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# Learning from Team and Group Diversity: Nurturing and Benefiting from our Heterogeneity

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## Abstract

By 2019, diversity is an established fact in most workplaces, teams, and work-groups, presenting both old and new challenges to CSCW in terms of team structure and technological

supports for increasingly diverse teams. The research literature on diversity and teams has examined many definitions and attributes of diversity, and has described different types of teams, tasks, and measures, with contrasting and even contradictory results. Diversity becomes a strength in some studies, and a burden in others. The literature is similarly complex regarding individual and organizational approaches to realize those strengths, or to mitigate those burdens. In this workshop, we collectively take stock of these complex findings; we consider the several theoretical and methodological efforts to organize these findings; and we propose new research directions to address the “diversity of diversity studies.”

## Author Keywords

Diversity; Inclusion; Teams; Team/group diversity; Work-groups.

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## Draft Workshop Agenda

*Welcome and Introductions.* Who are we? How can we help each other?

*Diversity Attributes.* What human and contextual aspects have we studied in relation to diversity? Who is left out? How can we include them?

*Measuring Diversity.* What tasks, artifacts, surveys, etc. have we used to study diversity? What are we missing?

*Theorizing Diversity and Difference.* How have we made sense of the complex patterns and outcomes in diversity studies?

*Notes:*  
Timing of each topic will depend on position papers.

We will work in plenary or small groups, depending on convergence or divergence of participants' interests.

**Table 1.** Draft workshop agenda.

## ACM Classification Keywords

H.5.3 Group and organizational interfaces: CSCW.

### Introduction

Teams have become increasingly diverse over time [22, 24]. This diversity offers both opportunities and challenges to CSCW. The research literature about the diversity of teams and work-groups is complex, leaving many questions unresolved. Scholars in HCI and CSCW have examined the factors that can strengthen diverse teams [4, 6, 10, 11, 12, 19, 26, 37, 39, 41, 43, 50, 51] – often with contrasting “lessons learned.” This workshop brings CSCW and CHI people together to assess the current state-of-the-research, and to propose ways forward.

### Background

*Supporting Diversity among Teams and Workgroups* Hui and Farnham advocated designing for gender inclusion [24]. Robert and You discussed mitigations for perceived interpersonal differences across distances through communication technologies [41], within the context of the research tradition that has followed the landmark “distance matters” paper of Olson and Olson [33]. Oliveira and colleagues [31] compared cross-national engagement in an open online collaboration site and identified barriers for non-Western Stack Overflow participants to contribute and feel part of the Stack Overflow community.

Less than two months before the submission of this workshop proposal, Scheuerman et al. published a set of proposed HCI Guidelines for gender equity and inclusivity [44].

### *Why Should Diversity be Influential?*

Diversity has been hypothesized to have both beneficial and harmful effects on team processes and outcomes.

### *Diversity Considered Beneficial*

Advocates of the beneficial effects of diversity see value in the combination of diverse ideas, sometimes strategically managed as a source of tension and resolution [39]. Jackson and Joshi, and Watson et al., note the importance of having more ideas to combine [25, 52] - especially across institutions [22]. As Lorde noted [30], discussions, disagreements, and resolutions may be particularly valuable [2, 27].

### *Diversity Considered Harmful*

However, diversity has also been conceived as divisive and problematic. If there are too many dissimilar people on a team, they may have trouble to achieve common ground [9, 46, 47], shared vocabulary [5], or reduction in problems in communication, coordination, and conflict management [19, 20, 21].

Teams with very dissimilar member may encounter “faultlines” [20, 36] - i.e., divisive subgroups that engage in stereotyping and cliquishness [50], leading to confusion, stress, and conflict [23, 50]. These processes have been hypothesized to depend on the operation of social identity or self-categorization [2, 13, 28, 40, 45] - i.e., the occurrence of homophily among micro-ingroups within a team.

We have, then, two contrasting sets of predictions and explanations. What has the research literature found?

### *Temporal Aspects of Team Diversity*

These positive and negative influences may also depend on the point-in-time of a longitudinal team process, resulting from greater mutual knowledge among team members [18, 52], changes in knowledge-transfer relations among novices and experts [54], or enhanced cultural adaptations [9, 14] over time.

### *Diversity Measures and Outcomes*

Among multiple complicating factors, the research literature has examined the positive and negative contributions of team diversity to documents [49] and to many other forms of collective production, including WikiProject Film community articles [37], team performance in a large-scale online game [7] or decision-making [42], laboratory tasks of map-navigation [12], laboratory studies of brainstorming [51], team performance [41, 50], individual performance in a team setting [15], self-reports via surveys [10], and senior-executive ratings [10]. Some of these tasks were consequential for participants - e.g., [20, 21, 22, 41, 49, 50], while other tasks were laboratory exercises for people who had no stake in the outcomes [12, 51]. Some of the activities produced tangible outcomes [37, 41, 49, 50, 51], but other tasks led primarily to measurements rather than to outputs [10, 12, 15].

In addition to the relatively concrete outcomes reported above, other papers have reported more social and perspectival factors, such as trust [15], cultural surprise [1], cohesion, attribution [1], collaboration readiness [4], team identification [41], social identity [13], sense of inclusion [24], and the perception of diversity [15, 41].

Finally, the metric for assessing diversity are not a settled matter. Wilcox proposed diverse metrics for both nominal (qualitative) diversity and quantitative diversity [53]. Harrison and Klein updated and extended this treatment [17]. Muller et al. recently proposed theory-based sub-metrics for nominal diversity [31].

### **Workshop Intentions**

In view of these ranges of paradigms, outcomes, measurements, and settings, we should perhaps not be surprised to find reports of both positive [19, 16, 26, 35, 38] and negative [6, 29, 34, 48] contributions of diversity across wide ranges of outcomes, contexts, and measurements [23]. By working together, we may find that there are distinct patterns among the effects of diversity, and that some of those patterns depend on task, participants' stakes in the outcomes, and methods of measurement.

To do this, we will solicit position papers from CSCW researchers and from people outside of CSCW. Position papers may address methods, findings, or theories related to diversity and diversity studies. While we have sketched a workshop agenda in Table 1, we will re-shape that agenda based on participants' interests, and upon our sense of how to organize a review of diversity studies. We anticipate that our ideas for this organization will change in response to the position papers. We will be particularly interested to help the members of the workshop to find new challenges and new collaborators.

### **Workshop Goal**

In collaboration with interested members of the workshop, we hope to write a review paper that

describes the current state of diversity studies, and that proposes new challenges or problems to be solved. We hope to publish the review paper in a future CSCW, or TOCHI or the Journal of CSCW.

### **Operational Details**

We will publicize the workshop through email distribution lists, meta pages, and other personal networks.

We will set up a workshop website.

We will circulate position papers to workshop members in advance. Our intention is not to present a series of position papers, but rather to build new understandings and propose new research topics.

The workshop is one full day.

### **Organizers**

**Susan R. Fussell** is professor and director of graduate studies in Communications at Cornell University. Her research focuses on interpersonal communication in face-to-face and computer-mediated contexts, including intercultural computer-mediated communication and multi-lingual communication.

**Ge Gao** is an Assistant Professor in the College of Information Studies (iSchool) at the University of Maryland, College Park. She conducts research that examines the joint effects of technology use and diversity on global teamwork.

**Pamela J. Hinds** is Professor and Director of the Center on Work, Technology, and Organization in the

Department of Management Science and Engineering, Stanford University. She studies the interplay between technology and collaboration, especially on teams. Pamela has conducted extensive research on the dynamics of geographically distributed work teams, particularly those spanning national boundaries, and more generally on cross-boundary teams.

**Michael Muller** works as a research staff member at IBM Research. His work addresses collaboration and collaborative systems, diversity among paper co-authors, human-centered data science, and social justice.

**Nigini Oliveira** is an HCI researcher with interest in studying, designing, and building social computing systems for cultural diversities. He is now a Postdoctoral fellow at the Paul G. Allen School for Computer Science and Engineering at the University of Washington.

**Katharina Reinecke** is an assistant professor at the Paul G. Allen School of Computer Science & Engineering at the University of Washington, where she researches diversity barriers in technology, often using large-scale online experiments.

**Lionel Robert Jr** works as an associate professor at the School of Information (UMSI) at the University of Michigan. His work addresses online collaborations and human interactions with autonomous systems.

**Pao Siangliulue** develops and studies creativity support tools. She works at B12 where she leads an engineering team that builds tools to support collaboration in creative teams.

**Volker Wulf** is professor of Information Systems and director of Media Resource Institute at University of Siegen. His research includes IT system design in real-world contexts, including cooperative systems and community-based support, often in an inter-cultural setting, with emphases on diversity and genders.

**Chien-Wen Yuan** is an assistant professor at the Graduate Institute of Library and Information Studies, NTNU in Taiwan. Her work revolves around computer-mediated communication and group collaboration for social connection and knowledge transfer.

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