

# **Charge to the Rubin Observatory Science Advisory Committee (SAC)**

December 30, 2022

## **1. Introduction and Background**

The Science Advisory Committee (SAC) has been a standing committee of the Rubin Observatory Project since January 2014, coinciding with the formal start of the federally funded Rubin construction project. However, the SAC has never had a formal charge; this document is to rectify that. The SAC advises the Rubin Observatory Construction Project and Operations Directors on matters of scientific import, including those that bear on the Rubin scientific community, or are related to the hardware and system design, the survey planning, policies related to data access, and other aspects of the Rubin Observatory. The SAC also serves as a mechanism for members of the Rubin scientific community to express concerns and give input to the Rubin leadership.

The SAC will be a standing committee throughout the span of the Legacy Survey of Space and Time (LSST); indeed, as long as the Rubin Observatory is in operation. The SAC is formally independent of the Rubin Project and Operations teams, being made up of members of the Rubin scientific community who are not otherwise directly funded by the Rubin Observatory. The Rubin Observatory Directors (or their delegates) and the SAC will jointly decide on the questions, tasks, and decision points that the SAC will address. In the past, the SAC has contributed to the debate on such topics as the Rubin filter design, the decision to use sensors from two vendors in the focal plane, the way in which Rubin leadership communicates with the scientific community, the selection of Community Event Brokers, the review of community white papers on the survey, and many other questions. It has also helped develop policy and set up committees defining Rubin data rights, the Rubin LSST Science Collaborations, the Survey Cadence Optimization Committee, and many others.

## **2. Membership**

The SAC shall comprise approximately 12 members, including the Chair. SAC members should be recognized scientists in their own right, with expertise collectively spanning the full range of scientific areas that Rubin will impact (including at least the “four pillars” identified in the Rubin Science Requirements Document). Having said that, SAC members do not

represent, or formally advocate for, any science collaborations of which they may be members.. Rather, SAC members are expected to bring their own scientific expertise and experience to advocate for the productivity of the Rubin Observatory overall, and the Rubin scientific community as a whole.

The membership of the SAC should broadly reflect that of the Rubin science community, being diverse along multiple axes (including but not limited to):

- . Science expertise, as mentioned above.
- . Home institution type, including R1 universities, research institutions, and small and/or underserved institutions.
- . Career stage, ranging from postdoctoral researchers to senior faculty.
- . Geography, as elaborated below.
- . Gender identity.
- . Racial and ethnic identity.

As significant Operations partners, at least one member of the SAC shall be from the Chilean scientific community, one member from the UK scientific community, and one member from the French community.

Only those who have LSST data rights are eligible to be SAC members. SAC members are not required to be a member of any Science Collaborations. As indicated above, SAC members may not be employed directly by the Rubin Project or Operations.

The Coordinator of the Rubin Science Collaborations will serve on the SAC ex officio, but will have voting rights. The Rubin Director(s) may bring any number of Rubin staff to SAC meetings as observers.

New SAC members will be selected by the Rubin Operations Director, in consultation with the current SAC members themselves, as well as the relevant authorities in Chile, the UK, and France. Rubin Observatory will set up a mechanism by which individuals in the Rubin community may indicate their interest to serve, or nominate others.

SAC members (including the chair) will serve a term of two years; terms may be renewed for a second consecutive term. SAC members as of this

writing (Fall 2022) will be able to indicate their interest in serving an additional term starting July 1, 2023 no matter how long they have served in the past. New members will start July 1 of each year, and no more than half the SAC should rotate off at any given time, to ensure continuity.

Each year, the Rubin Operations Director will select one SAC member to serve as Chair of the SAC, and another SAC member to serve as Vice-Chair. An individual may serve as Chair and/or Vice-Chair multiple years. The SAC Chair will be responsible for calling meetings of the SAC, preparing the minutes and recommendations of the SAC, and helping define the agenda and questions that the SAC will tackle. The vice-chair will assist the Chair in setting the agenda of the meetings, and step in for the Chair if the Chair is unable to attend the meeting. The SAC Chair may be invited to serve on other high-level Rubin committees in an ex-officio capacity.

### **3. Committee Activities**

The SAC will normally meet between two and eight times per year, or more frequently at the request of the Operations Director as called by the SAC Chair. These meetings will typically be held remotely. The SAC will also meet once per year at a yearly broad Rubin-related meeting, such as the Rubin Project and Community Workshop (PCW). Rubin will cover full travel costs of SAC members to attend at least one in-person meeting per year. The SAC may call upon Rubin personnel and others to give presentations at their meetings. The SAC session at the yearly broad Rubin meeting will be open to all attendees, but the SAC reserves the right to call an executive session as needed.

All in-person meetings of the SAC will be run in a hybrid fashion, allowing participants to take part remotely.

The SAC will produce minutes from its meetings, in the form of a summary of the discussion, highlighting any recommendations to the Rubin leadership. These minutes will be made public on the [SAC website](#), and Rubin leadership will be expected to respond to its recommendations with a written response in a timely manner.

The time commitment of being a SAC member (other than the Chair) shall

not be more than 16 hours (2 working days) per half-year.

SAC members often serve on other Rubin-related committees or Science Collaboration-related activities; other than the requirement that SAC members not be employed by the Rubin Project, there is no formal limit on how many such commitments SAC members can take on. The SAC can set up standing or ad-hoc subcommittees in consultation and agreement with the Operations Director. These subcommittees will contain a subset of the SAC and and external experts as required.

#### **4. Relationship to Other Rubin Committees**

Here we list some of the other relevant committees that the SAC's purview overlaps with, to distinguish their relative responsibilities and interactions. Note that many of these committees were stood up by the SAC itself.

- The [Survey Cadence Optimization Committee \(SCOC\)](#) works with the team developing the Rubin Operations Simulator and Scheduler to develop a survey plan that maximizes the broad science return of the ten-year LSST. It is a standing committee, and will continue through the life of the LSST. Its recommendations will be reviewed by the SAC (and will be approved by the Rubin leadership). The SAC recommends individuals to serve on the SCOC.
- The [International In-Kind Contribution Evaluation Committee \(CEC\)](#) reviews proposals from the international community for contributions to Rubin commissioning, operations, or the activities of the Science Collaborations in exchange for data rights. The CEC will continue to be a standing committee throughout LSST operations, having a minor advisory role in the annual evaluation process of international contributions.
- The [User's Committee](#) works with the CET (see below) to give a science community perspective of the Rubin Science Platform. It is a channel for the community to suggest improvements to the RSP and the pipelines that populate it with data. The User's Committee is a standing committee, and will continue throughout LSST operations.
- The [Community Engagement Team \(CET\)](#) consists of Rubin personnel charged with supporting the scientific community in all aspects of carrying out science investigations with the LSST data.
- The [Project Science Team \(PST\)](#) consists of Rubin personnel, advising the Project and Operations Director on immediate questions

related to construction, commissioning, and operations. The PST is chaired by the Rubin Project Scientist. At this writing, the PST is defined in terms of the construction project; under operations, it is likely to evolve into a committee advising the Operations Director.

- The [Rubin Science Collaborations](#) are semi-autonomous, consisting of one hundred to over one thousand members each, which are preparing themselves to carry out science analyses with the LSST data. The Science Collaborations are organized following guidelines described in the [Science Collaboration Federation Document](#). At this writing, there are eight Science Collaborations. Representatives of each Science Collaboration serve on a Science Collaboration Council, which is chaired by the Science Collaboration Coordinator. The Science Collaboration Coordinator serves as an ex officio member of the SAC.

## **5. Updating this charge**

This document should be reviewed by the SAC and the Operations Director once per year. Any changes will be implemented upon a  $\frac{2}{3}$  vote of the SAC, and approval from the Operations Director.