Winners of the 2017 Graedel Prizes

The Journal of Industrial Ecology Best Paper Prizes

Christopher Kennedy (1) and Reid Lifset (2)

1 Department of Civil Engineering, University of Victoria, Victoria, BC, Canada
2 School of Forestry & Environmental Studies, Yale University, New Haven, CT, USA

In 2013, the Graedel Prizes were established to honor Professor Thomas Graedel, now emeritus at Yale University, after an outstanding career as researcher and pioneer in the field of industrial ecology (IE). The prizes are awarded to the best two papers published in the Journal of Industrial Ecology (JIE) every year. Winners receive $750 and a free membership in the International Society for Industrial Ecology. Funding for the prizes was generously provided in honor of Thomas Graedel by the Nickel Institute, GE, A-1 Recycling, the Raw Materials Group Stockholm, and AT&T.

The year 2017 was noteworthy for the Journal of Industrial Ecology, with special issues on Environmental Dimensions of Additive Manufacturing and 3D Printing; Exploring the Circular Economy; and Charting the Future of Life Cycle Sustainability Assessment. The special issues not only generated strong interest and citations, but also papers that attracted nominations for the Graedel Prizes. Four of the papers in the issue on the circular economy were nominated (Baxter et al. 2017; Blomsma and Brennan 2017; Moreau et al. 2017; Zink and Geyer 2017). A paper by Kua (2017) was nominated from the special issue on life cycle sustainability analysis (LCSA). Of the remaining eight nominations, published in regular issues, two addressed the urban scale (Cao et al., 2017; Dias et al., 2017); three were concerned with socioeconomic metabolism at national or global scales (Dai and Wang 2017; Efthimiou et al. 2017; Martinico-Perez et al. 2017); and three made contributions to life cycle assessment (LCA) and/or environmentally extended input-output analysis (Majeau-Bettez et al. 2017; Vadenbo et al. 2017; Ward et al. 2017).

A large majority of the papers nominated were by first authors under the age of 36. Moreover, after the first round of evaluations by the JIE Best Paper Prize Committee, all of the top-ranked papers were led by junior authors. After deliberation, the Committee voted to award two prizes in the JIE Junior Author Best Paper category this year.

The prize-winning papers demonstrate high-quality work at the cutting edge of industrial ecology theory—addressing key issues of allocation in life cycle assessment and input-output analysis—and the significance of the practical application of the concepts in the field—revealing the potential for rebound in the circular economy.

- Trevor Zink and Roland Geyer for their paper, “Circular Economy Rebound.” Zink (figure 1) is Assistant Professor of Management at Loyola Marymount University in Los Angeles, California, USA; Geyer is a professor at the University of California–Santa Barbara, California, USA.
- Guillaume Majeau-Bettez, Thomas Dandres, Stefan Pauliuk, Richard Wood, Edgar Hertwich, Réjean Samson, and Anders Hammer Strømman for their paper, “Choice of Allocations and Constructs for Attributional or Consequential Life Cycle Assessment and Input-Output Analysis.” Majeau-Bettez (figure 2) is a postdoctoral researcher with CIRAIG, at Polytechnique Montreal, Canada, and the Norwegian University of Science and Technology (NTNU) in Trondheim, Norway. Dandres and Samson are with CIRAIG. Wood and Hammer Strømman are with the Industrial Ecology Programme at NTNU. Pauliuk is at the University of Freiburg, Germany, and Hertwich is at Yale University, New Haven, Connecticut, USA.

The paper by Zink and Geyer is a highly original article on the potential rebound of the circular economy. With engaging text and excellent diagrams, it provides a clear explanation of...
EDITORIAL

Figure 1  Trevor Zink, lead author of 2017 Graedel Prize for best paper by a junior author.

Figure 2  Guillaume Majeau-Bettez, lead author of 2017 Graedel Prize for best paper by a junior author.

The committee found it to be a provocative and persuasive paper, with the beauty of not being overly complicated. The authors use conceptual ideas, literature review, and two simple but elegant equations to demonstrate an important rebound effect impacting the efficacy of the circular economy. Insights of the paper are highly policy relevant, with a discussion of how to avoid circular economy rebound adding a positive tone.

The paper by Majeau-Bettez and colleagues is a great contribution for the LCA community within industrial ecology that has been wrestling with the issue of allocation models in relation to attributional and consequential LCA. Building upon an extensive literature review, a thorough and comprehensive analysis is conducted to develop axiomatic characteristics for attributional and consequential coproduction models. The committee found the paper to be original and meticulous.

The committee also gives a special mention to an excellent paper by Martinico-Perez and colleagues (2017) on material flows and their driving factors during economic growth in the Philippines.

The prize-winning papers demonstrate high-quality work at the cutting edge of industrial ecology theory, addressing key issues of allocation in LCA and input-output analysis and the significance of the practical application of the concepts in the field—revealing the potential for rebound in the circular economy. We look forward to recognizing more such high-quality papers in the future.

A final note: Professor Helge Brattebø served as chair of the JIE Best Paper Committee from the time of its inauguration. He was the leader in devising its structure and rules and in resolving issues as the prize was put into place. He has stepped down from his role, and Professor Christopher Kennedy of the University of Victoria has assumed the chairpersonship. We thank Professor Battebø for his hard work in making the Graedel Prizes possible.

Notes
4. See https://jie.yale.edu/best_paper_prizes

References


**Conflict of interest statement:** No members of the JIE Best Paper Prize Committee had conflicts of interest in assessing the papers.

**Address correspondence to:**
Dr. Chris Kennedy, PhD, PEng, FCAE, Professor and Chair, Department of Civil Engineering, University of Victoria, British Columbia, V8P 5C2, Canada. Email: cakenned@uvic.ca
Web: www.uvic.ca/engineering/civil/people/home/ckennedy.php