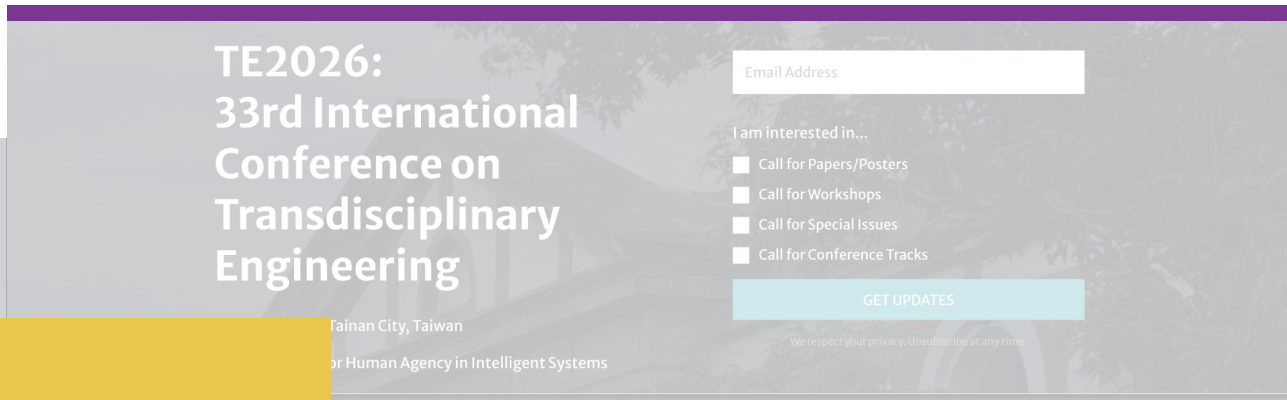
ISTE International Society of Transdisciplinary Engineering

Issue no: 202509

NEWSLETTER

FRIDAY
25/09/2025



Spotlights

- Looking back at ISTE through the years, and appreciation for the ISTE members who recently completed their terms.
- Invited papers from TE2023 published in the International Journal of Agile Systems and Management.
- Welcome to our revamped newsletter!

Read more on the Spotlights page

Coming up Next

Join us at TE2026!
New conference alert:
The 35th Congress of the International Council of the Aeronautical Sciences (ICAS 2026)

Check out the details on the Coming up Next page.

Welcome to our new members! Since the last newsletter we have grown from 263 to 277 members (22 Sep 2025). ISTE LinkedIn Group members have increased from 166 (22 June 2025), to 175 members (22 Sep 2025).
Please continue to promote the Society through your networks and if you see any opportunities for us to reach new audiences, please let us know.
Check out the member profiles on New Members page.

Fresh off the Press

International Journal of Agile Systems and Management (IJASM), 2025 Vol. 18 No. 1

Applying generative AI to explore new dimensions of reflection and interaction in agile design workshops

Jo-Yu Kuo; Hao-Yu Chang

Cultivating employee autonomy for agility in the workplace through the lens of Bloom's taxonomy

Duangthida Hussadintorn Na Ayutthaya; Pisut Koomsap; Cathal de Paor

System dynamics simulation for reducing the number of lifestyle-related disease patients and medical costs in Japan by promoting behavioural changes in multiple generations

Shingo Kawai; Masako Toriya; Tetsuya Toma

A flexible and intelligent software tool for process planning and enterprise performance enhancement

Ederson Carvalhar Fernandes; Jaqueline Sebastiany Iaksch; Sandro Jessé Ferreira Tabor; Luiz Gustavo Romanel; Liam Brown; Milton Borsato

A transdisciplinary engineering framework for analysing initial public offerings' financial behaviour

Carlos Mario Aldana; Federico Trigos

Check out more on the Publications page

We want to hear from you!

Share your insights, projects, milestones, or ideas with our global community, including publications, conference reflections, teaching practices, collaborations, or good news worth celebrating.

👉 **Call for Content**

Your voice makes this truly our newsletter, showcasing the vibrant spirit of ISTE. 🌍🤝

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PRESIDENT'S MESSAGE

With thanks to our transformational colleagues

There are many challenges to science and engineering professions in recent years, including the increasing costs of conferences, a flood of questionable papers and journals, the noise of ungoverned social media, and yet increasingly demanding and connected needs in society. Our institutions – from universities to governments to societies such as ours – are yet to catch up.

At the first conference I attended, more than a decade ago, we were still a society of *concurrent engineering*. A tradition, stretching back to 1984, emphasizing the interplay of engineering and manufacturing with respect for know-how and craft embedded in practice. That earlier generation of our society built a community of global friends, diverse disciplines, and open mindedness that bridges the academic-practitioner gap. I recall from my first few conferences the contributions of Cees Bill, Nel Wognum, Ricky Curran, Mike Sobolewski, Any Trappey, Shu Fukuda, amongst others. *Open minded but not like minded* – we heard some terrific debates 😊 Yet it became apparent that the original mission and framing of the society could be improved, especially influenced by those in Europe who had been in debate on the role of transdisciplinarity in science. What to do?

Our institutions – from universities to governments to societies such as ours – are yet to catch up.

Starting with Ricky, Cees, and Nel, the torch was passed to a core group that established the new ISTE, recruited new members, and contributed to the foundational debate on "TE". They not only kept us afloat but built a new boat and cast us in a meaningful new direction. (*With regard to Ricky and Cees at least, perhaps they built us an airplane.*)

I'd like to take this moment to recognize and thank the board members of ISTE who led us recently in that transformation. We have been lucky to have been shepherded over the last decade by a small group of remarkable pioneers. At the time, the academic world was not yet using the transdisciplinary term. Today, in debates in science and engineering education and research, "transdisciplinary" has become a common adjective. (*But not yet a noun. Even today, we must override spell checkers for transdisciplinarity!*)

Our five colleagues served on the board, some of them longer than had been promised, with distinction in a time of change. Each is a beloved contributor to our community's scholarship and debate yet carved out additional time in a governance role. As Fredrik pointed out to me when I started as president last year, the board's job is to handle the boring stuff – the administrative and financial matters that allow the community to exist and thrive. And yet this group did much more, establishing a foundation and new boundaries for ISTE that will last a generation. **On behalf of society, our deepest thanks and appreciation for your services. Congratulations on your return to regular citizenship in our revitalized, growing community! We still surely need your active voice and presence in ISTE.**

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PRESIDENT'S MESSAGE

ISTE Board Members, recently completed terms

Professor Linda Newnes,
University of Bath

The President of ISTE, who prioritized "evolution not revolution", clarified the governing process with stable, regular board meetings and conferences, and brought her research leadership skills to trigger a series of seminal papers on transdisciplinary engineering. Linda navigated the diverse cultures and personalities of our society, herding the cats, and pushing us to move forward.I am deeply thankful for the community and strategy she passed to us this last year.

Dr. Josip Stjepandic,
Prostep AG Darmstadt

Vice President of ISTE, who champions the publications process and quality, ensuring that our long stretch of indexed proceedings and pathways to journals continue. Given the ISTE transition and turmoil in the publisher's market, his dedication from overall strategy down to proper editorial process and formatting of papers has been critical to increase the number and quality of contributions to ISTE. Josip has also been a strong voice for balancing academic work with industrial contributions, reminding us that often industrial practitioners are leading the way.

Professor Margherita Peruzzini,
University of Bologna

Vice President responsible for Conferences, showed us the way by hosting the remarkable event in Modena in 2018. (How many conference chefs can claim a Michelin star?) Margherita raised the bar for the character of ISTE events and established a common process and standards for ISTE conferences. She is also a strong voice for design and manufacturing, reminding us to retain our roots as we evolve, and the important contribution we can make to engineering education and practice.

Professor Fredrik Elgh,
Jönköping University

Treasurer of ISTE. Fredrik has ensured the integrity of our processes for revenue and spending within the society and as required by the Netherlands where ISTE is chartered. At a difficult time for academic societies and researchers, stretching across the period of the global pandemic, ISTE has been stable and sustainable financially. He has been a regular voice on the board for professional and serious society governance, and for the role of the board to remove administrative barriers so that our society members can thrive.

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PRESIDENT'S MESSAGE

ISTE Board Members, recently completed terms

Dr. Susan Lattanzio,
University of Bath

Vice President of Communications. The list of contributions by Sue is too long for this newsletter and includes this newsletter! Sue put in place processes for membership and the newsletter, while collaborating with Wim on the website content and upkeep. Sue has been instrumental in the series of new projects and paper on transdisciplinary engineering with her colleague Linda Newness, regularly inviting others to join their projects. Above all else, Sue has brought joy and open-minded enthusiasm to each of our global conferences, shaping the culture to allow for genuine transdisciplinarity.

Compliments from
Bryan Moser
President, ISTE

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Invited papers from TE2023 published in the International Journal of Agile Systems and Management

Eight invited papers from TE2023 have been published in the International Journal of Agile Systems and Management (IJASM). The first three appear or are scheduled to appear in a few regular issues. The remaining five are put together in 2025 Vol. 18 No. 1 Special Issue on: Leveraging Transdisciplinary Engineering in a Changing and Connected World. The guest editors are Dr. Pisut Koomsap, Dr. Bryan R. Moser, Prof. Milton Borsato, and Dr. Adam Cooper.

The editorial note is available at https://www.inderscience.com/info/dl.php?filename=2025/ijasm-8553.pdf.

*See **Publications** in this issue for details.*

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MESSAGE FROM

Moving Forward Together

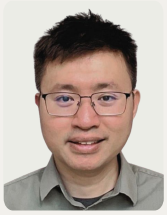
Dear ISTE Community,

It is with gratitude and excitement that I step into the role of the ISTE Board Member for *Communications*. Over the past months, our *Strategic Communications Team* has listened closely to your voices and aspirations for the future of our academic community. Your insights have shaped the direction we now take, and I thank each of you for your contributions and continued support.

I would also like to extend my heartfelt appreciation to my colleagues, Daniel Hussmo (Operational Support), Bruce Hecht (Support Advisor), and Dr. Aprille Chua (Creative Strategist/Editor Designer), whose dedication and tireless efforts have been instrumental in this transition. Together, we have reimagined how to better serve the ISTE community, and today's newsletter revamp marks the first step in strengthening engagement and inspiring deeper collaboration.

Looking ahead, you can expect improvements to the membership process and website experience. As we move forward, I invite you to share your ideas and suggestions with our team. Let us continue to grow, learn, and shape the future of Transdisciplinary Engineering together.

Sincerely,
Dr. Kendrik Lim
Board Member, ISTE
(Communications)



Greetings from the Newsletter Editor

Dear ISTE Members,

There are many reasons to be excited about September. The weather is starting to turn kinder, the busy season of back-to-back conferences, grant-writing, and grading is behind us, and many of us can finally enjoy a little reprieve.

What is even more exciting this month is the launch of our revamped newsletter! While the design is refreshed, we are continuing with the tradition of featuring ISTE members: their profiles, publications, and stories. After all, this newsletter is about you and for you.

The newsletter is very much a collective effort. **The ISTE Communications Team** works diligently behind the scenes: preparing templates, gathering contributions, and shaping the overall look and feel. Their work makes this newsletter possible.

We would love to hear your thoughts about the new format. What would you like to see more, or less, of? This issue highlights publications and event announcements, but we would also be delighted to feature opportunities such as job openings or calls for collaborators. The Communications Team is eager to hear from you.

Warm regards,
Dr. May Kristine Jonson Carlon
Newsletter Editor, ISTE

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PUBLICATIONS

Proposal of an integral model of human-food interaction: insights for social systems design

Ysanne Yeo; Masahiro Niitsuma
DOI: 10.1504/IJASM.2024.140464

Human factors are integrated into a comprehensive system model to better capture behaviour in complex social systems. A model-based approach to human-food interaction shows how behaviour change solutions may reduce interoceptive sensitivity over time. The work cautions against simplistic design assumptions and advocates for more sustainable, human-centred systems.

Keywords: *human behaviour; human intelligence; human-environment interaction; transdisciplinary research; social systems; model-based systems approach; systems theory.*

A novel human-centric framework for maintenance digitisation using augmented reality

Lorenzo Valentini; Fabio Grandi; Margherita Peruzzini; Marcello Pellicciari
DOI: 10.1504/IJASM.2025.145449

Modern machinery poses challenges that often require expert operators, leading to long downtimes and high costs when non-experts need support. Augmented reality, designed through a user experience–based framework, can guide operators to perform maintenance safely and efficiently. Applied in the H2020 XMANAI project, the approach improved usability, reduced errors, and boosted operator skills and productivity.

Keywords: *augmented reality; Operator 4.0; Industry 5.0; user experience design; transdisciplinary engineering.*

Transdisciplinary engineering development and integrated water management: an Australian case example *(in press)*

Ronald Beckett, John Mo
DOI: 10.1504/IJASM.2024.10068677

A longitudinal water industry case study shows how communities of place and practice interact via experiential learning across diverse projects. Using a 3PE architecture model, the study highlights conditions—like strong innovation culture and strategic planning—that support resilience in the water-energy-food nexus.

Keywords: *transdisciplinary engineering; sustainability; complex adaptive systems; socio-technical systems; integrated water management; Water 4.0.*

Applying generative AI to explore new dimensions of reflection and interaction in agile design workshops

Jo-Yu Kuo; Hao-Yu Chang
DOI: 10.1504/IJASM.2025.144170

Generative AI is increasingly shaping design, yet its impact on collaborative processes is less understood. Case studies from three agile design workshops with university students show how AI can enhance both reflection and interaction, enriching teamwork. Beyond output quality, the findings reveal implications for project management and highlight AI's strategic role in design education and practice.

Keywords: *generative AI; agile design workshop; design process; design education; project management; collaborative learning.*

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PUBLICATIONS

Cultivating employee autonomy for agility in the workplace through the lens of Bloom's taxonomy

Duangthida Hussadintorn Na Ayutthaya; Pisut Koomsap; Cathal de Paor
DOI: 10.1504/IJASM.2025.144172

Organisational agility depends on competent employees who can adapt quickly in uncertain environments. This paper introduces an education-inspired model that views employees as learners, assessing knowledge, attitude, and skills to recommend activities that cultivate autonomy. Demonstrated through a design class, the model shifts focus from managing autonomy to actively fostering it for stronger, agile teams.

Keywords: *competence development; agile employee; autonomy; AAPC cycle; bloom's taxonomy.*

System dynamics simulation for reducing the number of lifestyle-related disease patients and medical costs in Japan by promoting behavioural changes in multiple generations

Shingo Kawai; Masako Toriya; Tetsuya Toma
DOI: 10.1504/IJASM.2025.144168

Super-aging societies face rising medical costs from lifestyle-related diseases, which worsen over time without behavioural change. Using a system dynamics model and Japanese data, the study shows that cross-generational behaviour changes can significantly reduce patient numbers and healthcare costs. The model's adaptability suggests it can be applied globally wherever relevant statistical data are available.

Keywords: *system dynamics; lifestyle-related diseases; behavioural change; morbidity rate; agile goal setting; government policymaking.*

A flexible and intelligent software tool for process planning and enterprise performance enhancement

Ederson Carvalhar Fernandes; Jaqueline Sebastiany Iaksch; Sandro Jessé Ferreira Tabor; Luiz Gustavo Romanel; Liam Brown; Milton Borsato | DOI: 10.1504/IJASM.2025.144176

This study presents a dynamic web application that leverages data analysis, machine learning, and Docker-based virtualization to enhance production practices. Tested in a Brazilian agricultural equipment company, it identified multiple engineer-approved improvements, highlighting the potential of digital tools for operational excellence.

Keywords: *production; monitoring; enhancement; VSM; value stream mapping; Docker; web system.*

A transdisciplinary engineering framework for analysing initial public offerings' financial behaviour

Carlos Mario Aldana; Federico Trigos
DOI: 10.1504/IJASM.2025.144166

This study applies engineering control functions and behavioural finance concepts to model IPO stock prices in real time, helping stakeholders anticipate market behaviour. The proposed framework offers a transdisciplinary decision-support tool, demonstrated through analyses of two actual IPOs.

Keywords: *financial market dynamics; behavioural finance; real-time decision-making in finance; knowledge engineering in financial systems; systems thinking; adaptive control in financial markets; transdisciplinary financial analysis.*

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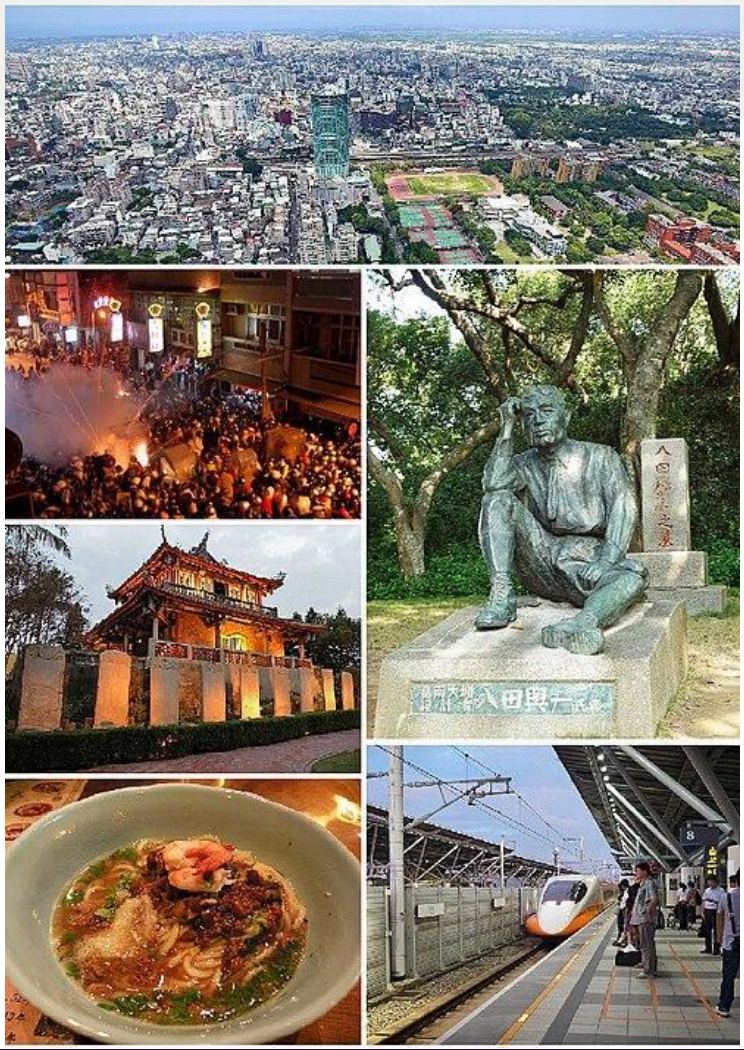
COMING UP NEXT

Join us at TE2026!

National Cheng Kung University (NCKU) will host the 33rd International Conference on Transdisciplinary Engineering (TE2026) in Tainan, Taiwan, from 6-10 July, 2026. This year's theme is: **Design for Human and Intelligent Agency**.

Visit the conference website for more details: te2026.tw

https://commons.wikimedia.org/wiki/File:Tainan_City%27s_cover.jpg



New Conference Alert!

The 35th Congress of the International Council of the Aeronautical Sciences (ICAS 2026)

One of the largest Aeronautical conferences that encourages transdisciplinary research

The 35th Congress of the International Council of the Aeronautical Sciences (ICAS 2026) will be held on 13-18 September 2026 at the International Convention & Exhibition Centre, Sydney, Australia.

The ICAS congress is a biennial event which brings together world's aeronautics experts and the entire international scientific aerospace community to discuss, understand and compare worldwide scientific and technological advances.

The Congress provides the ideal opportunity to move aeronautical research and technology progressively forward, particularly with regards to the environment and sustainable development. Up-to-date scientific achievements in aeronautics and priority projects to design new generation aircraft and engines, constitute essential topics of the Congress and reflect the aspirations of the aeronautical community.

See this link for more details: https://icas2026.com/

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NEW MEMBERS

Michael Scott

Michael Scott is a **PhD Researcher at RMIT University in Melbourne, Australia.** He received BEng (Hons I), BBus and DipLang degrees from RMIT University in 2017, from there he was fortunate to get valuable experience at a major Australian air transport operator supporting engineering maintenance.

In 2021, he commenced a PhD in Aerospace Engineering at RMIT supported by DSTG and CASG to focus on research and development (R&D) of Predictive Maintenance for aircraft sustainment and operations. His research interests include machine learning prognostics, natural language processing and mixed-reality.

Prof. Rafael Batres

I am honored to join the International Society of Transdisciplinary Engineering. Let me introduce myself. I am **Professor from the School of Engineering and Sciences at Tecnologico de Monterrey.** I earned my Ph.D. at the Tokyo Institute of Technology and completed my undergraduate studies at the National University of Mexico.

Over the years, I have had the pleasure of being an associate professor at Toyohashi University of Technology and an assistant professor at Tokyo Institute of Technology.

I also worked as a visiting scientist at Institut Français du Pétrole. My research focuses on computational methodologies such as machine learning, metaheuristic optimization, and ontologies to solve complex engineering problems. My pioneering work in ontologies has greatly improved data interoperability and knowledge management. Also, I have advised companies on strategic planning and AI applications.

Looking forward to connecting with all of you!

Dr. K. Arumuganainar

I have dedicated over two decades to advancing **Mechanical Engineering** through teaching, research, and innovation. My Ph.D. work focused on enhancing the performance of vapor compression refrigeration systems using nano-refrigerants, contributing toward sustainable energy solutions.

I have published extensively in reputed international journals, authored a textbook, and filed three patents, including innovations in energy-efficient refrigeration and electric vehicle braking systems.
In recognition of these contributions, I was honored with the International Luminary Award in Research (2023).

My journey reflects a continuous commitment to blending academic excellence, practical innovation, and student mentorship.

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NEW MEMBERS

Asst. Prof. Giacomo Barbieri

Giacomo Barbieri is an **Assistant Professor in the Asset Management and Maintenance Engineering Chair at the University of Twente (Netherlands).** He earned his bachelor's and master's degrees in Mechanical Engineering (2010 and 2012, respectively) and a Ph.D. in Industrial Innovation Engineering (2016) from the University of Modena and Reggio Emilia (Italy), in collaboration with Tetra Pak SpA.

During his Ph.D. research, he also conducted internships at UC Berkeley (US), the Technical University of Munich (DE), and the University of Exeter (UK), enriching his international perspective on engineering and innovation.

From 2016 to 2023, he served at Universidad de los Andes (Bogotá, Colombia), before moving to the Netherlands in 2024. Giacomo has a background in mechanical engineering and industrial automation, which has progressively shaped his research focus in Asset Management, Smart Maintenance, Cross-Functional Collaboration, and Decision Making.

He thrives in transdisciplinary environments, where he facilitates human-centric and value-based approaches to these technological fields. Currently develops projects with companies in the areas of railway transportation, energy distribution and generation, and infrastructure and water management.

Stay tuned for the next Newsletter!

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