Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII)

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National Science Foundation

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Outline

- Goals of the program
- Results from last year
- Changes from last year
- Eligibility
- Areas of interest
- Submission process
- Review process
- Frequently Asked Questions
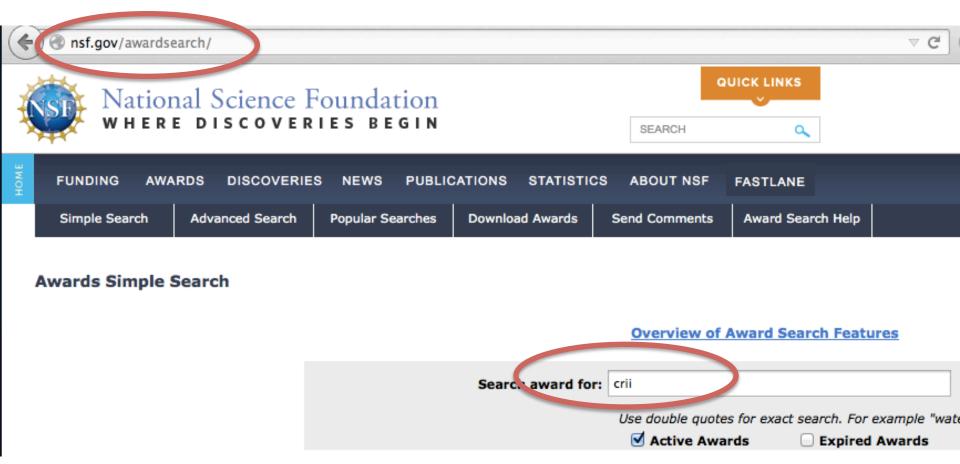- Program Director contacts

Program Goals

- Encouraging research independence immediately upon obtaining one's first academic position

- Undertake exploratory investigations

- Acquire and test preliminary data

- Develop collaborations within or across research disciplines

- Develop new algorithms, approaches, and system designs/prototypes

Results from FY15 Competition

- 82 awards
- $12.4M
- 12 CISE programs

Finding Previous Awards

Export up to 3,000 Awards: **CSV | XML | Excel | Text**

Sort By: Relevance ▼   Results size: 30 per page ▼   ▦ **Table** | ☰ List   ◀◀ ◀ Pa

CRII: CSR: Rethinking Operating System Structure for Wearable Devices
Award Number:1464357; Principal Investigator:Felix Xiaozhu Lin; Co-Principal Investigator:; Organization:Purdue University;NSF Organiza
Amount:$175,000.00; Relevance:40.27;

CRII: CHS: SCH: Novel User Interfaces for Reporting Personal Health Data to Lay Individuals
Award Number:1464214; Principal Investigator:Lauren Wilcox; Co-Principal Investigator:; Organization:Georgia Tech Research Corporation
Amount:$174,766.00; Relevance:40.26;

CRII: NeTS: Enabling Demand Response from Cloud Data Centers -- from Sustainable IT to IT for Sustainability
Award Number:1464388; Principal Investigator:Zhenhua Liu; Co-Principal Investigator:; Organization:SUNY at Stony Brook;NSF Organizati
Amount:$174,957.00; Relevance:38.88;

CRII: SCH: Modeling and Analysis of Genetic Regulatory Networks under Drug Perturbation
Award Number:1464387; Principal Investigator:Xiangfang Li; Co-Principal Investigator:; Organization:Prairie View A & M University;NSF Or
Amount:$175,000.00; Relevance:38.88;

CRII: SHF: A Compiler and Runtime Infrastructure for Flexible Scheduling and Scheduling-Enabled Optimizations on GPUs
Award Number:1464216; Principal Investigator:Bo Wu; Co-Principal Investigator:; Organization:Colorado School of Mines;NSF Organization
Relevance:38.88;

CRII: CSR: Rethinking Operating System Structure for Wearable Devices

NSF Org:	
Initial Amendment Date:	
Latest Amendment Date:	
Award Number:	
Award Instrument:	
Program Manager:	
Start Date:	
End Date:	
Awarded Amount to Date:	
Investigator(s):	
Sponsor:	Purdue University Young Hall West Lafayette, IN 47907-2114 (765)494-1055

ABSTRACT

CRII: CSR: Rethinking Operating System Structure for Wearable Devices

Wearable computing devices are playing increasingly important roles in areas like education, business, and healthcare. However, the major metrics of wearable devices, most notably interactive performance and energy efficiency, are far from satisfactory. To address this challenge, this CRII research project examines the key component of a wearable device, namely the operating system, and explores designs that fit in the unique characteristics of wearable devices. Wearable devices have unique form factors and usage models, and highly specialized workloads, and the operating system needs to be virtually specialized for different workloads.

This project develops a comprehensive characterization of existing wearable workloads on current and emerging hardware platforms, and a set of structuring principles for guiding the design of wearable operating systems that can be specialized for multiple types of workloads. The project develops an operating system prototype whose design follows the principles and thus demonstrates the effectiveness of the principles.

The project leverages collaborations with industry leaders to foster a broad impact on the commercial development. The project outcomes will be integrated into the operating system course curriculum. The research program offers a platform for involving undergraduate students in publishable research and for promoting science and engineering to high-school students, and under-represented groups.

Changes from Fall 2014 Competition

- When eligibility is determined, and specific terms of eligibility;

- The expected contents of the department chair/head letter; and

- That funds may be used for undergraduate students and postdoctoral scholars, as well as graduate students.

Program Eligibility

- At the **submission deadline**:
- Primary appointment in a computer science, information science, or electrical or computing engineering department, or in a related field of computational science (where the PI would normally submit proposals to CISE programs)
- Must be in academic position at a 2 or 4 year college or university accredited in, and having a campus located in the US
- No more than 5 total years after PhD, except family/medical leave
- No more than 2 years in academic positions after PhD, not counting family or medical leave
  - Positions in government/industry or as postdoc or research associate do not count towards 2 year timeline
  - Positions in academia overseas <u>do</u> count
- Not tenured

Program Eligibility (cont)

- **At the submission deadline**, the PI may not have received any other grants in the PI role from any government institution or agency
- Following do NOT disqualify:
  - Award as a co-PI or Senior Personnel on another grant;
  - Workshop or student conference travel awards;
  - Doctoral dissertation improvement grants;
  - Post doctoral research fellowship awards, such as SEES Fellows or CI Fellows;
  - A Graduate Research Fellowship or similar fellowship award from NSF;
  - REU or RET awards;
  - SBIR or STTR awards that were received while the PI worked in industry;
  - Awards from PI's university;
  - Awards from companies or private foundations

Areas of Interest

- Anything that fits within any of the NSF CISE research programs:
    - Cyberinfrastructure (CI)
    - Algorithmic Foundations (AF)
    - Communications and Information Foundations (CIF)
    - Software and Hardware Foundations (SHF)
    - Computer Systems Research (CSR)
    - Networking Technology and Systems (NeTS)
    - Information Integration and Informatics (III)
    - Cyber-Human Systems (CHS)
    - Robust Intelligence (RI)
    - Cyberlearning and Future Learning Technologies (Cyberlearning)
    - Cyber-Physical Systems (CPS)
    - Secure and Trustworthy Cyberspace (SaTC)
    - Smart and Connected Health (SCH)
    - STEM + Computing (STEM+C) Partnerships
- Program sites have more information on topics for each program

Submission Details

- Project summary plus 10 pages of project description; see GPG for standard NSF font & margin limits

- No co-PIs or other senior personnel permitted

- Postdocs are allowed

- Proposals (< $175,000 for 2 years)

- Submit proposal to NSF, deadline: 30 September 2015

- Limit of 1 proposal per PI

  - **Note**: this limit is <u>distinct</u> from the PI limit in any other NSF solicitation

- No classified proposals will be accepted

Submission Details (cont)

- Data Management Plan

- Postdoc Mentoring Plan

Must upload *Department Chair letter* that certifies that the PI meets the eligibility criteria, including that he or she is in the first two years of a tenure-track or research science or education position (or equivalent), but not tenured.

Submission Title

- Begin proposal title with **CRII:** followed by the acronym of the program most appropriate to your proposal
  - Cyberinfrastructure (CI)
  - Algorithmic Foundations (AF)
  - Communications and Information Foundations (CIF)
  - Software and Hardware Foundations (SHF)
  - Computer Systems Research (CSR)
  - Networking Technology and Systems (NeTS)
  - Information Integration and Informatics (III)
  - Cyber-Human Systems (CHS)
  - Robust Intelligence (RI)
  - Cyberlearning and Future Learning Technologies (Cyberlearning)
  - Cyber-Physical Systems (CPS)
  - Secure and Trustworthy Cyberspace (SaTC)
  - Smart and Connected Health (SCH)
  - STEM + Computing (STEM+C) Partnerships
- More than one program is permitted
- Ex: *CRII: SaTC CPS: Securing Espresso Makers Against Caffeine Loss*

Proposal Review Process

- Proposals will be reviewed through standard NSF merit review process including Intellectual Merit and Broader Impact criteria

- Factors to be considered:
  - Relevance to one or more CISE programs
  - Appropriateness to 2-year timeline
  - Potential of activities to produce sufficient preliminary results to serve as the basis for future competitive research proposals (e.g., CAREER)
  - Whether the activities are necessary and critical steps for the PI to achieve research independence

Budget Details

- Up to $175,000 / 2 years
- 35-40 awards are anticipated, subject to availability of funds
- Funding for students, equipment, travel
- No summer salary, course buyouts, or academic year salary costs are allowed
- Most of the funds should go to student(s)
- Eligible for Research Experience for Undergraduates (REU) supplements

FREQUENTLY ASKED QUESTIONS

Frequently Asked Questions
Eligibility

Q: Is a tenure-track appointment required?

A: No; eligible PIs must be in the first two years of a tenure-track <u>or</u> research science <u>or</u> education position (or equivalent).

Q: Does receiving an EAGER as a PI disqualify me?

A: Yes, any grant from a Federal agency as a PI (Including as a PI from a non-lead institution), regardless of size (with exceptions previously noted) disqualifies the PI.

Proposal Submission Related

Q: What are appropriate uses of funds for faculty at 2-year and undergraduate-only institutions?

A: Funds may be allocated to undergraduate support. The proposal should describe a mentoring plan as well as strategies for integrating the undergraduates into a research group given their heavy course load.

Q: Does submitting to CRII prevent a future CAREER award?

A: No, we expect that many CRII awardees will subsequently submit CAREER proposals.

Proposal Submission Related

Q: May I submit to CAREER and CRII in the same year?

A: Yes, you may (provided the two proposals are substantially different). However, the CRII program is intended to provide faculty with resources to enable them to begin their research and achieve preliminary results that will, in turn, allow them when ready to write proposals that are more likely to succeed in very competitive programs such as CAREER.

Frequently Asked Questions
Proposal Submission Related

Q: May I submit the same proposal to CRII as another program?

A: No, the same proposal may not be submitted twice.

Q: Does a submission to CRII count towards the 2 proposal limit for CISE core programs or other CISE programs?

A: No, you can submit 1 proposal to CRII without impact on the limits in any other solicitation.

Frequently Asked Questions
Award Related

Q: How many awards have been made in the past?

A: 2014-15 was the first year for this program, and there were 82 awards.

Q: How many awards will be made for 2015-16?

A: We expect to make 35-40 CRII awards, subject to the availability of funds, but there could be fewer or more.

Q: Can I get copies of previous proposals?

A: Proposals are the property of the author, so we cannot share them. However, abstracts for all awards are available on the NSF web site.

Frequently Asked Questions
Who to Contact

Q: Who should I contact with questions?

A: Questions about the "programmatic" aspects of CRII (such as eligibility or budgets) should go to the division representatives:

> *For ACI: Sushil Prasad*
> *For CCF: Almadena Chtchelkanova*
> *For CNS: Jeremy Epstein*
> *For IIS: Ephraim Glinert*

Technical questions ("is my project appropriate for program <X>") should go to the program officers for that program.

For further questions

If you have additional questions after the webinar concludes, please send them via email to

Jeremy Epstein, NSF CISE/CNS, 703-292-8338, jepstein@nsf.gov
Almadena Chtchelkanova, CISE/CCF, 703-292-8910 achtchel@nsf.gov
Ephraim Glinert, CISE/IIS, 703-292-8930, eglinert@nsf.gov
Sushil Prasad, CISE/ACI, 703-292-8970, sprasad@nsf.gov

with the subject line starting with "CRII:"

The presentation will be available following the WEBINAR at
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504952

The solicitation is available at

http://www.nsf.gov/pubs/2015/nsf15569/nsf15569.htm
FAQ is at
http://www.nsf.gov/pubs/2015/nsf15087/nsf15087.jsp

Questions ?

The telephone line is now open

Takeaways

- CRII is for new faculty members to initiate independent research through funding students, equipment, and travel

- Proposals due 30 Sep 2015 to NSF

- Contact an NSF program officer with questions!