2DCC-MIP Proposal Process

Proposers are encouraged to contact an advocate from a 2DCC **user support group** prior to submitting a proposal to help make the submission most effective. Proposal materials are submitted online via the **proposal submission portal**.

A. Research Project Proposals

Research project proposals are submitted on a rolling basis or in response to topical solicitations.

Required Materials

1. A cover page that will be automatically generated based on information you provide in the submission form fields (PI Information, Project Personnel, and Demographics).
2. An upload of a single PDF containing, in sequential order, a 3-page project description, plus references (no page limit), and an NSF format Biosketch for all senior project investigators such as faculty and postdocs (two pages each). *Biosketches are not required for undergraduate and graduate students*.

Proposals should follow standard NSF GPG format requirements for margins and font size.

Three-Page Project Description Content – The project description section should answer the following questions:

- What is the scientific significance and long-term impact of the project?
- How does your project align with the goals of the 2DCC in chalcogenides for next generation electronics?
- What 2DCC resources and expertise would be used?
- How will the users' expertise contribute to success?
- What work will be performed at your home institution(s) to support the proposed work?
- What are the broader impacts of the proposed work?

You need not provide a highly detailed schedule of facilities use. These are arranged at a later date for successful proposals in coordination with the user support group.

If your proposal is recommended for support by the user proposal review committee, a technical area scientist assigned to your proposal will contact you to develop the details of your experiment. All selected proposals are expected to go through a safety and facilities review prior to the beginning of the experiment.

B. Sample or Data Request Proposals

Sample request proposals are for standard materials that are routinely synthesized at the 2DCC and can be referenced from the 2DCC list of currently available Thin Films or Bulk Crystals. Data requests can be made for certain experimental data and established ReaxFF 2D potentials.

Required Materials

1. A cover page that will be automatically generated based on information you provide in the submission form fields (PI Information, Project Personnel, and Demographics).
2. An upload of a single PDF containing, in sequential order, a 1-page project description, plus references (no page limit), and NSF-format biosketch for the PI only (two pages).

Proposals should follow standard NSF GPG format requirements for **margins and font size**.

One-Page Project Description Content – The sample request or data request description section of the proposal file should answer the following questions:

- For Sample Requests: What are your material needs and characteristics? Specify details (e.g., material composition, sample size and quantity, doping, etc.)
- For Data Requests: What are your data needs? Specify details (e.g., details of synthesis recipe, characterization or simulation data from in-house research that you are requesting; if data on particular materials systems are needed, please name those chemistries). Consult the currently available samples for Thin Films or Bulk for reference on available materials systems)
- For either request: What is the scientific or technological motivation of your research project?
- How will the samples/data requested from 2DCC enable success of your project?
- What are the broader impacts of your work?

Review

User proposals are evaluated by external experts on a user proposal review committee (UPRC) to avoid conflict-of-interest. The 2DCC will identify external reviewers for each proposal. Reviewers are chosen for their scientific and/or technical expertise from the scientific and technical community at large.

***Confidentiality*:** Reviews will be conducted in strict confidence including content and reviewer identity and will only be shared with 2DCC staff and the UPRC. Dissemination of project summary information (e.g., title, PI name) is limited to NSF reporting and 2DCC user logistics.

Evaluation Criteria: Research project proposals are reviewed in accordance with NSF primary review criteria for Intellectual Merit and Broader Impact and additional criteria of synergy with the 2DCC-MIP focus.

2DCC-MIP Focus

• Advancing synthesis and characterization of 2D layered chalcogenides and related materials
• Supporting the development of next generation 2D devices
• Accelerating materials discovery through combined theory/simulation/data and experiment
• Promoting knowledge sharing of know-how throughout the 2D community and broadening participation

Scoring

5 - Proposal is of high quality and must be pursued
4 - Proposal is of good quality and access should be granted
3 - Proposal is acceptable, and access should be granted at 2DCC-MIP's discretion

2 - Proposal has minimal merit and access should be low priority; marginal scope; marginal equipment match
1 - Proposal has little merit and access should not be granted; out of scope; not suitable for available resource

Example User Proposal Evaluation Form

C. Project Priority

The 2DCC will accept as many top-ranked proposals as the capacity of the facility will allow. Capacity can (and will) change based on the portfolio of projects; therefore, the executive leadership team will contribute to decisions on a balanced portfolio of selected projects.
Additional Criteria for decisions on priority may include:

- PI is from a minority serving institution, a predominantly undergraduate institution or is from a group traditionally underrepresented in STEM disciplines
- PI is a first-time user of the 2DCC
- PI has used the facility previously and is in good standing (e.g., engaging 2DCC throughout project; user adherence to data policy for publication and acknowledgement)

D. Term of Support

Proposals will not be approved for additional support beyond the proposal validity period (sample-only proposals are active for 1 year; research projects are active for up to 2 years). Users must submit subsequent proposals for further use once the project has expired

E. Costs

The cost structure of 2DCC access and use is governed by the requirements set forth by the National Science Foundation (NSF) in the programmatic terms and conditions of NSF cooperative agreement DMR-2039351.

Access to the 2DCC is free for non-proprietary research of academic and government institutions, for which cost-recovery based expenses (e.g., materials and supplies, personnel time, equipment maintenance) are covered by NSF funds. Industry, international, and any proprietary research projects will be charged for use of the facility.

On-site users are responsible for their own living expenses and travel costs. Limited travel funds may be available for users from minority serving or predominantly undergraduate institutions on a case-by-case basis.

F. 2DCC Facility Policy Summaries

The following are policy summaries. Detailed versions are in the 2DCC User Policies and Procedures document.

Project Reporting

2DCC staff will schedule check-ins with users at the midpoint of their award term and within 30 days of completion of their project at a minimum. A user is considered in good standing by participating in check-ins and following the established 2DCC policies and procedures.

Publications

Non-proprietary Data: Users are obligated to inform 2DCC of publications based on research involving 2DCC samples, research or its resources which will be included in 2DCC annual reports to NSF. 2DCC policy for its personnel and users is to publish relevant findings expeditiously in the peer-reviewed literature regardless of the data originator or owner.
Proprietary Data: Proprietary data are not expected to be published.

Co-authorship of publications resulting from user projects is governed by accepted scientific practices and may include 2DCC-affiliated faculty or staff scientists when such individuals make substantive contributions towards fundamental discovery, data analysis, or novel samples.

Acknowledgement

Users must **acknowledge** NSF award DMR-2039351 in all publications, presentations, websites, press releases, etc, for which use of the 2DCC facility either as samples or a user research project is a part of the content. If any of the samples or research originated from the 2DCC prior to June 1, 2021 please consult with 2DCC faculty at time of publication for proper acknowledgement of the 2DCC support as it may also include DMR-1539916 in addition to DMR-2039351.

Data Management

In exchange for use of the facility and its resources, users subscribe to the 2DCC **d**ata management policy. The policy is reviewed annually to adjust to user community needs.