

Faculty perspectives on frameworks of responsibility in their disciplines

Jonathan Beever
Department of Philosophy
University of Central Florida
Orlando, FL
jonathan.beever@ucf.edu

Stephen Kuebler
Departments of Chemistry,
Optics
University of Central Florida
Orlando, FL
stephen.kuebler@ucf.edu

Laurie A. Pinkert
Department of Writing and
Rhetoric
University of Central Florida
Orlando, FL
laurie.pinkert@ucf.edu

Lakelyn E. Taylor
Nicholson School of
Communication
University of Central Florida
Orlando, FL
lakelyn.taylor@ucf.edu

Abstract—This presentation reports on four interviews with faculty leaders across STEM disciplines at a single institution of higher education. The interviews evidence important overlap and divergence in the perceptions of the roles that disciplinary frameworks play in STEM enculturation. Further, they suggest variance in the perceived nature and scope of ethics across disciplines. The presentation argues that this divergence has implications for institutional cultures of ethics, notions of professional responsibility, and participation in team-based science.

Keywords—*frameworks, leadership, ethics, responsibility, disciplinary enculturation*

I. TOPIC

As part of an NSF-funded institutional transformation project, our research team seeks to answer the question: from where do views about professional responsibility come? Toward this end, our research team conducted interviews with academic disciplinary leaders about the frameworks of ethics in their home departments, programs, and fields. This presentation reports on a subset of those interviews, describing the perspectives of four academic leaders' in the STEM disciplines of chemistry, computer science, optics, and mechanical and aerospace engineering. Their perspectives on ethics frameworks can help us better understand where, how, and to what extent ethics is taught across an institution and, in turn, to recognize the ways developing professionals are enculturated toward responsibility within their discipline.

II. PURPOSE

Previous literature has examined corporate and academic leaders' perspectives of institutional ethics terms, examining to what extent and how practitioners understand concepts like ethics, compliance, and corporate social responsibility [1][2][3][4][5][6]. This research evidenced the wide range of meanings of ethics concepts and the need for further study. Other broader meta-analyses draw attention to the landscape of ethical approaches in engineering but without sufficient institutional granularity [7][8]. In response, we examine academic disciplinary leaders' perspectives on the *frameworks* of ethics. In this work, *frameworks* is defined as the explicit content and structured experiences that shape professional development and disciplinary enculturation even before

students become practitioners. Mapping existing frameworks across engineering and STEM disciplines is not only important for understanding the influences on individual's notions of professional responsibility but also for building stronger foundations for interdisciplinary work. Team-science research has highlighted the extent to which "members may differ in their values and motivations, shaped by their unique areas of expertise, organizational contexts, or life experiences" [9].

III. ARGUMENT

We argue that variance in the integration of frameworks across disciplines reveals an uneasy tension between individual responsibility and institutional commitment to enculturation practices. Making that tension explicit and identifiable defines the institution's culture of ethics. The interviews provide a way to describe the variation in: 1) the types of frameworks that disciplinary leaders identify as relevant to pre-professional enculturation, 2) the methods for introducing students to these frameworks, and 3) the aspects of ethics that are most significant in curricula. Additionally, the study posits the ways that professionals may encounter unexpected challenges in collaboration or team-based work not only because they have experienced different professional norms within their fields but also because they have enculturated to these professional norms differently.

IV. ALIGNMENT WITH THEME

Understanding the landscape of frameworks can help identify and define the broader landscape of ethics at a particular institution, and it supports interdisciplinary collaborative science. Both collaborative research and institutional profiles are key markers of efforts to cultivate engineering and corporate social responsibility, a key conference theme.

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