INSTITUTE FOR CREATIVITY, ARTS, AND TECHNOLOGY
VIRGINIA TECH

MAJOR SEAD GRANTS
CALL FOR PROPOSALS FY 22-23

Submission Due Date
February 11, 2022 (5:00pm EST)

Awards Announced
April 20, 2022

SUMMARY

ICAT brings together scientists, engineers, artists, and designers to work on some of the world's most complex and emergent challenges. Powered by creative people and advanced technology, ICAT gathers and supports diverse teams of faculty and students to engage with issues in industry and society.

We invite proposals for projects that are creative, innovative, and show strong potential to advance the goals of ICAT and its partners. You know that "back-of-the-mind", risky idea you can't get out of your head – the one that may change the world? That's what we're looking for.

Grants can be used for transdisciplinary activities, including creative projects, feasibility studies, and preliminary research. We hope that projects will grow into larger initiatives, performances, exhibitions, or events that are visible at a national or international level.

ELIGIBLE INVESTIGATORS

All faculty members at Virginia Tech are invited to submit an application and lead a project team.

We're looking for teams comprised of faculty from at least two different fields, with preference given to projects that include PIs from two or more colleges.

ICAT celebrates the critical importance of diverse teams of scholars. We want to encourage the diversity of our research teams as much as we can. ICAT is dedicated to InclusiveVT — serving in the spirit of community, diversity, and excellence to create a community that nurtures learning and growth for all of its members. See Virginia Tech's Principles of Community (inclusive.vt.edu) for more information.

SUPPORT AND SPACE

In some instances, ICAT can provide the space and team members in support of SEAD projects for the duration of the project award year.

As part of your proposal, please highlight if you are requesting:

Assistance from ICAT staff

ICAT specialists can become project team members for approved projects. ICAT specialists can support projects using various facets of the Cube, including spatialized sound, immersive environments, visualization, and motion capture.

ICAT Studios

ICAT is also home to a number of unique spaces and studios on campus that may be utilized for ICAT SEAD grant projects. This will be somewhere within the Creativity and Innovation District as needed and when available. For information about ICAT studios, please visit icat.vt.edu/studios. Please include requests for these spaces as part of your proposal document.

RESEARCH AREAS

Proposals should involve two or more departments, preferably in different colleges, and address at least one of the following areas represented by the institute:

Amplifying the Arts

Art and technology continually define and redefine our world. The collision of art, technology, and experimentation drive innovation in all directions. These projects demonstrate how technology can advance artistic practice and how art and design can elevate and improve scientific discovery and output.

Making Big Discoveries with Immersive Technologies

Immersive technologies are changing the research landscape. These projects use visual design, 3D modeling, animation, programming, motion capture integration, and true 360-degree sound to open up entire new worlds of exploration and discovery.

Empowering Data

Pioneering new possibilities with data. Projects explore and present data in some unexpected and surprising ways, introducing new perspectives that can pave the way for lifechanging discoveries.

Bridging Physical Distance

With the propagation of the COVID-19 pandemic, what was once a matter of convenience is now a requirement. These projects go far beyond videoconferencing software and include the use of augmented and virtual reality technologies to bring people from around the world together in shared immersive digital spaces to connect, learn, and experience.

Engaging Community

Science should be available to everyone. Research shouldn't be hidden in labs and buried on computer hard drives. Interactive technology brings data to life and tells the stories of researchers and their work, while sculptures and other works of art show data and computational processes in unexpected, captivating, and often very accessible ways.

Reimagining Education

These projects create educational environments that prepare students to confidently enter a world requiring creativity, adaptability, and collaboration. This work is changing **where** students learn, **what** students learn, and **how** students learn.

Designing a More Sustainable World

Creativity that spurs change. This work supports our ecological and cultural resilience.

Creating the Future of Work

Advances in technology are changing the ways we work. From the aesthetics, functionality, and even physical locations of our workplaces to the ways we collaborate with our co-workers and communicate with our clients, these projects focus on efficiency, productivity, and value.

GRANTS AVAILABLE - up to $25,000 each

Across the research areas noted above, the following categories of grants are available. Please note that by selecting a grant category on the cover sheet and Google drive that it will NOT preclude you from being considered for other categories during the review process. We'll see if your proposal would be a better fit in another category, but please pick one as your first choice.

GENERAL

(A) Open Call for SEAD Projects – up to $25,000

ICAT will fund several transdisciplinary projects, pilot/feasibility studies, and preliminary research. We're looking for project teams that involve two or more of the research areas listed in this document. Project duration should be set for one year, beginning July 2022. And keep in mind that failure IS an option here, so take a chance on something big... something great.

In addition to the open category, we have partnered with other organizations with particular interests within the Research Areas listed above.

SPECIAL PROJECTS

B **Special Project:**
Smart Ag – Technologies, Data, Interpretation – Advancing Ag Through Technology Innovation – up to $25,000

The College of Agriculture and Life Sciences, in partnership with ICAT, seeks proposals that advance agriculture through the use of innovative technologies, cyberbiosecurity of life science-based data, and/or facilitate the interpretation of large data sets for advancing the use of new technologies in agriculture. We're interested in new technologies that promote the rapid collection of data or sensing of biological, biochemical, or physical observations with direct relevance to agricultural applications. We'll consider proposals that integrate advanced technologies to help facilitate the human factor, such as workforce efficiencies or overcoming disabilities to allow continued agricultural engagement. Preference will be given to proposals that focus on new technologies with large data sets relevant to agriculture and life sciences and include CALS faculty as PI or co-PI with a collaborative team to advance data analysis, visualization, and/or protection of data in a meaningful way for research outcomes and translation into potential application. We're looking for projects that include strong partnerships between CALS faculty and non-CALS faculty and advance the priorities and research platforms of the **Center for Advanced Innovation in Agriculture**. The selected project must conform to the goals of the ICAT Major SEAD grant by incorporating aspects of art and design.

C **Special Project:**
Human-Centered Design for Intelligent Data Analytics Tools – up to $25,000

The Center for Human-Computer Interaction, in partnership with ICAT, seeks proposals for novel research on improving the user experience of AI-powered data analysis. While AI and related technologies (e.g., machine learning, computer vision, natural language processing) can be very powerful for the analysis of large, complex, dynamic, or real-time datasets, the end user tools for performing this analysis are typically difficult to use, requiring deep expertise in AI, and therefore inaccessible to many of the people who need to analyze big data or who want to benefit from intelligent interfaces. We are interested in proposals that address this limitation through transdisciplinary collaborations involving human-centered design, AI, and domain experts. We envision that human-centered designers with expertise in HCI, UX, interactive visualization, and the like will be able to work with experts in any domain with complex data analysis needs (e.g., construction, education, intelligence analysis, agriculture, history) to understand their data and questions of interest. At the same time, AI experts will be able to recommend intelligent technologies and approaches that can address these needs. Together, such teams should be able to propose novel, usable, and accessible tools, powered by AI, to solve big data problems in the domain through human-AI collaboration. Proposals should involve teams of at least two faculty members, with at least one CHCI member, and should incorporate both technical and design perspectives. This call for proposals is complementary to the 2022 CHCI workshop on the same theme.

D **Special Project:**
Future of Work, up to $25,000

ICAT will be establishing a new center, called the Center for Future Work Places and Practices. The vision for the center is to be an international leader in research and education exploring the complexities of a future of work that is creative (in process), integrated (in discipline), inclusive (of all identities), distributed (in space and time), equitable (in its distribution of ownership and income), and symbiotic (with technological, institutional, organizational, and social innovation). The center will bring together the diverse array of faculty who integrate research and education perspectives to enhance the impact of emerging technologies on the future of work. We are interested in proposals that will serve as preliminary work for pursuing significant external funding, e.g., from the National Science Foundation, for developing collaborative research efforts with industry and NGOs, and for partnering with industry to cultivate the next generation of talent. Proposals should involve teams of at least two faculty from different colleges, and should focus on the intersection of targeted work domains, such as healthcare, manufacturing, government, media, and education, and a range of cross-cutting research areas, including but not limited to machine learning, pervasive computing, human-centered design, policy, law, economics, ethics, training, cyber-security, and decision-making.

E **Special Project:**
High-Risk, High Reward Transdisciplinary Course Creation, up to $25,000

The Institute for Creativity, Arts, and Technology (ICAT) and the Creativity and Innovation Destination Area, in partnership with the Honors College and the Academy of Transdisciplinary Studies (ATS), seeks proposals for collaborative development of (undergraduate) courses employing unique approaches and structures to deliver one-of-a-kind transdisciplinary learning experiences to students. Proposals should incorporate teams with expertise from multiple colleges and be rooted in faculty expertise related to research, scholarship, creative work, professional experience, and pedagogy. Funded courses will be piloted in conjunction with the Honors College within one year of the award and targeted for regular delivery as part of a program (major, minor, or pathways curriculum) hosted by the ATS. Funding may be used for any expenditures necessary for the design and implementation of the proposed course, including (but not limited to) course buyout, student assistance, materials, guest speakers, travel and lodging, and promotion. We are particularly interested in course proposals that show convergence of expertise and interests in the areas of identities and intersectionalities, space and place, digital transformation and scientific collaboration, as they intersect with creativity, arts, and technology. Successful proposals will partner with CENI on evaluation.

SUBMISSION PROCESS

After you have entered your team data in the Google form, email a PDF copy of your submission, including cover page with all necessary signatures, to Melissa Wyers at mwyers@vt.edu by **5:00 p.m. EST on Friday, February 11, 2022.**

Please address each section in your proposal using Times New Roman 12 point font. Proposals should be limited to five pages, including images but not the coversheet. Proposals received without cover sheet signatures will not be considered.

SUBMISSION GUIDELINES

Step 1   Google Form   https://forms.gle/MKGm69LaCU6kY1R97

Complete team information
- Principle Investigator name, email, and home department (this will be the primary contact person)
- Team member names, emails, and home departments
- Bios and expertise of team members unique to the project
- Current and pending funding of the PI(s)
- Space requests (if applicable)
- ICAT specialist request (if applicable)
- Budget and budget justification
  • Total budget request
  • Budget justification and amounts requested for
    1. Student time
    2. Faculty salary time
    3. Equipment, including software requests
    4. Materials and supplies

Step 2   Proposal Document
(PDF submission to Melissa Wyers at mwyers68@vt.edu)

Please address each section in your proposal using Times New Roman 12 point font. Proposal should be limited to five pages, including images.

T   Times New Roman
     12 pt

limited to
5 pages (including images)

Statement of Need/ Project Description
- Listing of research areas involved (see second page)
- Description of the challenge the team is looking to explore
- Linkage to ICAT mission and goals
- Vision of project impact
- Where project work will happen and whether technical resources from ICAT are needed

Methods and Strategies	- Describe the activities that will be conducted as part of your project
Goals and Objectives	- Describe the overall outcome your project aims to achieve - Describe project outputs - Describe plans for future funding, exhibition, etc.
Plan for Evaluating Project Success	- Describe how you will determine if your project has been successful - Describe anticipated outcomes and deliverables
Timeline	- Timeline should begin after July 1, 2022 and end by June 1, 2023.

FUNDING INFORMATION

- Awarded funds will be available Friday, July 15, 2022. All project expenses must be posted to Banner within 30 days of the project's end date.
- Unspent funds must be transferred back to ICAT within 45 days of the project's end date.
- Funds will not be awarded for conference travel or food.
- Funds can be used to buy out faculty time during the academic year or summer, pending home department approval.

REVIEW CRITERIA

The proposals will be reviewed by the institute director, associate director, and ICAT senior fellows, and then evaluated based on the following criteria:

1 Intellectual merit and innovation

2 Interdisciplinary nature of the team

3 Correlation to the mission of ICAT and its studios

4 Broader impact of the project

5 Potential channels to advance the proposed research

6 Timeline

7 Clear outcome and deliverables

8 Alignment with project categories and/or themes

After the proposals are reviewed, a member of the proposal team may be asked to make a brief presentation to the review committee.

Awards will be announced by Friday, April 20, 2022.