of fatigue negatively impact people by reducing their alertness and the quality of their work performance.

Fatigue can be due to work factors (length of shifts; consecutive days of work without adequately long breaks; nature of the task; work conditions such as heat, cold, noise, humidity, dust, vibration, etc.) and non-work factors (sleep disorders, family responsibilities and conflicts, social commitments, unhealthy eating habits, sedentary lifestyle, smoking, etc.) which impact sleep time and/or sleep quality. Because fatigue is a real risk factor, it is necessary to implement efforts to minimize its effects.

The Safety Team of the Vera C. Rubin Observatory values the safety and quality of life of all its workers, and has chosen to implement and carry out a Fatigue Control and Mitigation Program. This program is intended as an effective tool to control the risks associated with all the work carried out in this important project.

1. In general, do you feel you have trouble falling asleep? \*

- ☐ Yes
- ☐ No
- ☐ I prefer not to answer

2. Do you rest in a pleasant and quiet environment? \*

- ☐ Yes
- ☐ No
- ☐ I prefer not to answer

# Our way to minimize fatigue...

## The Fatigue Mitigation Program

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Based on the responses we obtained from the survey, the actions we will take are as follows:

- Make a complete analysis, interpret and evaluate the results.
- An evaluation will be made of the jobs and the work being done.
- Evaluate the options to provide workers with breaks during the workday, to make sure workers are getting the rest they need.
- Evaluate the options to offer a variety of healthy snacks during breaks.
- Ensure good supply of drinking water. All workers must stay properly hydrated to keep their body running at optimum levels.
- In the case of contractors, persons designated to drive down should be given a break 15 to 20 minutes before the end of the workday.

# Why should the Fatigue Mitigation Program continue during Operations

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- Because fatigue is an identified risk that we must mitigate in accordance with our safety policy.
- Because the dynamics of the operation includes a significant number of tasks in interaction with delicate and specific instruments and equipment that require high concentration and optimal physical conditions during the development of the tasks.
- Because the risks of the workplace are linked, at least in one aspect, to fatigue; in this way, fatigue is a potential risk beyond the construction stage and which will surely be present during the Operations.

# Rubin Obs./ NOIRLab Safety, Health & Environment Merge

# NOIRLab EHS org chart (Chile)

**EHS NOIRLab  
Director**

**Servicing NOIRLab Priorities - allowing for cross training, utilizing specialties, cross internal reviews and providing opportunities**

**NOIRLab Chile  
EHS Manager**

**SLAC  
Safety  
Manager**

**Four Safety  
Coordinators  
(FTE)**





# Advantages of a unified EHS Program

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- All NOIRLab employees are clear of the EHS policies, standards, and procedures, eliminating confusion of the different expectations between programs.
- Helps remove the perception that Centers are independent organizations.
- Eliminates duplicate efforts in staffing, consultation, documentation, training, and other functions.
- Improved identity, establishes uniformity, and accountability for the EHS staff and program.
- Provides opportunities to share problem solving and best practices among the EHS staff.

# Advantages of a unified EHS Program

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- Improved work process as a result of consolidated technical decisions.
- Improved compliance with regulatory requirements by standardizing policies and programs.
- Consolidation of technical expertise by region and eliminating the need for individual programs operating in the same region that maintain redundant technical capabilities.
- EHS staff acquires an improved notion of client service and broadens their experience.

# S.W.O.T. analysis of Rubin/NOIRLab merge (by Sandra Romero)



## Strength

What have we done Well on EHS during Construction at Rubin Obs.

## Weakness

What can we improve?  
Where are we lacking in knowledge or resources?

## Opportunity

Which of our strengths might be valuable to potential NOIRLab?

## Threat

How could our weaknesses leave us vulnerable?

## Strengths

- Compliance with legal requirements (accreditations)
- Training Programs
- GPS registration
- Safety inspection program
- Coordination meetings

## Weakness

- Poor participation
- Poor communication
- Resistance in the creation of uniformed safety procedures and protocols that apply to all sites.

## Opportunities

- Follow-ups for wide staff feedback
- Performance assessment of compliance
- Improve integrated system reinforced by a team of Safety Professionals
- Supervisor's participation

## Threats

- Poor Commitment of the Management level
- Personnel changes
- Local Site's "Culture"

**Accreditation process includes a comprehensive registry of people, vehicles and driving authorizations issued by the Project**

## Acronyms & Glossary

# Strengths (Training Program)

From the evaluation and analysis of the employee's tasks, the training program is designed. The risk assessment of the job allows defining the training that each employee requires. The Training Program also defines the basic training of each employee, collaborator or project visitor



# Strengths (Safety Inspection Program)

The definition of the minimum compliance items in each work area allows an efficient analysis of the compliance status and is also a quick way to correct deviations.





# Weaknesses (Poor Participation & Communication)

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We recognize a low participation in the Safety activities in some areas of the programs. For a long time, the division of centers has created a culture of verbal or local communication that represents a weakness when it comes to planning a global informative partnership system.



# Opportunities (Using the Wide feedback)

The opportunity to have the feedback of an entire organization allows Safety to develop broad strategy designs with global impact; which, when added to the broad opportunity of resources, represents optimal conditions for the establishment of global policies and standards. Supervisor's feedback, diverse opinions and experiences is especially beneficial.



# Opportunities (Using the Safety Team potential)

The development of the Safety, Health and environment management system led by a team of EHS professionals provides the opportunity to have a quality system with contributions from various areas of expertise.



# Threats (Management commitment)

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The commitment at the Management level is essential. Without the support and commitment of Management, the acculturation and merge will be more complex and slow. This also puts the commitment of the staff at risk.



# Threats

Site Safety “cultures” and the slogan of ***"here we have always done it like this"*** is a threat to the merge process. We must understand and make it understood that the possibilities for improvement are continuous and dynamic and must always remain open.



# Merged activities already in place

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## Integrated Safety Meeting:

Twice a month the NOIRLab/Rubin Obs. EHS Manager meets with the Senior Leaders Safety Professionals of NOIRLab and Rubin Obs. to outline merger strategies. The next tasks to develop are:

- Guidelines for the Global Training Program (define the baseline to apply)
- Definition of the annual calendar of Global Safety Recommendations
- Definition of critical tasks that require joint support (Coating, Shutdown, Internal Reviews)

# Conclusion

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- The NOIRLab/Rubin/SLAC merger process for Safety, Health and Environment is a process that is already in progress. It identifies the strengths, weaknesses, opportunities and threats and based on this identification, it seeks to efficiently develop the step-by-step plan for the Safety Culture merge.
- The commitment of the Management level is essential since this will be a reflection of the commitment to the staff.
- We recognize that our opportunities are in the workforce feedback, the expertise and the ability of supervisors to know how to do the work, is a plus that we must take advantage of for the benefit of the safety culture merge.



# Questions

