NSF 22-606
(No-Deadline Pilot)

Division of Chemistry

NSF 22-605
(October)

NSF 22-605
(September)

Chemical Theory, Models, and Computational Methods (CTMC)

Chemical Measurement and Imaging (CMI)

Chemical Catalysis (CAT)

Macromolecular, Supramolecular, and Nanochemistry (MSN)

Chemical Synthesis (SYN)

Environmental Chemical Science (ECS)

Chemical Structure, Dynamics and Mechanisms-A (CSDM-A)

Chemistry of Life Processes (CLP)

Chemical Structure, Dynamics and Mechanisms-B (CSDM-B)

Integrative Chemistry Activities

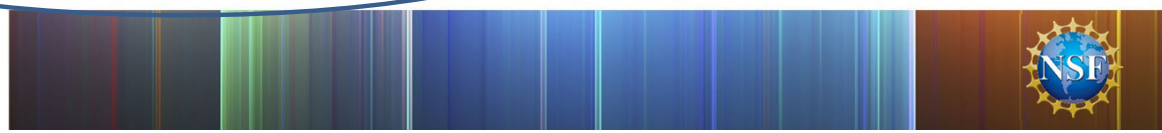
Centers for Chemical Innovation (CCI)

Instrumentation (MRI)

Research Experiences for Undergraduates (REU)

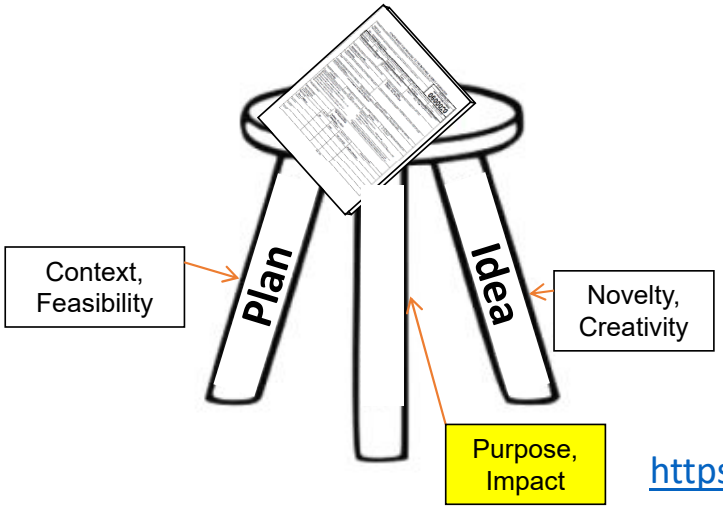
Broadening Participation (BP)

Special Projects



What Chemical Measurement and Imaging (CMI) Is

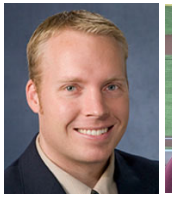
Research focusing on *chemically-relevant* measurement science and chemical imaging, targeting 1) *development of innovative approaches and instruments* likely to be of use to the chemistry community and/or 2) *improved understanding* enabling better performance of new and existing methods.



Thematic Areas:

- *Atomic and Molecular Spectrometry*
- *Chemical Imaging*
- *Cheminformatics*
- *Electroanalytical Chemistry*
- *Magnetic Resonance*
- *Mass Spectrometry*
- *Sensors*
- *Separation Science*


Kelsey Cook


Chris Elles


Emanuel Waddell

https://beta.nsf.gov/funding/opportunities/chemical-measurement-and-imaging-cmi-0

Funded projects: https://www.nsf.gov/awardsearch/advancedSearchResult?ProgEleCode=6880&BooleanElement=Any&BooleanRef=Any&ActiveAwards=true#results

What CMI Is

- Proposals addressing established techniques must seek improved understanding and/or innovative approaches to substantially broaden applicability.
- Sensor-related proposals are expected to address new approaches to chemical sensing, with prospects for broad utility and significant enhancement of current capabilities.
- "Instrument Development" proposals should include, in the Project Description, consideration of a development timeline, potential utility, and prospects for the extension of the technique to other uses or fields.
- Industrial partnerships are encouraged (GOALI), but concepts nearing commercialization may better fit SBIR or STTR.

What CMI Isn't

The CMI Program does not encourage proposals addressing:

- Development of techniques for topological/morphological imaging;
- Research based on known sensing mechanisms, such as probe synthesis or assembly of array-type devices;
- Engineering aspects of membrane separations, microfluidics, and/or "lab-on-a-chip" device design, technology, and application;
- Proposals for the design and synthesis of novel molecular probes for sensing or contrast agents (consider CSDM-B);
- Proposals for optimizing and/or utilizing established methods for specific applications (direct to programs focused on the application);
- Proposals addressing innovations with anticipated utility primarily in other communities (e.g., biology or materials); and
- Proposals with large equipment requests (over $150,000) (better suited to MRI).

Environmental Chemical Sciences (ECS)

The Environmental Chemical Sciences (ECS) Program supports experimental and computational research on the fundamental chemistry of processes in the environment at the molecular scale.

Thematic Areas (include but are not limited to):

- *Atmospheric chemistry including atmospheric aerosols*
- *Geochemistry*
- *Aquatic chemistry*
- *Processes on environmental surfaces, ice*
- *Degradation of pollutants in the environment*
- *Fundamental chemistry of remediation*

https://beta.nsf.gov/funding/opportunities/environmental-chemical-sciences-ecs-0

Funded projects

What ECS Is

- Develop and utilize advanced experimental, modeling and simulation approaches to discover, explain, and predict environmental phenomena at the molecular scale
- Consider the intrinsic complexity and heterogeneity of environmental systems

- Proposals relevant to CAS (Critical Aspects of Sustainabilty), including CAS-MNP (Micro/Nanoplastics) and CAS-Climate Solutions.

What ECS Isn't

- Field measurements and instrument development in support of environmental measurements
- Large-scale models of the environment
- Toxicity studies
- Behavior and fate of nanoparticles in the environment
- …..etc

General Advice on How to Find the Right Program to Submit to

- Read the Solicitation (CHE-DRP NSF 22-605) and the Program Description
- Search existing awards
- Write a 1-2 page summary (what? why? how?) and contact program officer(s)
- If it seems in between programs, ask yourself:
  - Who is interested in the research? What journal do you expect to publish in? What is the title of an expected paper?
  - What is the focus? You may need to choose something to focus on. Split complicated ideas into parts.
  - Look for interdisciplinary competitions that are appropriate.

Next DRP Office Hour:
July 26, 2022 – 4 pm ET

SYN – Chemical Synthesis
CAT – Chemical Catalysis
CSDM-B – Chemical Structure, Dynamics, and Mechanisms B