

P. M. Lindborg  
School of Creative Media  
**Type of address: Visiting address.**  
CMC-M6065  
**Email:** plindbor@cityu.edu.hk  
**Phone:** +852 34422948



## Biography

PerMagnus Lindborg 林博培, PhD, is a composer, sound artist, and researcher in sound perception. The first author of more than 150 scholarly publications, compositions, and media artworks. He is a Fellow with The Arctic Circle (2023), SCM Team Research (2020-25), and TBA The Current (2016), and Principal Investigator for Multi-Modal Hong Kong (GRF 2023-25).. He was commissioned by or selected for Asian Composers League (New Zealand 2022), ArtScience Museum (Singapore 2021), Osage (Hong Kong 2021), CubeFest (Virginia 2019), Berlin PianoPercussion (2018), Xuhui Museum (Shanghai 2017); Tonspur (Vienna 2016); National Gallery (Singapore 2015); Onassis Centre (Athens 2014); Moderna Museet (Stockholm 2008); Centre Pompidou (Paris 2003), and more. Won multiple awards for films about music, e.g. Best New Director at World Film Carnival, Cannes Short Film Festival, ISA Awards (2020), and for composition, e.g. First Prize at Stavanger Symphony Orchestra Prize (Norway 2002). Refereed publications in Applied Acoustics, Applied Sciences, Frontiers, IRCAM-Delatour, Leonardo, Organised Sound, PLoS One, Springer-LNCS, and conference proceedings such as ICAD, ICMC, ICMPC, NIME, Forum Acousticum, and SMC. Created DACA Conference on Data Art for Climate Action (2022) and Soundislands Festival (2013, -15, -17). Currently serves as Vice-President for Asia-Oceania of the International Computer Music Association and Review Editor for Frontiers. After completing studies in piano and composition (BMus Oslo), PerMagnus worked as an independent artist for ten years, while pursuing music computing (IRCAM Paris 1999) and contemporary musicology (DEA Paris 2003). In 2015 he defended his PhD dissertation Sound Perception and Design in Multimodal Environments (KTH Stockholm). Working in higher education since 2005 (France, Singapore, Korea), PerMagnus is currently Associate Professor at the School of Creative Media at City University of Hong Kong, teaching courses related to sound, music, research skills, and perception.  
<https://www.scm.cityu.edu.hk/people/lindborg-permagnus>

## Employment

**School of Creative Media**  
City University of Hong Kong  
2 Jan 2020 → present

## Research outputs

### **Multimodal Hong Kong: Documenting soundscape and smellscape at places of intangible cultural heritage**

Lindborg, P., Aletta, F., Xiao, J., Liew, K., Matsuda, Y., Yue, R., Jiang, Q., & 2 others Lam, L. H. & Wei, L., Aug 2024, *Proceedings of Inter-Noise 2024*. 13 p.

### **Workshop on Spatial Audio Pedagogy using the Open Ambisonics Toolkit**

Lindborg, P. & Pisano, G., 13 Jul 2024, (Accepted/In press/Filed) *Proceedings of the International Computer Music Conference 2024*.

### **Multimodal Hong Kong: Perceiving pedestrian footbridge spaces in a high-density area through sensewalking**

YUE, R., Lindborg, P., IKESHIRO, R. & GUI, R., 27 Apr 2024, (Accepted/In press/Filed) *Proceedings of Inter-noise 2024*.

### **Re-scaling Beethoven: Very Long, Very Short**

Lindborg, P., 2024, *Routledge Encyclopedia of Technology and the Humanities*. Chan, S., Mak, K. & Leung, S. M. (eds.). Abingdon, Oxon: Taylor & Francis, p. 284-298

### **A Neural Network for Generating Noise Music**

CHEN, M. & Lindborg, P., Dec 2023. 3 p.

### **SoundLab, first three years [studio report]**

Lindborg, P. & Ikeshiro, R., Oct 2023, *ICMC 2023 Proceedings*. p. 70-72

**TOWARDS SOUNDSCAPE DIVERSITY – A COMPARISON OF STAKEHOLDER PERCEPTIONS AND STRUCTURAL DESIGN ELEMENTS BETWEEN A LOCALIZED AND A REVITALIZED MARKET IN HONG KONG**

YUE, R. & LINDBORG, P., Oct 2023, p. 1148.

**DISTURBED SLEEP: ESTIMATING NIGHT-TIME SOUND ANNOYANCE AT A HOSPITAL WARD**

Lenzi, S., Lindborg, P., Han, N., Spagnol, S., Kamphuis, D. & Özcan, E., Sept 2023. 8 p.

**Introducing the Open Ambisonics Toolkit**

Pisano, G. & Lindborg, P. M., 29 Jun 2023. 2 p.

**Exhibition :: The Dual City Multi-sensory Experience of Markets**

Lindborg, P., Xiao, J., Aletta, F., Cheung, H., Yue, R., Han, N. & Xu, X., 14 Apr 2023

**The Dual City Multi-sensory Experience of Markets**

Lindborg, P., Xiao, J., Aletta, F., Cheung, H., Yue, R., Han, N. & Xu, X., 14 Apr 2023

**freq\_spark: four corners: Collaborative and generative online sound installation**

Lindborg, P., Hauswloff, C. V. & Bilting, U., Mar 2023

**Generative Adversarial Networks for Technical Ear Training in Perceiving How Reverberation Affects Frequency Contents in Music Production Education**

Chen, M. & Lindborg, P. M., Jan 2023.

**Observations on Guitar Music Produced by AI Reverberation and Professional Sound Engineer**

CHEN, M. & LINDBORG, P. M., Jan 2023, In: International Journal of Music Science, Technology and Art. 5, 1, p. 1-7 7 p.

**Climate data sonification and visualization: An analysis of topics, aesthetics, and characteristics in 32 recent projects**

Lindborg, P., Lenzi, S. & Chen, M., 2023, In: Frontiers in Psychology. 13, 1020102.Scopus citations: 5

**Deep Neural Networks with Music Dereverberation for Technical Ear Training in Music Production Education**

Chen, M., Lindborg, P. & Meng, S., 2023, In: Asia-Pacific Journal for Arts Education . Special Issue 2023, 21 p.

**Editorial: Data perceptualization for climate science communication**

Lindborg, P., Chopra, S. S. & Groß-Vogt, K., 2023, In: Frontiers in Psychology. 14, 1263971.Scopus citations: 1

**Charting the scene(s) of sonic arts in Hong Kong**

IKESHIRO, R., CHARRIERAS, D. & LINDBORG, P., Dec 2022, In: Organised Sound. 27, 3, p. 369–378Scopus citations: 1

**Gravton Dance: Higher-Order Ambisonics 3D sound composition**

Lindborg, P., 28 Aug 2022

**Re-scaling Beethoven: Very long, very short**

Lindborg, P., 10 Jun 2022.

**SoundLab, a spatial audio research/practice unit in Hong Kong**

Ikeshiro, R. & Lindborg, P., Jun 2022, *Proceedings of ISEA2022 Barcelona, 27th International Symposium on Electronic Art*. Alsina, P., Vilà, I., Tesconi, S., Soler-Adillon, J. & Mor, E. (eds.). Barcelona, Spain, p. 1009-1010 2 p.

**KYAGER**

Lindborg, P. & Loo, S. W., 15 Apr 2022

### **Feather-Crater**

Lindborg, P., 14 Apr 2022

### **Stairway to Helheim: Eight-channel site-specific sonification installation [online version]**

Lindborg, P., 23 Feb 2022

### **Stairway to Helheim**

Lindborg, P., Feb 2022, *DACA 2022 - Conference on Data Art for Climate Action: Proceedings/Catalogue*. Lindborg, P. (ed.). School of Creative Media, City University of Hong Kong, p. 98-99 2 p.

### **SoundLab and Electroacoustic Music in Hong Kong**

Ikeshiro, R. & Lindborg, P., 28 Dec 2021, *Emille: the Journal of the Korean Electro-Acoustic Music Society*. Lee, B. & Cho, Y. (eds.). Seoul: Yesol Publishing, Vol. 19. p. 33-37 5 p.

### **Real and Imagined Smellscapes**

Lindborg, P. & Liew, K., Dec 2021, In: *Frontiers in Psychology*. 12, 718172. Scopus citations: 4

### **Stairway to Helheim: Eight-channel site-specific sonification installation**

Lindborg, P., 13 Nov 2021

### **Power Chess: robot-to-robot nonverbal emotional expression applied to competitive play**

LC, R., Benayoun, M., Lindborg, P., Xu, H., Chan, H. C., Yip, K. M. & Zhang, T., 13 Oct 2021, *ARTECH 2021 : Proceedings of the 10th International Conference on Digital and Interactive Arts: Hybrid Praxis - Art, Sustainability and Technology*. Lopes, M. M., Lopes, P. B., Araújo, A., Olivero, L. F. & Fernandes-Marcos, A. (eds.). New York: Association for Computing Machinery, 2. (ACM International Conference Proceeding Series). Scopus citations: 6

### **Remote Islands Radio Plays: Teaching Soundscape Composition in the Uncertain Future of the Anthropocene**

Lindborg, P., 25 Sept 2021.

### **I'm always here**

Guzman-Serrano, R., Merewether, C., IKESHIRO, R., LC, R., Lindborg, P. & Wong, C., 25 Jul 2021

### **KYAGER: film version**

Lindborg, P., 24 Jul 2021

### **P8•八音: multichannel sound installation with video projection, objects, and wall painting**

Lindborg, P., Koh, J. B. & Chan, M. C. Y., 24 Jul 2021

### **Simmering / 고다: film version as part of exhibition**

Lindborg, P. & Hwang, J., 24 Jul 2021

### **The Sound of Origin**

Lindborg, P., 24 Jul 2021

### **Evaluation of AI Reverberation on Guitar**

CHEN, M. & LINDBORG, P., Jul 2021.

### **KYAGER for Sheng, Trombone, and Electronics**

Lindborg, P., Jul 2021

### **Sonification of Glitch-Video: Making and Evaluating Audiovisual Art made from the Betta Fish**

Janbuala, K. & Lindborg, P., Jul 2021, *Proceedings of the International Computer Music Conference 2021: The virtuoso computer: redefining limits*. Cádiz, R. F. (ed.). San Francisco, CA: International Computer Music Association, p. 255-259 (ICMC - Proceedings of the International Computer Music Conference).

### **The multi-hub academic conference: Global, inclusive, culturally diverse, creative, sustainable**

Parncutt, R., Lindborg, P., Meyer-Kahlen, N. & Timmers, R., Jul 2021, In: *Frontiers in Research Metrics and Analytics*. 6, 699782. Scopus citations: 25

### **Editorial: Human Perception of Environmental Sounds**

Aletta, F., De Coensel, B. & Lindborg, P., Jun 2021, In: *Frontiers in Psychology*. 12, 714591. Scopus citations: 3

### **Feeling Loki's Pain: Designing and Evaluating a DIY 3D Auditory Display for geodata sonification**

Lindborg, P., Jun 2021, *Proceedings of the 26<sup>th</sup> International Conference on Auditory Display (ICAD 2021)*. Andreopoulou, A., Droumeva, M., Newbold, J. W., McMullen, K. & Vickers, P. (eds.). The International Community for Auditory Display, p. 169-175 (ICAD).

### **KYAGER: for Sheng, audio, and video**

Lindborg, P. & Loo, S. W., Jun 2021

### **KYAGER**

Lindborg, P., Wang, L. S., Koh, J. B. & Chen, M., Jun 2021

### **Loki's Pain**

Lindborg, P., Jun 2021, *Proceedings of the 21st New Instruments for Musical Expression Conference (NIME) 2021*. 12 p. (NIME Proceedings series).

### **Mountain Graffiti: audiovisual postcard**

Lindborg, P., Jun 2021

### **When In Doubt Go To A Museum [Exhibition]**

Logar, T., von Hauswolff, C. M. & Lindborg, P., 21 May 2021

### **Soundscape in Times of Change: Case Study of a City Neighbourhood During the COVID-19 Lockdown**

Lenzi, S., Sádaba, J. & Lindborg, P., Mar 2021, In: *Frontiers in Psychology*. 12, 570741. Scopus citations: 32

### **ICMA Awards**

Lindborg, P. & Haworth, C., 2021, International Computer Music Association. 2 p. (Array; no. 2)

### **SoundLab Presents: Audio-Visual from Hong Kong, curated by Ryo Ikeshiro @ Seeing Sound**

Lindborg, P., Ikeshiro, R., Blazsek, A., Lo, E., Chen, M., Yiu, A. A. A. & Ikeshiro, R., 13 Dec 2020

### **Loki's Pain**

Lindborg, P. & CASSINELLI, A., 24 Nov 2020

### **How to Tread Lightly: stage expanded, an exhibition**

Thyssen-Bornemisza, F., Hausswolff, C. M. & Lindborg, P., 6 Oct 2020

### **ASMR, a Sound Art: Experiences from Online Classes in Music and Multimedia**

Lindborg, P., 25 Sept 2020.

### **Which Timbral Features Granger-Cause Colour Associations to Music?**

Lindborg, P., Sept 2020, *PROCEEDINGS OF THE 2nd INTERNATIONAL CONFERENCE ON TIMBRE*. Greece: Aristotle University of Thessaloniki, p. 75-78

**Freq\_Out\_Wave-1\_2kHz**  
Lindborg, P., 29 Aug 2020

**Freq\_Out\_Wave-1\_2kHz: Part of Trajectory 6: web-based interactive collaborative sound art**  
Lindborg, P., 18 Jul 2020

**Freq\_Out\_Wave-1\_2kHz**  
Lindborg, P., Jul 2020

**Ninth Day at Che Kung Temple - Chinese New Year of the Rat**  
Lindborg, P., Feb 2020

A Sonification of Cross-Cultural Differences in Happiness-Related Tweets  
LIEW, K. & LINDBORG, P., Jan 2020, In: AES: Journal of the Audio Engineering Society. 68, 1/2, p. 25-33 9 p.Scopus citations: 4

Feather-Crater  
Lindborg, P., 12 Dec 2019

Gwanaksan  
Lindborg, P., 12 Dec 2019

Haslla  
Lindborg, P., 12 Dec 2019

Simmering / 고다  
Lindborg, P., Dec 2019

The Sound of Origin  
Lindborg, P., Dec 2019

**Astrolabe – Whakaterenga: multimedia installation and VR film**  
Belton, D., Grenfell, J., Lindborg, P. & Koh, J. B., 5 Nov 2019

Atmosphere / 정취  
Lindborg, P., Nov 2019

*Graviton Dance (2012): For loudspeakers (with optional light display)*  
Lindborg, P. & Koh, J. B., Sept 2019.

**Graviton Dance: Generative 3D sound composition**  
Lindborg, P., 11 Aug 2019

**Diversity Statement of the International Computer Music Association**  
ICMA Board, I. B., Jun 2019, In: Array. 2019, 1, p. 49-50 2 p.

WHAT IS THE COLOR OF THAT ELECTROACOUSTIC MUSIC?  
Lindborg, P., Jun 2019, *Proceedings of the 2019 International Computer Music Conference, ICMC-NYCCEMF 2019 - International Computer Music Conference New York City Electroacoustic Music Festival*. International Computer Music Association, p. 149-152 4 p. (Proceedings of the International Computer Music Conference, ICMC-NYCCEMF - International Computer Music Conference New York City Electroacoustic Music Festival).

Listening to Cities: Film triptych about Hong Kong, Daegu, Singapore, and Tromsø  
Lindborg, P., 16 Apr 2019

How do we listen?

Lindborg, P., 28 Dec 2018, In: Emille, the Journal of the Korean Electro-Acoustic Music Society. 16, p. 43-49 7 p.

Music for Mr Wang

Lindborg, P., 24 Nov 2018

Pieces of Eight – 八音: (performance) Nine-hour remote performances by eight musicians at eight locations with Internet streaming, followed by one-hour live performance with eight musicians, eight percussionists, eight eGuqins and eight-channel electronics at blackbox theatre

Lindborg, P., 24 Nov 2018

Pieces of Eight – 八音 (installation): Multichannel generative sound installation with various acoustic and electronic sound objects

Lindborg, P., Schuldenfrei, E., Koh, J. B., Yiu, M., Taylor, D. & Hegland, A., 24 Nov 2018

Interactive Sonification of Weather Data for *The Locust Wrath*, a Multimedia Dance Performance

Lindborg, P., Oct 2018, In: Leonardo. 51, 5, p. 466-474 9 p.Scopus citations: 7

Making of Pieces of Eight – 八音: Film documenting onsite recordings in Hong Kong and interviews with HKNME musicians.

Lindborg, P., Koh, J. B. & Lane, W., Oct 2018

Golden City Variations: for two pianists and two percussionists

Lindborg, P., 30 Apr 2018

Cross-modal perception of noise-in-music: audiences generate spiky shapes in response to auditory roughness in a novel electroacoustic concert setting

Liew, K., Lindborg, P. M., Rodrigues, R. & Styles, S. J., 2018, In: Frontiers in Psychology. 9, 178.Scopus citations: 11

*Pacific bell tower*, a sculptural sound installation for live sonification of earthquake data

Lindborg, P., Oct 2017, *2017 ICMC/EMW: HEARING THE SELF*. Shanghai Conservatory of Music, Vol. 2017. p. 207-209 3 p. (International Computer Music Conference Proceedings).

Sonic Explorations of Gumowski-Mira Maps

Tan, T. S. H. & Lindborg, P., Oct 2017, *2017 ICMC/EMW: HEARING THE SELF*. Shanghai, China: Shanghai Conservatory of Music, p. 195-200 6 p. (International Computer Music Conference Proceedings).

Dissonance and Roughness in Cross-Modal Perception

Liew, K., Styles, S. J. & Lindborg, P., Aug 2017. 5 p.

AXIS, Anatomy of Space: Dome projected dance art film with surround electroacoustic music

Belton, D., Lindborg, P., Koh, J. B. & Grenfell, J., 20 Mar 2017

Personality traits bias the perceived quality of sonic environments

Lindborg, P. & Friberg, A., Dec 2016, In: Applied Sciences (Switzerland). 6, 12, 405.Scopus citations: 23

A taxonomy of sound sources in restaurants

Lindborg, P., Sept 2016, In: Applied Acoustics. 110, p. 297-310 14 p.Scopus citations: 37

Porous emerald

LINDBORG, P., Jul 2016, In: ISSUE. 05, p. 83-97 15 p.

About *When We Collide*: A Generative and Collaborative Sound Installation

Lindborg, P. & Koh, J. B., Aug 2015, *Proceedings of the 2nd International Symposium on Sound & Interactivity*. International Computer Music Association, p. 104-107 4 p.

LOCUST WRATH: AN iOS AUDIENCE PARTICIPATORY AUDITORY DISPLAY

Lindborg, P. & Yuning, D. L., Jul 2015, *ICAD 15 - Proceedings of the 21st International Conference on Auditory Display*. Vogt, K., Andreopoulou, A. & Goudarzi, V. (eds.). Austria: IEM-KUG, Graz, p. 125-132 8 p.

Audio Quality Moderates Localisation Accuracy: Two Distinct Perceptual Effects?

Lindborg, P. & Kwan, N. A., May 2015, *Proceedings - 138th Audio Engineering Society Convention 2015*. Audio Engineering Society, Vol. 2. p. 797-806 10 p.

Psychoacoustic, physical, and perceptual features of restaurants: A field survey in Singapore

Lindborg, P., May 2015, In: *Applied Acoustics*. 92, p. 47-60 14 p. Scopus citations: 31

Colour Association with Music Is Mediated by Emotion: Evidence from an Experiment Using a *CIE Lab* Interface and Interviews

Lindborg, P. & Friberg, A. K., 2015, In: *PLoS ONE*. 10, 12, e0144013. Scopus citations: 41

Conversation with Pete Kellock, Zul Mahmod and Mark Wong: SOUND ART IN SINGAPORE

Lindborg, P., Aug 2014, In: *eContact!*. 16, 2

MULTI-DIMENSIONAL SPATIAL SOUND DESIGN FOR 'ON THE STRING'

Lindborg, P. & Koh, J. B., 2011, In: *International Computer Music Conference, ICMC Proceedings*. p. 75-78 Scopus citations: 1

SINGAPORE VOICES: An interactive installation about languages to (re)(dis)cover the intergenerational distance

Lindborg, P., 2010, In: *IM: Interactive Media*. 6, 27 p.

Reflections on Aspects of Music Interactivity in Performance Situations

Lindborg, P., Oct 2008, In: *eContact!*. 10, 4

About *TreeTorika*: Rhetoric, CAAC and Mao

Lindborg, P., 2008, *OM Composer's Book*. Bresson, J., Agon, C. & Assayag, G. (eds.). France: Éditions Delatour France / IRCAM - Centre Pompidou, Vol. 2. p. 155-176 22 p.

Preparing for *TreeTorika*: Computer-Assisted Analysis of Mao's oratory

Lindborg, P., Jul 2007, *SMC'07 4th Sound and Music Computing Conference: PROCEEDINGS*. Spyridis, C., Georgaki, A., Kouroupetroglou, G. & Anagnostopoulou, C. (eds.). Athens: National and Kapodistrian University of Athens, p. 267-274 8 p. (Proceedings of the Sound and Music Computing Conference, SMC). Scopus citations: 1

"Leçons": An Approach to a System for Machine Learning, Improvisation and Musical Performance

Lindborg, P., May 2003, *Computer Music Modeling and Retrieval: International Symposium, CMMR 2003. Revised Papers*. Wiil, U. K. (ed.). Berlin, Heidelberg: Springer, p. 210-216 7 p. (Lecture Notes in Computer Science; vol. 2771).