



Systems Engineering Research Center (SERC)

SERC Doctoral Fellows Program Overview

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SERC Doctoral Fellows Program

Objective: Encourage doctoral level studies by US citizens involved with R&D in the US National Security Enterprise

Open to any US-Based Industrial Partner, Warfare Centers, FFRDCs, and National Labs

First Commercial Organization: Boeing;

First FFRDC: Mitre;

First Warfare Center: ARDEC-Picatunny Arsenal



The Doctoral Fellows Program: Primary Tenets

- No exchange of funds from the partners to the SERC in support of this program
- Industry/National Lab/FFRDC/Warfare and R&D Centers engage by sponsoring employees for doctoral studies
 - Minimum number of students sponsored is a function of organization size
 - Example: Boeing sponsors a minimum of 5 doctoral students annually, whereas MITRE sponsors 1 doctoral student annually
- **From the partner's perspective**
 - Identify high potential employees worthy of doctoral studies
 - Sponsorship refers to tuition reimbursement, plus a minimum of 20% release time (1 day/week) to pursue studies
 - Identify and intend to sponsor the minimum number of participants pursuant to the partnership agreement
 - Executive sponsor from the partner (SES, VP) will be regularly invited as a guest of the SERC Advisory Board
 - Two or three meetings held annually in Washington, DC



- **From the participant's perspective:**
 - SERC will provide a portal to support the review and analysis of options for doctoral studies
 - It is participant's responsibility to apply and proceed with the admissions process at the selected university
 - Once admitted, the participant must comply with the host university's doctoral studies requirements and expectations
 - At least one member of the participant's doctoral committee must have been a SERC project PI or co-PI
 - At least one member of the participant's doctoral committee must be from a SERC collaborator university other than the host university
 - The participants will have an explicit association with the SERC (example: SERC Boeing Fellow) and will become part of the systems research community engaged with the SERC



The Doctoral Fellows Program: Intellectual Property

- Universal across most of the SERC Collaborator Universities:
 - Intellectual property developed by the doctoral student belongs to the doctoral student
 - Intellectual property developed jointly by the doctoral student and primary advisor is owned jointly





The Doctoral Fellows Program: End State

- One of the best technology transfer mechanisms possible – transition SERC research into practice within the Warfare Centers and the supporting defense industry
- An excellent mechanism to encourage and sponsor the very best and most capable engineers (US Citizens) to pursue advanced studies
- A tremendous method to develop a national “network” of systems-related thought leaders for today and the future
 - Strengthens and evolves a strong network of faculty engaged in systems-oriented problems of strategic interest to the nation
- An excellent example of creativity and affordability within a resource constrained environment



The Doctoral Fellows Program: Benefits Summary

Partners	Research Collaborators	Doctoral Fellows
<ul style="list-style-type: none">• Research results more readily adopted by broader community.• Develops collaborative ecosystem of government, academia, and industry that drives the translation of the research into methods, processes, and tools of pragmatic utility.• Specific research initiatives will be accelerated through the participation of doctoral students sponsored by industry, government labs, national labs, and FFRDCs.• Significant enhancement of the systems engineering and systems-oriented workforce within and supporting the Department of Defense.	<ul style="list-style-type: none">• Researchers get valuable insight into current problems in the world of practice and how their research can contribute to addressing these challenges. This insight gives an opportunity to demonstrate the relevance of research and to validate results.• Collaboration researchers have access to an expanded pool of reviewers and contributors to research tasks.• Research will be more rapidly transitioned to practice through the dedicated activities of Doctoral Fellows.	<ul style="list-style-type: none">• Doctoral fellows become part of a dynamic network of thought leaders within the systems discipline.• They have access to leading systems thinkers as research advisors.• They have the benefit of working on research considered relevant and significant by their organization's leadership within the discipline spanning industry, government, and academia.• They have expanded opportunities for professional development, growth, promotion, and continued employment within the systems engineering field.

