

Call for Papers: Uncovering the Great Indoors: transdisciplinary perspectives on indoor ecosystems and their impacts

Special Issue of the *Human Ecology Review*

Guest Editors: Rachael Wakefield-Rann, Dr Dena Fam

Contact: Rachael.Wakefield-Rann@uts.edu.au

The earth is comprised of multiple biomes; habitats that support particular forms of life and ecosystems. Today, the most rapidly expanding biome on earth is the indoor environment. As cities and buildings have expanded to cover the earth in both horizontal and vertical space, they have created new habitats for different species and ecosystems to thrive.

It has been estimated that people in many industrialised regions of the world now spend up to 90% of their lives indoors. As a consequence, it is imperative that we gain an integrated understanding of the composition of indoor environments, what affects them, and how they affect human and ecological health. Yet, very little is known about the indoor ecosystems that we inhabit. What is known tends to be confined within disciplinary silos, obfuscating the ways that objects, bodies, structures and meanings interact and react to create indoor ecologies.

This lack of integrated knowledge is concerning, as research across disciplines is revealing correlations between components of indoor environments and damage to human and environmental health. For example, recent medical research suggests a strong link between 'farm like' microbial communities in the home and low incidence of childhood allergies.¹ There is also toxicological research demonstrating that chemicals used in building materials and consumer products effect the health of building occupants, and the environments in which the chemicals in products are dispersed and disposed of.² The way these micro-agents cause harm is complex, non-linear and relational. The way that both chemicals and microbes behave depends on the other chemicals and organisms they interact with, and how they travel through space over time.³

This Special Issue offers a unique opportunity, and challenge, to scholars interested in connecting their research to others working to address and improve sub-optimal indoor environments. In an attempt to transcend disciplinary boundaries and draw on what are often disparate areas of research, this special issue invites transdisciplinary perspectives on indoor ecosystems as a complex, 'wicked'⁴ problem.

¹ Azad, M.B., Konya, T., Maughan, H., Guttman, D.S., Field, C.J., Sears, M.R., Becker, A.B., Scott, J.A. & Kozyrskyj, A.L. 2013, 'Infant gut microbiota and the hygiene hypothesis of allergic disease: impact of household pets and siblings on microbiota composition and diversity', *Allergy, Asthma & Clinical Immunology*, vol. 9, no. 1, p. 15.
Williamson, L.L., McKenney, E.A., Holzknecht, Z.E., Belliveau, C., Rawls, J.F., Poulton, S., Parker, W. & Bilbo, S.D. 2016, 'Got worms? Perinatal exposure to helminths prevents persistent immune sensitization and cognitive dysfunction induced by early-life infection', *Brain, behavior, and immunity*, vol. 51, pp. 14-28.

² Vos, J.G., Dybing, E., Greim, H.A., Ladefoged, O., Lambré, C., Tarazona, J.V., Brandt, I. & Vethaak, A.D. 2000, 'Health effects of endocrine-disrupting chemicals on wildlife, with special reference to the European situation', *Critical reviews in toxicology*, vol. 30, no. 1, pp. 71-133.
Weschler, C.J. 2009, 'Changes in indoor pollutants since the 1950s', *Atmospheric Environment*, vol. 43, no. 1, pp. 153-69.

³ Ott, W.R., Steinemann, A.C. & Wallace, L.A. 2006, *Exposure analysis*, CRC Press.

⁴ Rittel, H. W., & Webber, M. M. (1973). Dilemmas in a general theory of planning. *Policy sciences*, 4(2), 155-169.

While there is no single definition of transdisciplinarity (TD)⁵, overarching characteristics and principles have been synthesised by a range of scholars^{6,7,8}. The editors invite authors to consider how their research can be defined as transdisciplinary, clearly articulating the problem orientation, the actors involved and/or implicated and how knowledge has been integrated to provide insight into the local context of inquiry. Authors are encouraged to focus on clearly communicating their findings to a broad readership that crosses disciplinary fields and expertise.

We encourage contributions from (but not limited to) the following fields:

Microbiology and micro-ecology
Exposure science
Toxicology
Epidemiology
Environmental sociology
Design and architecture
Anthropology of the home
Product design
Urban ecology

In the spirit of transdisciplinary collaboration, the review process for this issue will invite accepted authors to review one paper from an alternative disciplinary perspective by another contributing author. This process will provide authors an opportunity to gain insight into alternative perspectives of the problem of indoor ecosystems and ensure that contributions are communicated in accessible language.

About the journal: *Human Ecology Review* publishes interdisciplinary and transdisciplinary research examining interactions between humans and their natural, social, and built environments. The journal is open access and does not charge author fees. Papers are released online immediately ensuring a fast turnaround.

Please send abstracts to Rachael.Wakefield-Rann@uts.edu.au and Dena.Fam@uts.edu.au.

Abstracts due: 15 February 2018

Final papers due: 15 July 2018

⁵ Jahn, T., Bergmann, M. & Keil, F. (2012). Transdisciplinarity: Between mainstreaming and marginalization. *Ecological Economics*, 79, 1-10.

⁶ Bergmann, M., Brohmann, B., Hoffmann, E., Loibl, M. C., Rehaag, R., Schramm, E., & Voß, J. P. (2005). Quality criteria of transdisciplinary research. A guide for the formative evaluation of research projects. ISOE-Studentexte, (13).

⁷ Jahn, T., Bergmann, M. & Keil, F. (2012). Transdisciplinarity: Between mainstreaming and marginalization. *Ecological Economics*, 79, 1-10.

⁸ Wickson, F., Carew, A.L. & Russell, A.W. (2006). Transdisciplinary research: characteristics, quandaries and quality, *Futures*, 38, 1046 - 1059.