Overview of the CREU 2018-2019 Program for Mentors

A Webinar for CREU Mentors 2018-2019

Presenters
Bonita Sharif, University of Nebraska - Lincoln
Daniela Cárdenas, Program Manager, CRA
Verónica Melesse Vergara, CREU Co-Director

The CREU program is sponsored and coordinated by CRA-W and IAAMCS
This is the Q&A Box
Webinar Overview

• Program Overview
  – CREU Mission
  – CREU Expectations
  – Milestone Timelines
• Best Practices
  – Lessons learned from successful Mentors
• Q&A
Program Goals

• **CREU Mission**: Increase the number of women and underrepresented groups entering graduate studies in CS

• **Program Structure**: Enables successful student engagement in research:
  – Mentor provides guidance and structure
  – Research stipend frees students from other work
  – Regular reporting helps students stay on track

• **Students will gain**:
  – Real world understanding of research
  – Confidence in their technical abilities
  – Experience working in teams
  – Boosted interest in graduate school
  – Diverse experience to support grad school applications
CREU Student Expectations

• Students are expected to be actively engaged in research experiences including:
  – Working on a well-scoped and well-defined research problem
  – Using scientific methods to generate and/or test a hypothesis
  – Collaborating with colleagues
  – Collecting data or conducting experiments
  – Analyzing data with statistics or other tools
  – Explaining results
  – Writing or co-authoring a research paper or report
  – Presenting a research paper or report
  – Publishing a research paper or report
CREU Mentor Expectations

• Mentors are expected to be actively engaged in supporting and monitoring their students’ research experience including:
  – Carrying out weekly check ins with each student/team to discuss goals, outcomes, and ongoing tasks
  – Monitoring students’ blogs on a weekly basis, completing blog reports on a monthly basis
  – Encouraging collaboration amongst team members
  – Analyzing data with statistics or other tools
  – Assisting students/team to submit research paper to conferences
  – Reaching out to CREU Co-Directors if additional assistance is needed
# Program Required Reporting

- **Program Procedures and Requirements**
  - [http://cra.org/cra-w/creu/#financial-support](http://cra.org/cra-w/creu/#financial-support)

<table>
<thead>
<tr>
<th>Students</th>
<th>Mentors</th>
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<tr>
<td><strong>Weekly Blogs</strong>&lt;br&gt;• Students must keep up-to-update weekly blog detailing:&lt;br&gt;  • Work accomplished including literature review and research methodology&lt;br&gt;  • Short and long term research goals&lt;br&gt;  • Outcomes</td>
<td><strong>Monthly Blog Updates</strong>&lt;br&gt;• Mentors should closely monitor and guide their students during the research project.</td>
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<td><strong>Mid-year Report</strong>&lt;br&gt;• Each CREU team will be expected to submit a Mid-year Report</td>
<td><strong>Quarterly Progress Reports</strong>&lt;br&gt;• Update from mentor on state of project and student involvement</td>
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<tr>
<td><strong>Final Report</strong>&lt;br&gt;• Each CREU team will be expected to submit a Final Report</td>
<td><strong>Final Report</strong>&lt;br&gt;• Final report from mentor on CREU project and level of student involvement</td>
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Travel and Research Supply Requests

Submit all Requests in Advance of Making Purchases

• **Research Experience Related Travel Request**
  – CREU participants are able to receive funding for domestic travel for activities directly related to the student’s research experience.
  – *Submit Travel Request 3 months prior to the conference event.*

• **Research Supply Funding Request**
  – CREU participants are able to receive funding for supplies used for CREU research.
  – CREU does not provide reimbursement for general purpose computing equipment such as laptops or iPads.
  – *Submit supply requests prior to purchasing the equipment.*
How can we help you?

WE WANT YOU AND YOUR STUDENTS TO SUCCEED!

• Reach out to CREU Co-directors and CRA-W staff with questions and requests for assistance: creu@cra.org

• This year, we are using Slack as a platform to communicate with CREU program participants.
  – We appreciate your active participation. If you do not have access to Slack as well as the #creu2018-2019 channel yet, please contact us.
  – We have public #mentors and #students channel as well that you are welcome to use.

• Flag issues to us as they arise. The earlier we know, the earlier we can find a solution.
BEST PRACTICES:
Bonita Sharif, University of Nebraska - Lincoln
Project Plan

• Conduct an empirical study on how developers use Stack Overflow.
  – Literature Reviews (picked by mentor initially)
  – Experimental Design (RQ, experiment setup, threats to validity, metrics, analysis)
  – Analysis and Results
  – Informal dissemination
  – GHC Submission

• Connect to a larger research project in the lab.
  – Communicate with other team members on extending and testing code structure
  – Schedule lab for their study
  – Recruit and Schedule participants for their study
  – Conduct study
Student Roles – Mentor Perspective

• Teams with members whose skills complement each other work best

• All need to learn presentation skills and should present either formally or informally weekly.

• All need to learn how to use a reference manager (Zotero, bibtex,...)

• All need to learn writing skills
  – Start a template of the end of year report early and keep adding to it
  – CREU provides a template

• Create an environment conducive to collaboration
Note on Literature Reviews

- Teach students how to perform extended literature searches.
- Teach students how to read and review.
- 1 page write-ups for each paper read
  - Motivation, RQ, Hypothesis, Method, Results, Future Work
- Summary table highlighting key features
- Ask probing questions

<table>
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<tr>
<th>Venue/Year</th>
<th>ID</th>
<th>Author List</th>
<th>Title</th>
<th>Research Question</th>
<th>Method</th>
<th>Results</th>
</tr>
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<tbody>
<tr>
<td>29th International Conference on Software Engineering (ICSE’07)</td>
<td>1</td>
<td>Andrew Ko, Robert Detlo, Gina Venolia</td>
<td>Information Needs in Collocated Software Development Teams</td>
<td>-What information do developers seek? -Where do they seek this information? -What prevents them from finding information?</td>
<td>N =17</td>
<td>-Discovered 21 questions developers ask the most important -What coworkers are doing is #1</td>
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| ICSE’11 Waikiki, Honolulu, HI, USA | 2 | Christoph Treude, Chad Barzilay, Margaret-Anne Storey | How Do Programmers Ask and Answer Questions on the Web? | -What kinds of questions are asked on Q&A websites for programmers? -Which questions are answered and which ones remain unanswered? -Who answers questions and why? -How are the best answers selected? -How does a Q&A website contribute to the body of software development knowledge? | extract questions and answers from Stack Overflow -38,419 Questions -68,467 answers | -Questions: How-to, discrepancy, environment, error, decision help, conceptual, review, non-functional, novice, noise -Answered questions: View, conceptual, and how-to/novice more frequently -
Our local slack

@nmhalavick is it possible to change the colors a bit for the current graph? The colors seem too close together is that an easy change?

12:44 Natalie Halavick Here's the graph. Does this look okay?

Image from iOS

12:45 Bonita Sharif colors are better but the graph is fuzzy and blurry can you make it bigger and then export?

Tuesday, September 18th

07:17 Natalie Halavick If you haven’t sent the poster, I just updated it. If you already did, it should be fine with the old graph.
Recommendations for New Mentors

• Meet with your students every week regardless of progress.
• To-do list with deadlines + Messaging + Document storage.
  – E.g., basecamp + slack + dropbox
• Have students maintain to-do list(s) and volunteer for tasks.
• Brainstorm solutions with students. They need to own the project.
• Monitor blog reports and provide suggestions for improvement.
• Have students understand what it means to check off an item on a to-do list.
• Have students do dry runs on presentations in front of your group.
• Never forget the end goal – preparing your students for grad school.
Questions

This is the Q&A Box
Resources

Visit conquer.cra.org for resources for your REU experience

Encourage your students to join the CRA-W mailing list, **CRA-W Updates**, by going to bit.ly/1McQCDd

Follow @CRAWomen to find out about upcoming events or programs