

# Seeding novel technology solutions for society's greatest challenges.



**CITRIS**  
AND THE  
BANATAO  
INSTITUTE

BERKELEY  
DAVIS  
MERCED  
SANTA CRUZ

# Workshop Agenda

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Introductions

2

CITRIS Research Ecosystem

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Seed Program Overview & Outcomes: 2008-2019

4

Seed Funding Opportunities: 2020 RFP

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Connecting with Co-Investigators

Your Name

Departmental Affiliation(s)?

Key Research Interests?

# CITRIS Research Ecosystem

Center for Information Technology Research in the Interest of Society (CITRIS)  
and the Banatao Institute



**Created in 2001  
by CA State  
Legislature**

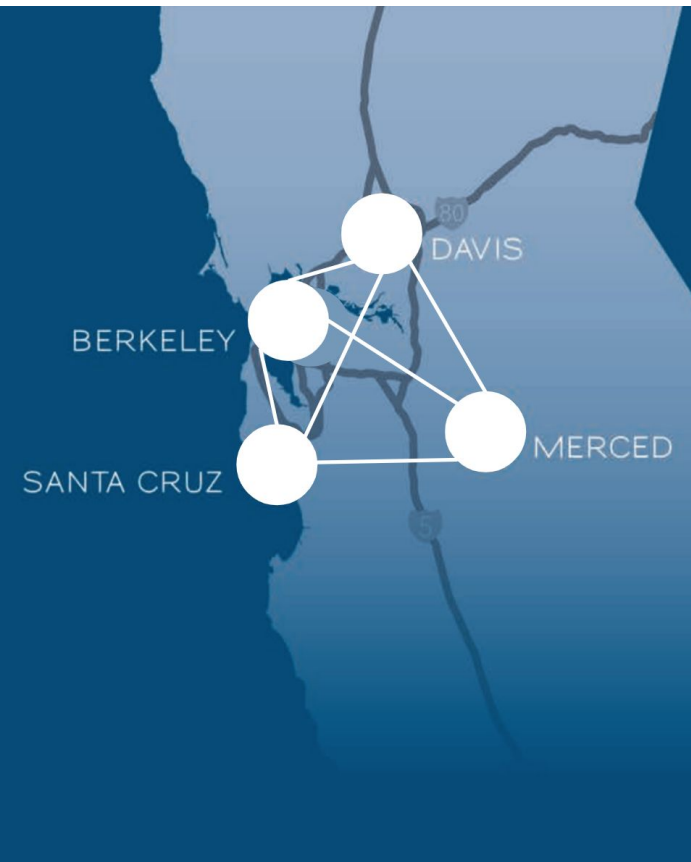
**Connects 4  
UC Campuses**  
*(inc. UC Davis Health)*

**\$100M Annual  
Research Activity**

**\$108M Raised  
by 50+ Startups  
in CITRIS Foundry**

**458 Principal Investigators**

# An “Invention Pipeline” for IT Applications



Core Research Thrusts

CITRIS Seed Funding Program

Major Grants & Institutional Memberships

Labs, Testbeds & Platforms

Startup Acceleration

Public Engagement on Societal Implications

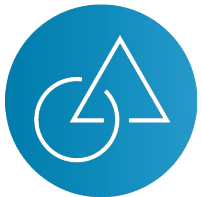
# Vision 2025: CITRIS Research Initiatives



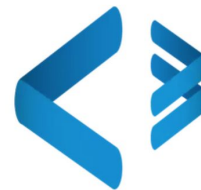
**CITRIS  
HEALTH**



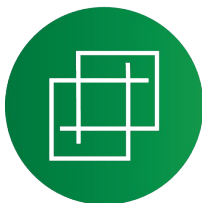
**CITRIS  
POLICY LAB**



**CITRIS  
PEOPLE & ROBOTS**



**THE FUTURE  
OF WORK**



**CITRIS  
SUSTAINABLE  
INFRASTRUCTURES**



**WOMEN IN  
TECHNOLOGY**

WOMEN IN TECH INITIATIVE  
UNIVERSITY OF CALIFORNIA

Details provided in next section.



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# A Robust Network of Research Assets

Pacific Research  
Platform

SimCenter for Natural  
Hazards Research

CITRIS Aviation  
(UAS / UAV)

Sierra Sensor  
Network

California Institute for  
Energy & Environment  
(CIEE at CITRIS)

Building Automation  
Testbeds

CITRIS Invention Lab

Center for  
Virtual Care

Visual Thinking Lab

Marvell  
Nanofabrication Lab

Transatlantic  
Telehealth Research  
Network

CITRIS Foundry  
Startup Accelerator

# CITRIS Community: Opportunities to Engage

**Principal  
Investigators**

**Postdocs  
& Students**

**External  
Researchers**

**CITRIS  
Research Thrusts**

**Tech for Social Good  
Program**

**Visiting Scholars  
Program**

 **CITRIS  
Seed Funding**

**CITRIS  
Seed Funding**

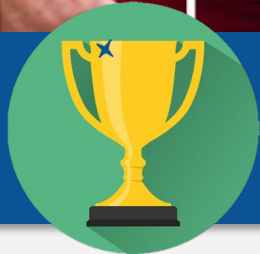
**Innovator in  
Residence**

**CITRIS External  
Partnership Program**

**CITRIS Foundry  
Incubator**

**CITRIS Faculty  
Advisory Councils**





# Overview and 2020 Request for Proposals (RFP)



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The CITRIS Seed Funding Program launched in 2008 as an innovative mechanism to drive early-stage IT research with the potential to benefit society.

**To catalyze novel solutions, the program is designed to:**

- Support promising proposals with the potential for substantial follow-on funding and impact
- Leverage multi-campus strengths and collaboration
- Encourage multi-disciplinary approaches to complex problems
- Emphasize a people-centered approach to technology development
- Fully support research activity; no overhead is taken.

# Seed Funding Program Outcomes: 2008-2019

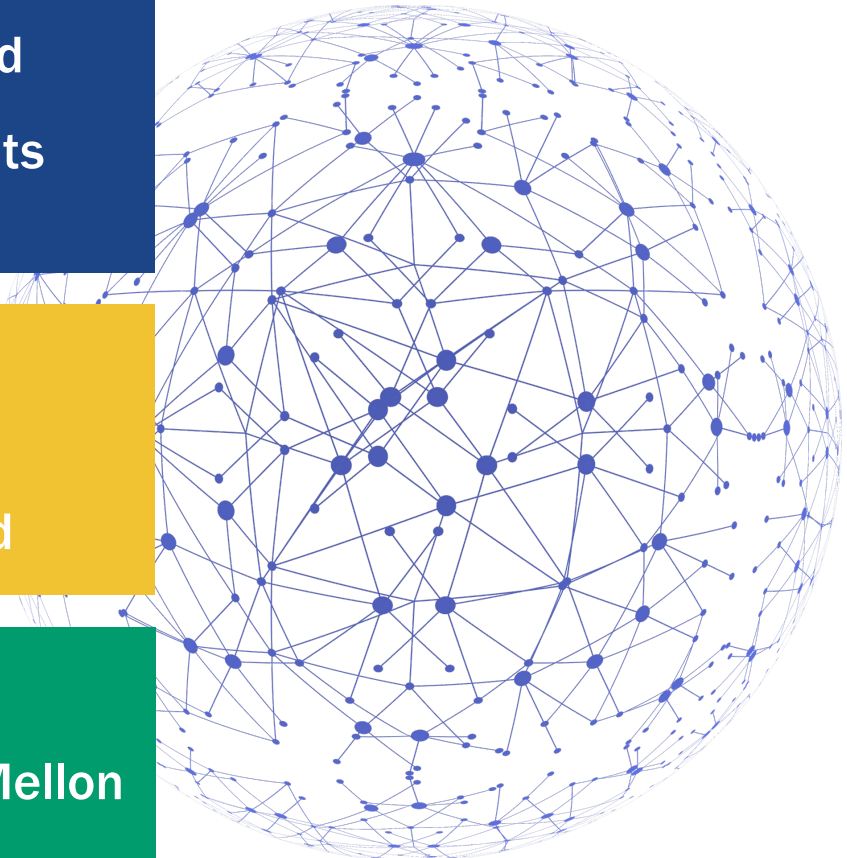
**168**  
Multi-campus  
projects funded

**215** PIs and  
**430** students  
supported

**\$10.2M**  
in Seed Funds  
awarded

**\$60M**  
in follow-on  
funds secured

**Follow-on funding from:**  
NIH, NSF, DOE, CEC, Intel, Microsoft, Mellon  
Foundation, Gates Foundation





# Examples of Recent Award Recipients



## Persistent Autonomous Monitoring For Early Detection and Prediction Of Wildfires

Design, deploy, test, and evaluate under real-world scenarios a novel IoT system to enable accurate, timely, and scalable wildfire detection and prediction.

Katia Obraczka (UC Santa Cruz)  
Stefano Carpin (UC Merced)  
Scott Stephens (UC Berkeley)

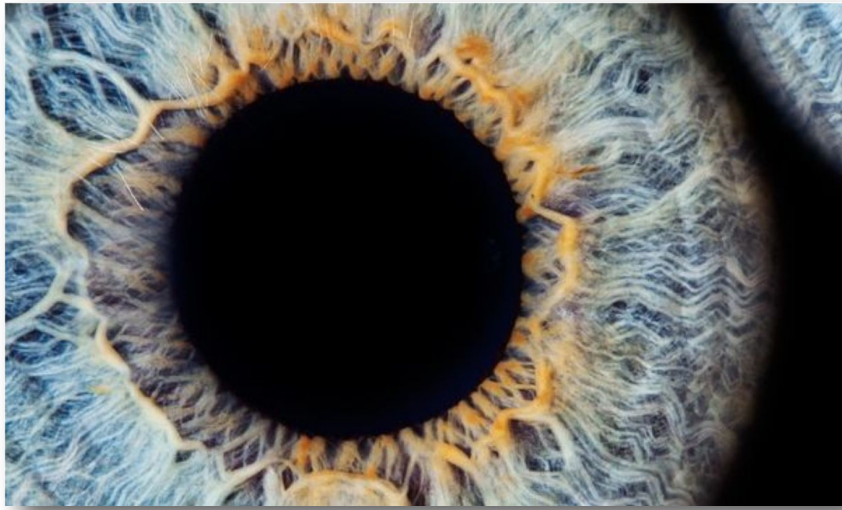


## A Sensor System For Robotic Monitoring And Mapping Of Plant Root And Shoot Health

Develop an unmanned ground robot to non-destructively monitor plant root size and density using X-ray technology.

Reza Ehsani (UC Merced)  
Alireza Pourreza (UC Davis)

# Examples of Recent Award Recipients



## Automation And Deep Learning For Diabetic Retinopathy Screening

Develop a program for automated diabetic retinopathy screening at UC Davis Health using deep learning algorithms developed at UC Berkeley.

Glenn Yiu (UC Davis Health)  
Prabhu Shankar (UC Davis)  
Chen-Nee Chuah (UC Davis)



## Mapping Spatial Inequality: Immigrants In Poverty and Community Services

Build a web app that shows the spatial mismatch between where immigrants live and where community immigrant organizations are.

Irene Bloemraad (UC Berkeley)  
Veronica Terriquez (UC Santa Cruz)

# Seed Funding Opportunities: 2020 RFP

6

Proposal  
Categories

\$500K

Total Funds  
Available

\$40K–\$60K

Awarded  
Per Project

<b>Jan 8, 2020</b>	RFP Announced
<b>Jan 8</b>	Application Portal Opened
<b>Jan–Feb</b>	Campus Info Sessions; Proposal Team Formation
<b>Mar 18</b>	<b>Applications Due</b>
<b>May</b>	Awardees Notified
<b>Sept 1, 2020</b>	Performance Period Begins
<b>Sept 30, 2021</b>	Final Reports Due

# Eligibility & Proposal Requirements

## Eligibility

- Must have campus PI status
- Each proposal must include:
  - ◆ **At least 2 PIs**
  - ◆ **At least 2 campuses**
- Budget cannot be used for PI salary or out-of-state tuition
- Each PI can participate in two proposals per cycle, and serve as Lead PI on only one
- For prior awardees: A status report must be submitted before applying for new Award

## Proposal Components

- ❑ Name, campus, department, CV link for each PI
- ❑ Project Title
- ❑ Abstract (*250 words*)
- ❑ Narrative (*1500 words*)
- ❑ Impact Statement (*500 words*)
- ❑ Potential Applications (*500 words*)
- ❑ Budget summary (*500 words*)
- ❑ Illustrative graphic file (*optional*)
- ❑ \*SPO approval not necessary

# Proposal Evaluation

Proposals are reviewed by the CITRIS Campus and Initiative Directors using the following criteria:

1. **Feasibility**: Achievable within 12-18 months?
2. **Creates solution to a societal challenge**: Is problem and potential impact clearly identified?
3. **Potential for follow-on funding**: Will seed support strengthen case for larger external proposal?
4. **Alignment with CITRIS and the Banatao Institute initiatives**: Furthers one or more of the CITRIS interest areas in RFP
5. **Use of CITRIS research assets**: Utilizing the Marvell NanoLab, CITRIS Invention Lab, or other CITRIS-affiliated assets is encouraged but not required.
6. **Inclusion of pre-tenured faculty**: Highly encouraged, but not required.



# Reporting & Impact Tracking

Tracking these project outcomes helps us continue the program and promote your successes!

- Publications & Scholarly Presentations
- Follow-on Funding — *pending and/or confirmed*
- Entrepreneurial Spin-offs
- Media Recognition
- Students Engaged in the Work

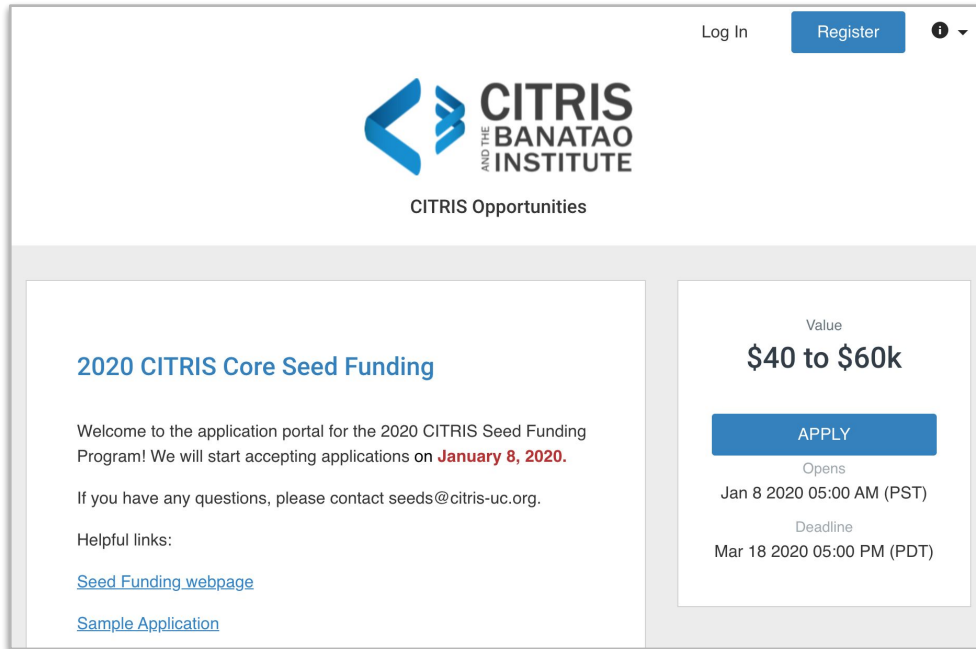
Awardees will receive reminders to complete a brief, online Final Report or No-Cost Extension request.

# How To Apply: Use Online Portal

Access the online application at:

[bit.ly/CITRISSeed2020](https://bit.ly/CITRISSeed2020)

Or select Programs & Labs > Core Seed Funding in the top menu of our [homepage](#).



## Portal Benefits:

- ✓ Easily manage team applications with multiple PIs
- ✓ Add editors or admin support staff to your proposal
- ✓ Submit reporting forms
- ✓ Personal account with your award history
- ✓ No paper or mailing required

**Applications due by 5:00PM on  
Wednesday, March 18, 2020**



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# 2020 Request for Proposals: Areas of Interest



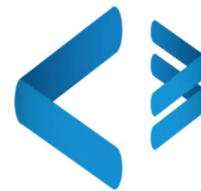
**CITRIS  
HEALTH**



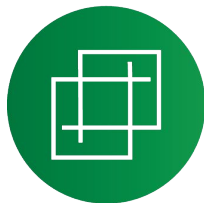
**CITRIS  
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**THE FUTURE  
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**WOMEN IN  
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WOMEN IN TECH INITIATIVE  
UNIVERSITY OF CALIFORNIA

Please find detailed category descriptions  
in the full RFP document [on our website](#)



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# *How can technology improve health care in the digital era?*



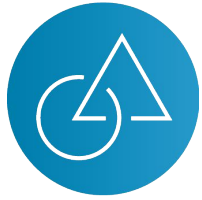
**CITRIS  
HEALTH**

- Data analytics
- Care management solutions
- New platforms and sensors
- Integrated wireless, mobile, and app-based solutions
- Technology solutions for aging and chronic disease

[citris-uc.org/initiatives/health](http://citris-uc.org/initiatives/health)



# *How do we harness the power of AI and robotics to enrich human capability and experience?*



**CITRIS  
PEOPLE & ROBOTS**

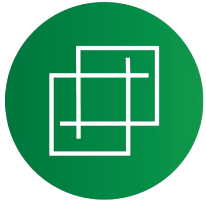
- Human-Centric Automation
- Bio-Inspired Robotics
- Deep Learning
- Cloud Robotics
- Healthcare Robotics
- Internet of Things

[citrisc-uc.org/initiatives/robotics](http://citrisc-uc.org/initiatives/robotics)





# *How can we apply emerging technology to support tomorrow's infrastructure?*



## **CITRIS SUSTAINABLE INFRASTRUCTURES**

- Integrated sensors, data management, and advanced controls to increase productivity and sustainability of energy systems
- Energy generation, storage, distribution
- Intelligent water infrastructures
- Traffic and mobility management, UAS/UAV, energy footprint of transit
- IT that supports UCOP's goal to become carbon neutral by 2025



[citris-uc.org/initiatives/sustainable-infrastructures](https://citris-uc.org/initiatives/sustainable-infrastructures)

# *How do we build — and harness — technology that protects privacy, security, and democracy?*

**CITRIS  
POLICY  
LAB**

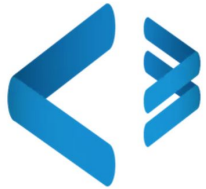
**CITRIS  
POLICY LAB**

- Computational Propaganda
- Inclusive AI
- Digital Inclusion
- Democratic Innovations
- Disaster Risk Reduction
- Digital ID Systems
- Blockchain for Public Sector

<https://citrispolicylab.org>



# *How will automation, intelligent tools, and algorithms forever change the way we work?*

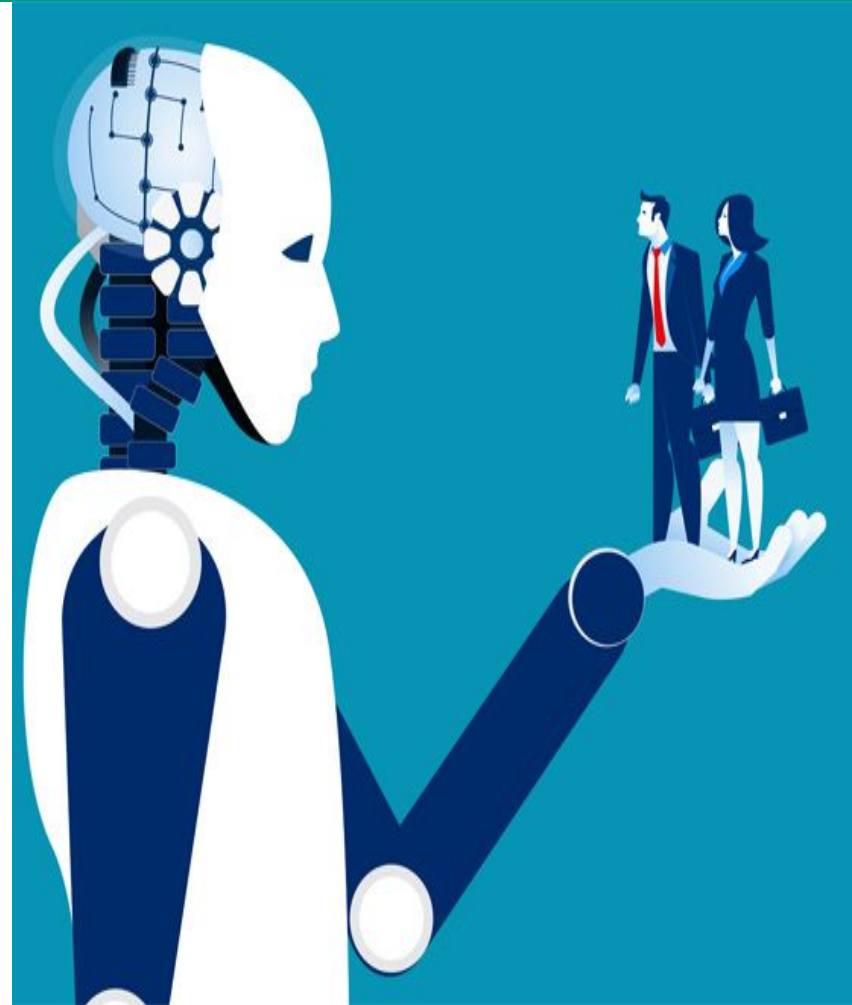


## THE FUTURE OF WORK

Ways of working, earning, and learning that support the healthy development of societies and economies:

- Rise of the Platform Economy
- Intelligent Tools Deployment
- Technology Assessment
- Job Creation and Entrepreneurship
- Solutions for Upskilling Workers

<http://wits.berkeley.edu>





# *How can CITRIS and UC foster a more inclusive workforce, from education to employment to leadership?*



**WOMEN IN  
TECHNOLOGY**

WOMEN IN TECH INITIATIVE  
UNIVERSITY OF CALIFORNIA

**Novel analyses, benchmarks,  
and interventions to advance:**

- Diversity Metrics
- Women in Entrepreneurship
- Bridges to STEM
- Telling Women's Stories



<https://witi.berkeley.edu>

# Program Support & Contacts

## Info Session Q&A

Resources for Applicants: <http://bit.ly/CITRISSeed2020>

- Link to this presentation
- Sample application form
- List of all prior awardees
- FAQ page

## Further Questions?

- Connect with your CITRIS Campus Director and Staff
- Email our Seed Funding team at [seeds@citris-uc.org](mailto:seeds@citris-uc.org)

# Connecting with Co-Investigators

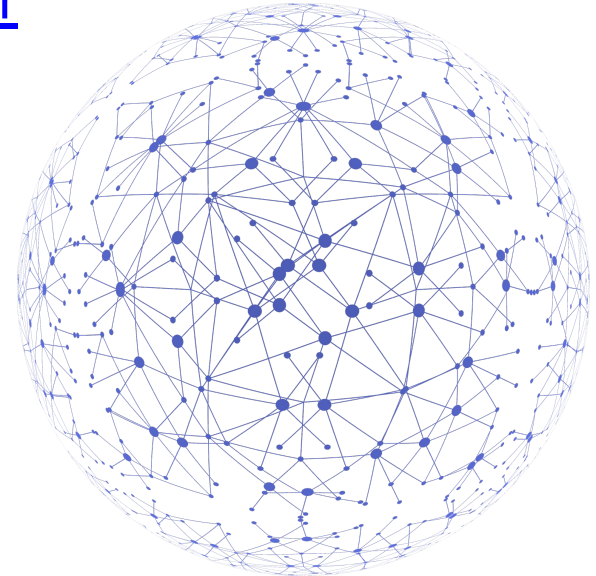
- ➔ **Access the CITRIS Researcher Database:**  
<https://citris-uc.org/people/researcher>

Search by keyword (name, campus, discipline, application area)

- ➔ **Join the team formation interest list:**  
<http://bit.ly/CITRISSeedInfo2020>

List is shared with CITRIS Campus and Initiative Directors to assist you with forming proposal teams, if needed

- ➔ **Attend an upcoming CITRIS event**





# Thank you for your interest

You are welcome to share this presentation with fellow investigators on CITRIS campuses.

**Application Deadline:**  
**March 18, 2020**



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