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# The Transdisciplinary Reach of Design Science Research

17th International Conference on Design Science Research  
in Information Systems and Technology, DESRIST 2022  
St Petersburg, FL, USA, June 1–3, 2022  
Proceedings

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# Preface

This volume of Springer LNCS (LNCS 13229) contains the revised accepted research papers of DESRIST 2022, the 17th International Conference on Design Science Research in Information Systems and Technology.

We were excited to return to a fully in-person conference after several years of virtual and hybrid conferences. Face-to-face research collaborations and networking with valued colleagues provide essential experiences to enable innovative research progress. The conference was held during June 1–3, 2022, at the gorgeous University of South Florida (USF) St. Petersburg campus. The urban campus combines natural beauty with the appeal of city life. Dubbed “The Sunshine City”, St. Petersburg, Florida, is home to some of the country’s best beaches and a highly rated quality of life.

The important theme of DESRIST 2022 was “The Transdisciplinary Reach of Design Science Research”. Today’s world faces many complex challenges (i.e., wicked problems) that offer no easy solutions. Inter-related economic, environmental, social, political, and ethical drivers emphasize the need for a changing research landscape quite different from the disciplinary framing found in current institutional structures and processes. The sundering of disciplinary walls has been widely advocated but rarely achieved in the academic research communities. We seek a new frame of transdisciplinary (TD) research that transcends disciplinary, interdisciplinary, multi-disciplinary, and cross-disciplinary models to truly synthesize research disciplines in search of innovative solutions. At the core of transdisciplinary research there are three key characteristics that stand out in all working descriptions:

- Problem Focus: TD research starts with a real-world wicked problem that impacts real people. This presents a major challenge to capture and represent the complexities of the problem space in order to support both relevant and rigorous solutions. A single discipline does not own the problem.
- Emergent Research Methods: The goals of TD research call for the construction of novel research methods or the novel combination of disciplinary research methods as a process of emergence during investigation of the research problem. An iterative and incremental TD research process supports the selection and fusion of the most appropriate research methods as the research evolves.
- Collaboration: The richness of TD research requires active participation from the full variety of problem stakeholders (researchers, practitioners, clients, managers, and community members) who are impacted by the designed solution. Knowledge, wisdom, and creativity are maximized via a collaborative process in pursuit of balanced and satisfactory solutions.

The appropriateness of Design Science Research (DSR) to serve as an epistemological and methodological foundation for transdisciplinary research can be seen by matching the concepts, methods, and processes of DSR and Action Design Research (ADR) to the key TD characteristics above. The unique mix of creative design to solve

relevant problems and rigorous science to grow theory around the intervention and use of the novel solutions provide a compelling frame for transdisciplinary research projects.

The theme of DESRIST 2022 was selected to challenge the DSR community of researchers from many diverse disciplines to engage in more relevant and rigorous transdisciplinary projects. The conference research tracks aimed to move beyond traditional disciplinary siloes. Research papers, panels, workshops, and prototypes in the program demonstrated the transdisciplinary characteristics of problem focus, emergent research methods, and rich collaborations of stakeholders for the solution of complex and wicked problems. DESRIST 2022 provided convincing evidence that DSR makes a difference.

The DESRIST 2022 proceedings contains 37 full research papers organized in ten research tracks. In addition, 15 research-in-progress papers were presented and 10 prototypes were demonstrated at the conference. With slightly more than 100 papers submitted, the acceptance rate for full research papers was less than 37%, and the overall acceptance rate was approximately 50%. The review process was rigorous with every paper receiving at least three substantive reviews from an international Program Committee. A distinguished group of Research Track Chairs managed the review process and supported the author teams to revise their papers to the quality results seen in this proceedings. We send our deepest gratitude to these outstanding Track Chairs and Program Committee reviewers for their hard work and dedication on very aggressive time schedules. Thank you to the authors of all the submitted papers for sharing their exciting Design Science Research projects. We hope the opportunity to participate in DESRIST 2022 will provide a lasting impact on the quality and productivity of your future research.

Thank you to three prominent keynote speakers who addressed the conference with insightful research perspectives. Agnis Stibe, Ben Shneiderman, and Peter Warren Singer challenged the DESRIST community to engage important real-world problems with pragmatic and actionable design innovations. The conference participants also delighted in hearing presentations from the CEO of the Florida Orchestra, Mark Cantrell, and the Co-Director of Innovation Labs at the Salvador Dali Museum in St. Petersburg, Kim Macuare.

We must also acknowledge the enthusiasm and outstanding contributions of the local organizers of DESRIST 2022. The administration, faculty, and staff of the University of South Florida supported the planning, funding, and execution of the conference with their generosity and energy. The warmth and hospitality of the setting provided a rich research environment for the growth of design solutions for transdisciplinary real world problems. Thank you to everyone who contributed to the success of DESRIST 2022.

June 2022

Alan Hevner  
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