

TMT Future Leaders Workshop Agenda

Day 1: Opening & Dinner - Saturday, December 3, 2016

Time	Session	Lead	Participants	Location	Description
4:00 PM - 5:00 PM	Opening Session & Orientation	Austin	All	Naniloa Upstairs Conf. Room (theater seating)	The Institute for Scientist and Engineer Educators (ISEE) will open the TMT-sponsored workshop and introduce the participants to the workshop's purpose, agenda, and to the development of the future TMT international training program. ISEE will describe our current program design for the training program and how this workshop is meant to give them valuable training in project management while serving as a pilot for many sessions and ideas for the future TMT international training program. Gary Sanders, TMT Project Manager, and Sandra Dawson, Manager of Hawaii Community Affairs for TMT, will also give some opening remarks.
5:00 PM - 6:00 PM	Participant and Staff Introductions	Austin	All	Naniloa Upstairs Conf. Room (theater seating)	Every participant and staff member will present their name, institution, field of study, and advisor's name in 30 seconds or less. This will give a chance for all participants and staff members to get to know one another as we begin to build the Future Leaders community.
6:00 PM - 7:00 PM	Dinner		All	Naniloa Dining Room	

Day 2: Sunday, December 4, 2016

Time	Session	Lead	Participants	Location	Description
8:30 AM - 9:00 AM	Morning Reflections & Overview of Day	Austin	All in cohorts	Subaru Conference Room	Participants will fill out an anonymous reflection on the previous day's sessions to provide ISEE with feedback. We will introduce the plan for today's sessions.
9:00 AM - 11:30 AM	Project Management Introduction	Gary Sanders	All	Subaru Conference Room	Gary Sanders, TMT Project Manager, will introduce work culture in science and engineering projects and how his experience has varied from small to large science and engineering teams. He will talk about how to make visible the culture of a project and how one works within a group in a power structure. He will introduce project management, discussing the essentials of a "perfect project," how one would organize and manage it.
11:30 AM - 12:30 PM	Lunch		All	Subaru Conference Room	
12:30 PM - 2:00 PM	TMT Science Involvement	Warren Skidmore	All	Subaru Conference Room	Warren Skidmore, Telescope Research Scientist for TMT, will present the various roles that scientists and groups of scientists have in the project, how the groups are organized, and what the levels of commitment are. Warren will describe the role of the Science Advisory Committee (SAC), a project scientist, instrument teams, and International Science Development Teams (ISDTs). Q&A time to follow the presentation. As part of the exercises that the workshop participants will go through they will be asked to define the type of science group that is needed to provide input and guidance.
2:00 PM - 2:30 PM	Break		All	Subaru Conference Room	
2:30 PM - 4:00 PM	Systems Engineering Session	Scott Roberts	All	Subaru Conference Room	Scott Roberts, TMT Systems Engineering Group Leader, will describe the systems engineering group and its role in determining the flow down of engineering requirements for the TMT project. Scott Robert's talk will build on Warren Skidmore's presentation on scientists in TMT and how the systems engineering group takes the science input from various sources and translates those into engineering requirements. Q&A time to follow the presentation.
4:00 PM - 5:00 PM	Mauna Kea Safety & Invasive Species Briefing	Virginia Aragon-Barnes	All	Subaru Conference Room	Virginia Aragon-Barnes, Environmental, Safety & Health Compliance Engineer for TMT, will brief all participants on safety and invasive species issues for the upcoming Mauna Kea summit tours.
5:00 PM - 6:00 PM	History and Culture of Mauna Kea	Doug Simons	All	Subaru Conference Room	Doug Simons, director of the Canada-France-Hawaii Telescope, will give a presentation to the group on the history of astronomy in Hawaii, particularly on the summit of Mauna Kea, right here on the island of Hawaii. Doug Simons will also give an overview of the cultural significance of Mauna Kea for the native Hawaiian people and how this pertains to the TMT project. Q&A time to follow the presentation.
6:00 PM - 6:30 PM	Drive to Naniloa		All		
6:30 PM - 7:00 PM	Dinner		All	Naniloa Dining Room	

Day 3: Monday, December 5, 2016

Time	Session	Lead	Participants	Location	Description
8:00 AM - 8:30 AM	Morning Reflections & Overview of Day	Austin	All	Naniloa Downstairs Conf. Room	Participants will fill out an anonymous reflection on the previous day's sessions to provide ISEE with feedback. We will introduce the plan for today's sessions.
8:30 AM - 10:00 AM	Software Group Session	Hanne Buur	All	Naniloa Downstairs Conf. Room	Hanne Buur, TMT Software Group Leader, will give a presentation on TMT software system architecture and software subsystems, Agile software development methodology and how TMT is applying it, software systems engineering at TMT and its importance, international software development teams and methods for collaboration and integration, and opportunities for international astronomy community engagement in operations, software model and algorithm collaboration facilitated through TMT. Q&A time to follow the presentation.
10:00 AM - 11:30 AM	Drive to Hale Pohaku		Group A	N/A	Participants in Group A will depart the Naniloa Hotel and drive up to Hale Pohaku, at the visitor center of Mauna Kea.
11:30 AM - 12:30 PM	Lunch, acclimatize, and safety briefing at Hale Pohaku		Group A	Hale Pohaku	Group A will have lunch and acclimatize to the increased elevation at Hale Pohaku, located at 2,800m (9,200ft). A safety briefing about being at altitude and visiting the summit of Mauna Kea will be provided before departing for the observatory tours.
12:30 PM - 1:00 PM	Drive from HP to Summit		Group A	N/A	Participants will drive to the summit of Mauna Kea, located at 4,205m (13,796ft).
1:00 PM - 1:50 PM	Tour first facility	Keck/Subaru	Group A	Mauna Kea	Half of Group A will visit the W.M. Keck Observatory while the other half visits the Subaru Telescope. Tours will be provided by observatory personnel.
1:50 PM - 2:10 PM	Swap groups		Group A	Mauna Kea	
2:10 PM - 3:00 PM	Tour second facility	Keck/Subaru	Group A	Mauna Kea	Groups will swap between the W.M. Keck Observatory and Subaru Telescope to see the other facility.
3:00 PM - 4:30 PM	Depart Summit & Drive back to Hilo		Group A	N/A	
10:30 AM - 4:30 PM	Analog-to-Digital Inquiry Activity: Group B (includes lunch from 11:45 AM - 12:30 PM in Naniloa dining room)	Austin	Group B	Naniloa Downstairs Conf. Room	Participants in Group B will remain on site at the Naniloa Hotel to experience an engineering inquiry activity. Participants will collaborate in small teams to use principles of adequate sampling to define sampling requirements and derive design specifications required to resolve features of interest in a signal. The activity mirrors authentic engineering design and gives participants the opportunity to work in small international teams effectively toward a common goal.
6:00 PM - 7:00 PM	Dinner		All	Naniloa Dining Room	

Day 4: Tuesday, December 6, 2016

Time	Session	Lead	Participants	Location	Description
8:00 AM - 8:30 AM	Morning Reflections & Overview of Day	Austin	All	Naniloa Downstairs Conf. Room	Participants will fill out an anonymous reflection on the previous day's sessions to provide ISEE with feedback. We will introduce the plan for today's sessions.
8:30 AM - 10:00 AM	Future TMT Instrument PIs	Renate Kupke	All	Naniloa Downstairs Conf. Room	Renate Kupke, Adaptive Optics Project Scientist for University of California Observatories Lick, will deliver a presentation on classes of astronomical instruments. Following the presentation, participants will work in groups to define an instrument to answer a chosen science case and present their ideas to the group.
10:00 AM - 11:30 AM	Drive to Hale Pohaku		Group B	N/A	Participants in Group B will depart the Naniloa Hotel and drive up to Hale Pohaku, at the visitor center of Mauna Kea.
11:30 AM - 12:30 PM	Lunch, acclimatize, and safety briefing at HP		Group B	Hale Pohaku	Group B will have lunch and acclimatize to the increased elevation at Hale Pohaku, located at 2,800m (9,200ft). A safety briefing about being at altitude and visiting the summit of Mauna Kea will be provided before departing for the observatory tours.
12:30 PM - 1:00 PM	Drive from HP to Summit		Group B	N/A	Participants will drive to the summit of Mauna Kea, located at 4,205m (13,796ft).
1:00 PM - 1:50 PM	Tour first facility	CFHT/Gemini	Group B	Mauna Kea	Half of Group B will visit the Canada-France-Hawaii Telescope while the other half visits the Gemini North Observatory. Tours will be provided by observatory personnel.
1:50 PM - 2:10 PM	Swap groups		Group B	Mauna Kea	
2:10 PM - 3:00 PM	Tour second facility	CFHT/Gemini	Group B	Mauna Kea	Groups will swap between the Canada-France-Hawaii Telescope and Gemini North Observatory to see the other facility.

3:00 PM - 4:30 PM	Depart Summit & Drive back to Hilo		Group B	N/A	
10:30 AM - 4:30 PM	Analog-to-Digital Inquiry Activity: Group A (includes lunch from 11:45 AM - 12:30 PM in Naniloa dining room)	Austin	Group A	Naniloa Downstairs Conf. Room	Participants in Group A will remain on site at the Naniloa Hotel to experience an engineering inquiry activity. Participants will collaborate in small teams to use principles of adequate sampling to define sampling requirements and derive design specifications required to resolve features of interest in a signal. The activity mirrors authentic engineering design and gives participants the opportunity to work in small international teams effectively toward a common goal.
6:00 PM	Dinner on own		All	N/A	
Day 5: Final Day - Wednesday, December 7, 2016					
Time	Session	Lead	Participants	Location	Description
8:30 AM - 9:00 AM	Morning Reflections & Overview of Day	Austin	All	Naniloa Downstairs Conf. Room	Participants will fill out an anonymous reflection on the previous day's sessions to provide ISEE with feedback. We will introduce the plan for today's sessions.
9:00 AM - 12:00 PM	Project Management	Gary Sanders	All	Naniloa Downstairs Conf. Room	Gary Sanders will revisit project management, discussing how real world "complex" projects compare to the ideal project. He will also discuss the techniques, challenges and cultures one faces in a global project like TMT.
12:00 PM - 1:00 PM	Lunch		All	Naniloa Dining Room	
1:00 - 2:30 PM	Science Instruments Group Session	Luc Simard	All	Naniloa Downstairs Conf. Room	Luc Simard, the TMT Science Instruments Group Leader, will present an overview of the first generation TMT science instruments, their progress, and the integral role international collaboration has and will play. Q&A time to follow the presentation.
1:00-2:00	Mechanisms for Involving Future Participants in TMT	Lisa/Austin	All	Naniloa Downstairs Conf. Room	This session is an opportunity for participants and session leaders to bring forward ideas on how future participants will be involved in TMT through a future workshop like this, reflecting on the workshop sessions and bringing new ideas up for discussion.
2:00-3:45	Program Feedback & Design Time	Lisa/Austin	All	Naniloa Downstairs Conf. Room	Participants, facilitated by workshop leaders, will work in small groups on topics of their choosing. Some participants may choose to think further about the TMT international training program design, and how particular aspects of the program would function. Others may choose to work on a potential TMT project or problem presented by one of the TMT leaders earlier in the workshop.
3:45-4:30	Share Out	Lisa/Austin	All	Naniloa Downstairs Conf. Room	Participant working groups from the previous session will share their team's progress and ideas with the entire workshop group.
4:30-5:00	Wrap-up, Final Reflections & Survey	Lisa/Austin	All	Naniloa Downstairs Conf. Room	ISEE will conclude the workshop and look forward to the future of this international training program. All participants will fill out an anonymous reflection of the final day's sessions and complete a final survey of the entire workshop experience, giving them the opportunity to give personal feedback and ideas to workshop staff.
6:00 PM - 8:00 PM	Closing Dinner	Lisa	All	Naniloa Dining Room	
Day 6: Departure Day - Thursday, December 8, 2016					
Time	Session	Lead	Participants	Location	Description
9:00 AM - 4:00 PM	Participants Depart	Diana	Drop off at airport		