2025 IEEE/ACM TCF Information Technology Professional Conference (TCF-ITPC)

Program Book

Date: Saturday, March 29, 2025
Time: 10:00am to 2:30pm
Location: Education Building at TCNJ

In conjunction with the Trenton Computer Festival

Sponsors:
Princeton / Central Jersey Chapter of IEEE Computer Society
Princeton Chapter of Association for Computing Machinery
Princeton / Central Jersey Section of IEEE

Conference Committee

Conference Chair: **Dennis Mancl**
Program Chairs (honorary): **Annette Taylor** and **David Soll**
Princeton Chapter of ACM Chair: **Dennis Mancl**
IEEE PCJS Computer Society Chapter Chair: **Kaustav Ghosal**
Princeton / Central Jersey Section IEEE Chair: **Shubha Bommalingaiahnapallya**
TCF Chair: **Larry Pearlstein**
Thank you to our Sponsors, Speakers, Volunteers and Participants
Also, thank you to the **Trenton Computer Festival** and **The College of New Jersey**

Conference Logistics

Dear Participants,

Welcome to the 2025 19th Annual IEEE/ACM Information Technology Professional Conference at TCF! We have an exciting program this year and are looking forward to seeing you.

Schedule:

The ITPC Conference program schedule may be found in this program book and posted on our website.

Our conference presentations are scheduled to begin at 10:15 AM and conclude by 2:30 PM on Saturday, March 29, 2029. All talks will be in the Education Building at The College of New Jersey.

Tickets, Registration, and Check-In:

ITPC is being run this year in conjunction with TCF 2025 – ITPC talks will be part of the Saturday TCF program. If you register for TCF, you can attend TCF and ITPC talks all day.

Tickets may be purchased online in advance on Eventbrite – the ticket cost is $20:
https://www.eventbrite.com/e/tcf2025-tickets-1041863209907

Registration and check-in will be handled by the Trenton Computer Festival

ITPC Tracks:

- ITPC Track 1 – User Experience and Design
- ITPC Track 2 – Applications Development

Trenton Computer Festival (TCF): https://tcf-nj.org

The 48th Annual Trenton Computer Festival will also be an in-person event scheduled for Saturday, March 29, 2025 between 9:00am and 5:00pm. This year's TCF theme is "Fun With Technology."

The TCF program includes over 35 panel sessions, workshops, tutorials, demonstrations, and educational events. For more information, please visit the TCF website: https://tcf-nj.org.

TCF Keynote:

The TCF keynote speaker (at 3:40pm) will be Dale Dougherty, founder of Make: magazine, and the Maker Faires.

There will also be a plenary session talk (at 2:35pm) – "A Glimpse into the World of Immersive Technology at Otherworld" by Matthew Schenck and David Skovron from Otherworld Philadelphia.

Posted Presentations:

If speakers have provided a PDF copy of their slides, the slides may be posted on the TCF ITPC website, https://princetonacm.acm.org/tcfpro.

Thank you for your participation,

Dennis Mancl
Conference Chair
IEEE Information Technology Professional Conference

Program Schedule

Time (EDT)	Track 1 User Experience *Room TBA*	Track 2 Application Development *Room TBA*
10:15 am	UX of Politics and the Politics of UX *Becky Reid*	Using SysML to Model a Hospital Blood Analyzer *Brian Berenbach*
11:20 am	UX Strategic Leadership in a Post-AI VUCA World *Josephine Giaimo*	Working With Legacy Software *Dennis Mancl*
12:25 pm	Data Privacy in Education *Vivian Xiaotian Li*	Spreadsheets as a Wide-Spectrum Computing Environment *Enzo Alda and Daniel Andres Pinto Alvarado*
1:30 pm	Anticipatory Design *Sarah Doody*	Restructuring a Website *Ben Swofford*

UX of Politics and the Politics of UX: New Jersey's County Line Ballot Design Lawsuit by Becky Reid

Track 1 – 10:15 - 11:10am

Becky Reid will walk you through the recent (and still developing!) history of primary ballot design in New Jersey, centering on Andy Kim's 2024 lawsuit to eliminate the "county line" grid based layout. Drawing on work from the Center for Civic Design, we will examine how politics shape the user experience, how the user experience for voters can shape political outcomes in turn, and how we as UX professionals and civic-minded citizens can get involved.

About Becky Reid:

Becky Reid is a musician and UX designer working with performing arts groups and businesses to better serve and connect with their audiences. With a Master's in Music from NYU in percussion performance, she continues to perform and teach throughout the tristate area. Becky has also worked for the Burlington County Board of Elections as a poll worker since 2020, leveraging her UX experience to assist her peers and the voting public as voting technology and our election process continues to evolve.

Using SysML to model a hospital blood analyzer
by Brian Berenbach
Track 2 – 10:15 - 11:10am

Many software engineers have some understanding of SysML, using it to make sketches of system software. In this talk, Brian will walk the audience from requirements, through design using SysML as the diagram repository. There will be illustrations of diagrams showing requirements, analysis and the design of a high capacity (thousands of samples per hour). Brian will also show a short video of the actual analyzer in operation.

About Brian Berenbach:

Thomas Wilson is an award-winning UX, Service Designer, Product Designer, and Design Director.

Brian has been teaching both undergraduate and graduate courses in computer science and systems engineering since 1980. He recently retired from lecturing at Georgia Tech, where he taught graduate courses in the systems engineering program.

Brian previously was a senior systems engineer at first ABB and then Siemens, where he designed systems for modeling the behavior of nuclear power plants and medical systems. While working at Siemens he received 5 patents, and he wrote a book on requirements engineering.

He has graduate degrees in chemical physics and nuclear engineering, and has been given the ACM Distinguished Engineer Award, and the INCOSE Expert Systems Engineer certification. Brian is also an IEEE senior life member.

UX Strategic Leadership in a Post-AI VUCA World
by Josephine Giaimo
Track 1 – 11:20am - 12:15pm

Complexity isn't just complicated, it's actually complex. The old-school command-and-control style of leadership is no match for our volatile times, increasing uncertainty, increasing complexity, and high levels of ambiguity. Do you have the skills to lead through complexity? Learn how to use all the resources at your disposal to lead your project team through uncertainty and complexity to success, using proven methods. You will learn how to make the most of differences of opinion, making them work to drive discussions towards resolution in a supportive, nonjudgmental fashion. Learn how much time successful teams spend on developing a shared understanding. Learn about the many valuable strategies and resources on leading through complexity that are available to leaders in 2025 and beyond. Understand the mess that generative AI is creating, and how the future provides opportunities for UX professionals to be uniquely qualified to lead the clean-up. Bring your burning questions, examples of thorny, wicked problems that you currently are facing, and seemingly intractable situations for a lively discussion.

About Josephine Giaimo:

Josephine M. Giaimo has been working as a UX leader, strategist, and researcher since the 1980s. Her original research in non-generative AI proposed a framework for evaluating the performance of neural networks and statistical approaches in predicting project profits. Her research at NJIT was funded by IBM, the Office of Naval Research, the State of New Jersey, and the Annenberg Foundation. She is Founder of User Experience Research, LLC and a team lead of the New Jersey chapter of the User Experience Professionals Association. She holds a Bachelor of Arts degree in psychology from Montclair State University, and a Master of Science degree in Industrial Engineering, specializing in Human-Computer Interaction, from the New Jersey Institute of Technology. She has consulted for AT&T, ADP, Google, Medidata, Sarnoff Corporation, and others. In 2025, she completed the Henosis Partners certification program, "Leading through Complexity."

Spreadsheets as a Wide-Spectrum Computing Environment
by Enzo Alda and Daniel Andres Pinto Alvarado
Track 2 – 11:20am - 12:15pm

VisiCalc was released on October 17, 1979, and instantly became the killer app that ignited the personal computing revolution. 45 years later, spreadsheets are still the most popular computing tool in the world, yet practitioners don't think of themselves as a doing "programming work". Computer science researchers, however, have long recognized spreadsheet modeling as a form of programming. Our talk illustrates the virtues of spreadsheet computing along with some unfortunate choices made at the inception and during the evolution of that paradigm. We show how a relatively minor extension to Christopher Strachey's traditional model of computation replicates the behavior of spreadsheets and paves the way to extend their expressiveness. The result is a computing environment amenable to a wide-spectrum of users, from K-12 students to spreadsheet practitioners and software engineers.

About Enzo Alda:

Enzo Alda is the founder of Lakebolt Research, a firm focused on end-user computing. Formerly, he held roles at technology startups and large organizations like Oracle, Bloomberg, and Google. Before coming to the U.S., Mr. Alda lectured courses in compiler construction and programming language design. He holds degrees in Software Engineering, Computer Science, and an MBA. Mr. Alda joined the IEEE in 1999 and the ACM in 2013.

About Daniel Andres Pinto Alvarado:

Daniel Andres Pinto Alvarado is a software engineering student at Universidad Simón Bolívar. His areas of research are functional programming, domain-specific languages, and type-driven software development. As an expert in Haskell with experience in Web Assembly, he leads the implementation of ZenSheet in the browser.

Teaching User-Centered Design to People Who Aren't Interested
by Vivian Xiaotian Li
Track 1 – 12:25 - 1:20pm

As education technology becomes increasingly integrated into daily teaching and learning, concerns about data privacy are rising. The rapid development and adoption of AI in educational tools further amplify these challenges, making it essential for institutions, educators, and students to stay informed and proactive about data privacy. In this session, I will discuss the current landscape of data privacy in education, highlight key areas of privacy risks that educators and UX practitioners should address, and explore practical solutions for preserving privacy in EdTech. Join me to uncover actionable strategies for building trust and safeguarding data in the evolving educational ecosystem.

About Vivian Xiaotian Li:

Vivian Xiaotian Li is a PhD candidate in Human-Computer Interaction at Penn State, specializing in EdTech with a focus on creating inclusive and efficient digital environments. Her research explores critical areas such as data privacy and tools for educators, and her work has been published in major technology conferences. With a strong foundation in both Computer Science and Education, Vivian is now seeking opportunities in the industry as a UX researcher to apply her expertise in designing impactful, user-centered solutions.

Working With Legacy Software
by Dennis Mancl
Track 2 – 12:25 - 1:20pm

Most software developers spend a lot of time on bug fixes, modifications, and extensions of existing software systems. “Green-field” software development is one thing, working with existing legacy software is another. Professional programmers develop a number of useful strategies to build applications based on existing code: leveraging legacy software. This talk will outline some key practices in code reading, encapsulation, porting, and refactoring to extend old applications code.

About Dennis Mancl:

Dennis Mancl is a New Jersey-based software process and software design expert. He worked for many years at AT&T, Lucent, and Alcatel-Lucent, where he was involved in object oriented designs, design patterns, software architecture, and agile development practices for over 20 years. Dennis has M.S. and Ph.D. degrees in computer science from University of Illinois.

Digital Signatures Decoded: Crafting an In-House e-Signing Microservice
by Sarah Doody
Track 1 – 1:30 - 2:25pm

As technology becomes more innovative, companies want to save money, and managers want to maximize output and value of their teams, what is the impact of automation and anticipatory design?

As designers and technologies, what is the ethical line of making decisions on behalf of the people who use our products? As a society, what happens if more of our roles are automated? And what is the impact of AI on trust that users and consumers have for products and brands?

This talk explores four cautions and four design principles to consider as automation inserts itself into the products we create and use.

About Sarah Doody:

Sarah Doody is the Founder & CEO of Career Strategy Lab, job search accelerator that helps UX and product professionals position themselves for 5-figure salary increases without applying to hundreds of jobs. People who've worked with Sarah have landed jobs at Amazon, Apple Blue Origin, Home Depot, IBM, Microsoft, Salesforce, Wells Fargo, and more. On average, they increase their salaries by 40%. Sarah is also the host of the Career Strategy Podcast.

She is also a User Experience Researcher & Designer. Having worked in the UX industry for more than 18 years, she began her career by working at large corporations and startups before launching her own product design consultancy in 2012. For more information on Sarah please visit https://www.careerstrategylab.com or https://www.sarahdoody.com.

Information Architecture Case Study: The UX & SEO Informed Restructuring of the Living Beyond Breast Cancer Website

by Ben Swofford

Track 2 – 1:30 - 2:25pm

This talk will explore a website design story. A nonprofit group, Living Beyond Breast Cancer (LBBC) [a locally-headquartered, national nonprofit offering trusted information and community support], redesigned its complex website to better serve users while maintaining crucial SEO (Search Engine Optimization) traffic. This case study will explain how strategic brand and UX considerations can motivate a unique approach to menus and user flow. The redesign was able to boost KPIs without sacrificing brand messaging. The talk will also briefly explore the technical side of a seamless SEO transition. It is especially useful for anyone tasked with reshaping a content-heavy site, and you will walk away with practical takeaways and ideas to implement in your own work.

About Ben Swofford:

Ben Swofford is a UX & Product Strategist at FourFront, where he has 8 years of experience spanning digital strategy and innovation. In addition to working with clients of regional, national, and international scope, he is also an Adjunct Professor teaching UX and Innovation fundamentals to graduate students at Jefferson University. He previously served on the board of PhillyCHI, a local UX community group, and believes that authentic, non-transactional networking can be a beautiful thing! Ben holds an M.S. in User Experience & Interaction Design from Jefferson University, and a B.A. in Architecture from Miami University (OH).