

Challenges and Successes in Writing BPC Plans for NSF Proposals

A Panel of Peers Discuss Their Approaches

Wendy DuBow (Moderator)
National Center for Women & IT
University of Colorado - Boulder
Boulder, CO USA
dubow@colorado.edu

Dorian Arnold
Computer Science Department
Emory University
Atlanta, GA USA
dorian.arnold@emory.edu

Brittany Terese Fasy
School of Computing & Dept. of
Mathematical Sciences
Montana State University
Bozeman, MT USA
brittany.fasy@montana.edu

Mariantonieta Gutierrez Soto
School of Engineering Design and
Innovation
The Pennsylvania State University
University Park, PA USA
mvg5899@psu.edu

ABSTRACT

In 2021, National Science Foundation (NSF) Computer and Information Science and Engineering (CISE) directorate implemented a Broadening Participation in Computing (BPC) plan requirement for all medium and larger research proposals in Core, CPS, and SaTC. This panel comprises faculty and administrators from US computing departments who have participated in the writing of Departmental or Project BPC plans, two in response to NSF's encouragement and one prior. Panelists represent a range of institutions as well as departmental awareness of BPC prior to writing their plans. Regardless of where they or their departments lie in the spectrum of knowing about and implementing BPC activities, and regardless of the current demographic makeup of the students in their major, they all encountered challenges as they wrote their plans. They all also experienced successes, not the least of which is that they succeeded in getting a plan written in accordance with the current guidelines. With the support of a moderator, the three panelists will share their experiences developing BPC plans with the audience, offering lessons learned and tips for overcoming common challenges. Audience members will also receive helpful links and handouts to facilitate the writing of their own departmental or project plans.

CCS CONCEPTS

• Social and professional topics • Computing education

KEYWORDS

broadening participation in computing; departmental BPC plan

ACM Reference format:

Wendy DuBow, Dorian Arnold, Britany Therese Fasy, Mariantonieta Gutierrez Soto, 2023. Challenges and Successes in Writing BPC Plans for NSF Proposals: A Panel of Peers Discuss Their Approaches. In *Proceedings of ACM SIGCSE TS (SIGCSE TS '23)*. ACM, Toronto, Canada, 2 pages. <https://doi.org/10.1145/3545947.3569598>

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author.

SIGCSE 2023, March 15–18, 2023, Toronto, ON, Canada

© 2023 Copyright is held by the owner/author(s).

ACM ISBN 978-1-4503-9433-8/23/03.

<https://doi.org/10.1145/3545947.3569598>

1 Summary

This panel has two main goals: The first goal is to explain the support infrastructure that exists for writing Broadening Participation in Computing (BPC) plans. These plans are now a requirement for researchers applying for medium and large National Science Foundation (NSF) Computer and Information Science and Engineering (CISE) grants, including in Core, CPS, and SaTC. The second goal is to share the experiences of computing faculty who have been involved in writing their own departmental and/or project BPC plans and generate discussion helpful to others who will go, or have gone, through the process. The intended audience includes those interested in: (1) submitting a research proposal requiring a BPC plan, (2) helping their own department develop a departmental BPC plan, (3) hearing about how peers were able to shepherd BPC plans through to completion, (4) galvanizing support for BPC within their academic department, as well as (5) anyone who has questions about the BPC plan requirements. Given that many in the SIGCSE community submit research grants and/or are working on BPC in their departments, or in their classrooms and labs, this panel will be informative for SIGCSE attendees.

2 Panel Structure

The panel will include a moderator who will explain the BPC plan support structure funded by NSF, point to online resources that support BPC plans and BPC work in general, and distribute helpful handouts. The moderator will then ask each panelist to answer a question specific to their experience writing a BPC plan. Assuming a 75-minute time slot, the moderator will speak for 7 minutes, and each of three panelists will speak for 10 minutes. The remainder of the time will be devoted to question-and-answer. The Moderator will bring additional questions for panelists based on their experience as a BPC Plan consultant in case the audience runs out of questions. Ideally, all panelists and audience members will be in person; however, should the conference allow it, we will include virtual presenters and/or audience members to accommodate health- or travel-related issues and ensure the widest possible participation.

3 Background

In July 2017, NSF began piloting an effort to encourage potential principal investigators of Computer and Information Science and Engineering research grants to consider how they could contribute to broadening participation in computing. In 2021, this pilot effort became a mandatory submission document with many medium and large CISE research proposals [1]. Since then, many submissions to the NSF CISE program were accompanied by BPC plans, and many departments have been developing their own internal and public-facing departmental BPC plans. While departmental BPC plans are not required by NSF, and as such, are not necessarily submitted with proposals, they can be referenced in the required project BPC plans. And they often help guide and anchor the research teams' BPC efforts throughout the grant, as well as document the department's overall BPC efforts.

The Computing Research Association (CRA), through its Center for Evaluating the Research Pipeline (CERP), has been supporting BPC plan development by offering a website called BPCnet.org [2], which shares resources including writing guides, plan templates, sample departmental plans, plus national and institution-specific statistics. CERP has also offered free plan-writing workshops and one-on-one consulting for those who wish assistance with writing plans. They also provide a plan verification service for departmental plans to ensure consistency and to help educate departments about important components of these plans. As of this writing, there were 120 departmental plans that had been verified since the site's inception.

4 Wendy DuBow (Moderator)

Wendy DuBow is the director of evaluation and a senior research scientist at the National Center for Women & Information Technology (NCWIT) and affiliate faculty member in Women and Gender Studies at the University of Colorado. She conducts mixed methods social science research, evaluates the effectiveness of NCWIT's programs and resources, and has co-developed some of NCWIT's research-based resources related to BPC. She is co-

PI on a grant with CRA to develop BPCnet.org and for the past two years has served as a consultant to those seeking to write departmental and project BPC plans.

5 Dorian Arnold

Dorian Arnold is an associate professor of Computer Science and director of graduate studies for Computer Science and Informatics at Emory University. He was part of the team that wrote his department's BPC departmental plan in the context of a modestly-sized computer science department at a private, liberal arts institution in a major U.S. city with a majority-minority population. He will reflect on that process and also explore what should (but may not) happen after a BPCnet-verified departmental plan is established.

6 Brittany Terese Fasy

Brittany Terese Fasy is an associate professor at Montana State University. She serves on the Gianforte School of Computing's (GSoC) broadening participation in computing committee, a committee that was initially formed to write the departmental BPC plan for BPCnet, before the NSF requirement was in place. GSoC formed in 2016 when the Department of Computer Science became the School of Computing, and now offers BA, BS, MS, and PhD degrees in computer science, and partners with the Department of Mathematical Sciences to offer a BS and MS in data science. Dr. Fasy will briefly describe the challenges they encountered writing a BPC plan for a department with diverse backgrounds and needs, and the updates they made to their BPC plan in order for it to align with the new NSF guidelines.

7 Mariantonieta Gutierrez Soto

Mariantonieta Gutierrez Soto is an assistant professor in Engineering Design at the School of Engineering Design and Innovation and faculty affiliate in the Department of Architectural Engineering at Penn State University. She submitted a research proposal to the CPS program in March 2022. The research proposal was a collaborative project between three institutions, so the three-page BPC Project plan submitted with the grant proposal needed to include BPC plan components for all three different institutions. Gutierrez Soto's department did not have a departmental BPC plan in place at the time. She will discuss how she and her co-PIs co-developed a project plan, and how she used what she knew of her department's BPC activities in drafting Penn State University's portion of the project plan.

ACKNOWLEDGMENTS

This work is supported in part by the National Science Foundation under CISE CNS grants 1747533 and 1840644.

REFERENCES

- [1] <https://www.nsf.gov/cise/bpc/>
- [2] <http://www.bpcnet.org>