

# After SDSS-V: Call for Blue Skies Ideas

## *Background*

With dual-hemisphere robotic fiber positioning operating in SDSS-V as well as the successful design, build, and commissioning of the LVMi — the world’s largest on-sky IFU — it is time to begin thinking about the next phase for the equipment and infrastructure and communities that are, collectively, SDSS. We want to start this process by considering (rather than proposing) big ideas and even radical ideas that might comprise an ambitious and scientifically productive next phase for SDSS.

As part of the planning procedures within the ARC and SDSS communities, an “After SDSS-V” (AS5) Blue Skies Committee (the BSC) was established in early May 2024 to initiate the AS5 Futures Process. The membership of this Committee and contact information are given at the end of this message.

The BSC is soliciting bold and imaginative projects from the astronomical community in order to determine the most exciting possible future for the SDSS facilities and instruments. This announcement is not an invitation for proposals nor is it at this stage a competitive process. This is a call for submission of white papers as part of a brainstorming and design phase, prior to any writing of specific proposals about objectives, hardware, budgets, or timelines.

## *Goals*

The purpose of this call is twofold:

- Identify people who are interested in leading various aspects of the “next SDSS”.
- Develop next-phase ideas that may later be combined into proposals.

The BSC will summarize ideas submitted as part of this process in a document that will be distributed to the interested community and be presented to the ARC Board of Governors at their annual meeting in November.

## *Parameters*

We encourage all community members to think broadly and ambitiously about new scientific programs and about new SDSS system changes, in the context of astronomy in 2027, and to submit Blue Sky Papers (BSPs).

New scientific programs could be based on the existing telescopes and instruments, or on modifications, improvements and augmentations thereof. BSPs should sketch out the necessary parameters for the envisioned science case. These BSPs should specify in broad terms both hardware requirements (telescopes and instrumentation requirements such as spectral resolution, cadence, wavelength coverage) as well as science requirements (target densities, hemisphere, exposure times, survey volume, and area). Authors should make clear how the outlined scientific program will be state-of-the art over the 2027-2033 timeframe in which it would be realized, highlighting the competitive edge vis-à-vis other planned capabilities of that era.

New SDSS system changes could include infrastructure improvements, capability-enhancing upgrades, data analysis and distribution improvements, collaboration models, and other ways to improve the SDSS system, whether or not they are associated with any specific science program. These BSPs should specify in broad terms the positive impacts and potential costs of the envisioned upgrades.

## ***Who Can Submit BSPs?***

We welcome BSPs from any groups internal or external to current SDSS-V members. BSPs should not contain information that is proprietary or otherwise confidential, as the BSP content may be discussed widely within the ARC and SDSS communities. A BSP does not represent an institutional endorsement nor a commitment of an individual's involvement in a further proposal. BSPs will serve as input to a future committee that ARC establishes to select a successor to SDSS-V, even if the writers do not foresee initiating a proposal.

## ***Submitting your BSP***

The BSP should be two to four pages in length (at most four pages of description). The BSP should be uploaded to this site:

[BSP Repo](#)

no later than midnight on 2024 August 31, New Mexico time. Review of BSPs will be on a rolling basis and will begin immediately. Please include the last name of the contact person in your email subject line and in all file names. BSPs may represent an individual or a team; please include the names and institutions of interested members, using extra pages for a complete list if needed.

## ***BSP Review***

The review of BSPs will be performed by the BSC. The BSC will deliver feedback to authors and a report to the entire Collaboration and to the Astrophysical Research Corporation (ARC) by 2024 October 1.

Individuals considering submitting a BSP are welcome to consult with members of the BSC:

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