

The Vanishing Point

Where Systems of Caring Emerge

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Environmental Biotechnology

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References

Logan, et al, 1998, Environmental Engineering Research Frontiers: Final Report of the NSF/AEEP Workshop held on January 14-16, 1998, 14 pages

Rittmann, et al, 2006, A Vista for Microbial Ecology and Environmental Biotechnology, <https://doi.org/10.1021/es062631k>

Vaishali and Boopathy, 2024, Edwin Chadwick: A Pioneer of Public Health Reform and His Role in Sanitary Awakening, <https://doi.org/10.7759/cureus.68858>

Humanitarian technology

[To insert]

References

Oerther, 2021, Humanitarian Technologists as Prototypical V-shaped Professionals,
<https://doi.org/10.1109/GHTC53159.2021.9612473>

Oerther and Oerther, 2022, Improving Interprofessional Environmental Health Education
Using the Leave No One Behind Framework, <https://doi.org/10.2105/AJPH.2022.306832>

Oerther et al, 2024, The Urgent Need for Interprofessional Environmental Health Education
to Achieve Universal Health Coverage, Even in Disasters,
<https://doi.org/10.1021/acs.estlett.4c00756>

A parallel story (guest piece)

Engineers Without Borders

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Environmental Engineering 3.0

[To insert]

References

Oerther, et al, 2024, Environmental Engineering 3.0: Faced with Planetary Problems, Solutions Must Scale-up Caring, <https://doi.org/10.1061/JOEEDU.EEENG-7764>

The Nurse+Engineer – where tech meets care

[To insert]

References

Oerther and Glasgow, 2022, The Nurse+Engineer as the Prototype V-shaped Professional,
[https://doi.org/ 10.1016/j.outlook.2021.10.007](https://doi.org/10.1016/j.outlook.2021.10.007)

I was there (eyewitness piece)

[To insert]

Science Diplomacy

[To insert]

References

Oerther, 2020, Using Science in Diplomacy to Develop COAST: The Caribbean Ocean and Aquaculture Sustainability facility, and Reflections on Pandemic Insurance Inspired by COVID-19, <https://www.sciencediplomacy.org/letter-field/2020/using-science-in-diplomacy-develop-coast>

Planetary Health

[To insert]

References

Oerther et al., 2024, Environmental Engineers Solve Problems of Planetary Health,
<https://doi.org/10.1089/ees.2023.0301>

From I- and T- to V-shaped Professionals

[To insert]

References

Oerther and Oerther, 2021, From Interprofessional to Convergence: Nurses Educating V-shaped Professionals, <https://doi.org/10.1016/j.nepr.2021.103047>

Ethical Stewardship

[To insert]

References

Oerther and Oerther, 2026, The Importance of Transparency, Accountability, and Verifiability When Using Artificial Intelligence in Nursing Education,
<https://doi.org/10.1016/j.nepr.2025.104557>

Oerther, et al., 2026, Artificial Intelligence is Not a Calculator: A Sociotechnical Mediator of Knowledge and Action for Engineers, Scientists, and Health Professionals,
<https://doi.org/10.1177/15579018261443025>

Prologue

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Appendices

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