

PerMagnus Lindborg, PhD

Summary, highlights

I am a composer, interactive media artist, and researcher, specialising in music computing and cross-modal perception. My compositions and sonic artwork have garnered prizes at FORUM (Montreal 1996) and SSO Nordic Composer Orchestra Competition (Stavanger 2002), and commissioned showcases at prestigious venues, notably *IRCAM* (1999), *Centre Pompidou* (2003), *Ultima Festival* (Oslo 2000, 2006), *Onassis Centre* (Athens 2014), *National Gallery* (Singapore 2015), and *Xuhui Art Museum* (Shanghai 2017). My empirical research is published in high impact journals, notably *PLoS One* (2015), *Leonardo* (2016), *Applied Acoustics* (2015, 2016), and *Applied Sciences* (2016). With thirteen years of international teaching experience, my pedagogy in interactive media, sound art, soundscape, composition, and research methodology is well received and my individually supervised students publish internationally. I was a keynote speaker at *Volume 2 Symposium* (Aalto University 2016). I founded the biannual *Soundislands Festival* in Singapore (2013, 2015, 2017), and since 2014 serve as Music Coordinator on the Board of the *International Computer Music Association*.

Qualifications

- 2010–15, **Doctor of Philosophy, in the subject area of Speech and Music Communication** (part-time) **specialised in Sound and Music Computing.** *KTH Royal Institute of Technology, CSC/TMH, Sweden*, <http://www.kth.se>. Original: *Teknologie doktorsexamen inom ämnet tal- och musikkommunikation med inriktning mot ljud och musik*. Dissertation defended 11 Dec. 2015: "*Sound perception and design in multimodal environments*", <http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-177271>. Faculty examiner: D Västfjäll. Supervisor: A Friberg.
- 2001–03, **Master of Advanced Studies in Music and Musicology of the 20th Century (Cum Laude)** (part-time) *Université de Paris Sorbonne, IReMus, France*, <http://collegium.musicae.sorbonne-universites.fr/>. Original: *DEA en musique et musicologie du XXe siècle, mention Très Bien* (equivalent to MPhil Cum Laude, <http://bit.ly/2yQZryw>). Thesis defended 22 Oct. 2003, <http://bit.ly/2wH1btK>. Supervisor: M Battier.
- 1998–9 **Cursus in Composition and Music Computing.** *IRCAM, France*, <http://www.ircam.fr>. Original: *Cursus de composition et d'informatique musicale* (equivalent to MSc or PgDip. Competitive entry (~390 applications, 10 accepted). Supervisor: M Malt.
- 1991–5 **Bachelor of Music in Composition.** *Norwegian Academy of Music, Norway*, <http://nmh.no>. Original: *Kandidateksamen i komposisjon*. 4-year competitive entry (~40 applications, 2 accepted). Supervisor: OA Thommessen.

Awards, prizes

- 2003 Creative grant, TONO, Norway. 100,000 NOK. Competitive award by committee evaluation.
- 2002 **First Prize** at SSO Nordic Composers Competition, Norway, for orchestra piece "Khreia", <http://bit.ly/1VuAVIi>, performed by Stavanger Symphony Orchestra & Z Nagy.
- 1999 Young Artist Award, Ministry of Cultural Affairs, Norway. 150,000 NOK. <http://www.kulturradet.no>. Competitive award by committee evaluation.
- 1998 Young Artist Award, Ministry of Cultural Affairs, Norway. 150,000 NOK. <http://www.kulturradet.no>. Competitive award by committee evaluation.
- 1996 **Audience Prize** at FORUM Montreal, Canada, for sinfonietta piece "Nermal Sonosofisms", performed by Nouvel Ensemble Moderne & LVaillancourt.

Appointments

- 2017– **Private company** in sole proprietorship, Brønnøysund, Norway, <http://bit.ly/1WICBVG>.
- Commissioned composition of music scores and production of sonic artwork
 - Consultancy on music computing.
- 2007–17 **Assistant Professor**, *School of Art, Design, and Media*, Nanyang Technological University, Singapore, <http://www.adm.ntu.edu.sg>. (23 Nov. 2007 - 15 Sep. 2017).
- Research (40%) in interactive music and sound art, with output such as publications and artwork; Teaching (40%) including courses in undergraduate (BFA in Interactive Media, graduate (Master of Research), and other programs; and Service (20%) including management, committee work, outreach, and services to the profession.
 - Developed and delivered a PG tutorial course in research methodology for artists/designers.
 - Developed and delivered ten UG studio courses (cores & electives) such as: Design for interactive media, Interactive media workshop, Interactive spaces, Project development, Sound art, Soundscape design, Music composition, and Performance art.
 - Individual supervision of 28 projects in MA, FYP, URECA, USP schemes.
 - Area Coordinator for Interactive Media 2008-9, and again 2012-14;
 - Appointed to Graduate Research and Teaching Committee 2014–15.
 - Curriculum design; hiring of part-time faculty and guest lecturers; budgeting; resource management; teamwork and leadership.
 - Co-produced public and internal exhibitions, outreach, performances, and other events.
- 2012–14 **Non-Executive Director**, *aPopi Pte. Ltd*, Singapore, <http://bit.ly/1U5INjd>.
(part-time)
- Spin-off from a research project on music information retrieval.
 - Development and commercialisation of mobile app that created a short pop tune based on user preferences.
 - Supported by the entrepreneurship hub at NTU.
 - Hiring of code developer; budget management.
- 2009, Oct. **Academic advisor** for Vietnam National Academy of Music, Hanoi. (Endorsed by NTU).
(part-time)
- New undergraduate curriculum for a 4-year program leading to BA in Music Technology.
 - Consultancy sponsored by Transposition: Norway-Vietnam Cultural Exchange Program.
- 2007 **Lecturer in Music Technology**, *LaSalle College of the Arts*, Singapore, <http://www.lasalle.edu.sg>. (1 Mar. - 22 Nov. 2007).
- UG, Diploma curriculum design.
 - Development and delivery of tutorial courses in interactive sound design, MIDI, music technology theory, studio recording, audio for film / media production, etc.
 - Curriculum design; resource management; teamwork.
 - Co-produced public and internal performances and events.
- 2005–6 **Lecturer in Electroacoustic Composition** and **Director of EAM Studio**, *Conservatoire de Musique, de Danse et d'Art Dramatique du Pays de Montbéliard*, France, <http://bit.ly/1Q8jWtY>, (1 Jan. 2005 - 31 Dec. 2006).
- Development and delivery of tutorials in techniques for electroacoustic composition, sound synthesis, sound design, studio production
 - Individual supervision in composition, sound design and spatialisation.
 - As Director of the Electro-Acoustic Music Studio, responsible for hardware (8-ch surround) and software (Max, OpenMusic, Modalys, AudioSculpt, ProTools, Digital Performer...); development, maintenance, budgeting, upkeep, and pedagogy.
 - Curriculum design; resource management; teamwork.
 - Co-produced several concert and installation events at public venues; outreach.
- 2000 **Assistant in music computing** to Rolf Wallin, in his production of “Manifest”, theatre of music, Copenhagen (5 months).
- 1995–2004 **Private company** in sole proprietorship, Brønnøysund, Norway, <http://bit.ly/1WICBVG>.
- Commissioned composition of music scores and production of sonic artwork
 - Consultancy on music computing.
- 1993–5 **Assistant recording engineer**, Academy of Music, Oslo, Norway.
(part-time)
- Numerous live acoustic concert events; recording and mastering; documentation for library.

Residencies

- 2016 Fellow with The Current, TBA21, curated by Ute Meta Bauer (1 month). Field audio recordings on land (Ambisonic) and underwater (hydrophonic) in French Polynesia, <https://www.tba21.org>. Output includes dome-projected film "AXIS - Anatomy of Space", [#38], and soundscape composition "Tuamotus Triptych" [#37]
- 2004 Herrenhaus Edenkoben, Germany (5 months). Output includes: "Edenkobener Beethoven Bagatellen" for piano; and "16NO, theatre of music", for actor & electronics.
- 2001-2 Stavanger Symphony Orchestra & Z Nagy, Norway, <http://www.ballade.no/sak/nordisk-komponistverksted/> (6 months). Output includes "Khreia" for orchestra.
- 1998 Franco Donatoni Workshop, Mexico City (2 months). Output includes "iOralei!" for ensemble.
- 1997 Royaumont Fondation, France, with Ensemble Recherche & B Ferneyhough, <https://www.royaumont.com/> (1 month). Output includes "sr" for ensemble.
- 1996 Sasakawa Scandinavia Foundation, Tokyo, Japan. (3 months). Studies of Japanese music.
- 1994 Sir Peter Maxwell Davies Composition Course, Orkney Islands (1 month). Output includes "Dwarfie Stane Chorale" for ensemble.

Board service, professional memberships

- 2014– Board member (Music Coordinator) of the International Computer Music Association, www.computermusic.org/ (by board vote)
- 2013– Composer Society of Singapore, <https://www.facebook.com/sgcomposers> (by invitation)
- 2009– International Computer Music Association, www.computermusic.org/ (by application)
- 1996– Norwegian Society of Composers, <http://www.komponist.no> (by committee evaluation of composition portfolio)
- 1994– Norwegian Performing Rights Association, <http://www.tono.no/english/> (by application)
- 1994– Music Norway [publisher], <http://www.listento.no/> (by evaluation of portfolio)
- 2015–16 Audio Engineering Society, <http://www.aes.org/> (by peer evaluation)
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Research Output

Journal guest editor

1. Lindborg PM & Styles S (2016, May). Editor for Special Issue of Array Journal: "Proceedings of Si15, 2nd International Symposium on Sound and Interactivity", 20 articles, www.computermusic.org/media/documents/array/arraySi15.pdf.
2. Lindborg PM (2014, Oct.). Editor for Special Issue of eContact #16.2: "Sound Art and Interactivity in Singapore", 16 articles, http://cec.sonus.ca/econtact/16_2/.

Book chapters (refereed)

3. Lindborg PM (2016, July). "Porous emerald". Tropical Lab Art Magazine, Issue 05 "Fictive Dreams", eds. M Prvecki & V Puroshothaman. LaSalle College of the Arts, Singapore.
4. Lindborg PM (2008). "About TreeTorika: Rhetoric, CAAC and Mao". Chapter in Bresson, J., Agon C. & Assayag G. (eds): OM Composer's Book #2. Éditions Delatour France / IRCAM - Centre Pompidou, ISBN 978-2-84426-399-5 / 2-7521-0051-5, p. 95-116.
5. Lindborg PM (2003). "Leçons : an Approach to a System for Machine Learning, Improvisation and Music Performance". Chapter in Wiil, U. K. (2004). Computer Music Modeling and Retrieval. International Symposium, CMMR 2003. LIRMM, CNRS, Université de Montpellier-2, Aalborg University 2003. Lecture Notes in Computer Science, LNCS vol. 2771. Springer Verlag, ISSN 0302-9743, ISBN 3-540-20922-0.

Journal articles (refereed)

6. Lindborg PM & Friberg AK (2016, Dec). "Personality Traits Bias the Perceived Quality of Sonic Environments". *Applied Sciences, Special Issue on Soundscapes*, 6(12), 405; doi:10.3390/app6120405.
7. Lindborg PM (2016, Sep.). "A taxonomy of sound sources in restaurants". *Applied Acoustics* 110C, DOI 10.1016/j.apacoust.2016.03.032.
8. Lindborg PM (2016, Aug.). "Interactive Sonification of Weather Data for The Locust Wrath, a Multimedia Dance Performance". *Leonardo*, MIT Press. doi: 10.1162/LEON_a_01339.
9. Lindborg PM & Friberg AK (2015, Dec.) "Colour Association with Music Is Mediated by Emotion: Evidence from an Experiment Using a CIE Lab Interface and Interviews". *PLoS ONE* 10(12): e0144013. doi:10.1371/journal.pone.0144013.
10. Lindborg PM (2015, May). "Psychoacoustic, Physical, and Perceptual Features of Restaurants: A Field Survey in Singapore". *Applied Acoustics* 92, 47-60. DOI: 10.1016/j.apacoust.2015.01.002.
11. Lindborg PM (2014, Oct.). "Sound Art Singapore: Conversation with Pete Kellock, Zul Mahmud and Mark Wong". In *eContact! 16.2* (Lindborg PM, Guest Editor).
12. Lindborg PM (2010). "Singapore Voices: an interactive installation about languages to (re)(dis)cover the intergenerational distance". *IM: Interactive Media. Issue 6: Special issue on 'Performance'*. National Academy of Screen and Sound (NASS), Australia. ISSN 1833-0533.
13. Lindborg PM (2008). "Reflections on aspects of music interactivity in performance situations". In Chippewa, J. (ed): *eContact 10.4, October 2008 ("Live / Improvisation / Interactivity")*. Canadian Electroacoustic Community.

Conference proceedings (refereed)

14. Lindborg PM (2017, Oct). "Pacific Bell Tower, a sculptural sound installation for live sonification of earthquake data". *Proc Intl Computer Music Conf, Shanghai*.
15. Tan TSH & Lindborg PM (2017, Oct). "Sonic Explorations of Gumowski-Mira Maps". *Proc Intl Computer Music Conf, Shanghai*.
16. Liew KM, Styles SJ & Lindborg PM (2017, Aug). "Dissonance and Roughness in Cross-Modal Perception". *Proc Asia-Pacific Soc Cogn Sciences of Music, Kyoto*.
17. Lindborg PM & Koh JBT (2016, May). "About When We Collide: a generative and collaborative surround sound installation". *Proc Si15 2nd Intl Symp on Sound & Interactivity. Array Journal, ICMA*.
18. Lindborg PM & Liu DY (2015, July). "Locust Wrath: an iOS Audience Participatory Auditory Display". *Proc 21 Int Conf Auditory Display*, p. 125-132. Vogt K, Andreopoulou A & Goudarzi V (eds.). IEM-KUG, Graz. ISBN: 978-3-902949-01-1.
19. Lindborg PM & Kwan NAK (2015, May). "Audio Quality Moderates Localisation Accuracy: Two Distinct Perceptual Effects?". *Proc 138 Conv Audio Engineering Society, Warsaw. AES #9313*.
20. Lindborg PM (2014). "Colour Association to Sound: A Perceptual Experiment using a CIELab Haptic Response Interface and the Jyväskylä Film Music Set." *Proc Sound & Music Computing Conf Sweden, Stockholm*, p. 3-4.
21. Lindborg PM & Lim, M.J.Y. (2013, July). "Design of an Interactive Earphone Simulator and Results from a Perceptual Experiment". *Proc Sound & Music Computing Conf, Stockholm*, p. 74-79. ISBN 978-91-7501-831-7.
22. Lindborg PM (2013, July). "Skalldans, an audiovisual improvisation framework". *Proc Sound & Music Computing, Stockholm*, p. 415-418. ISBN 978-3-8325-3472-1.
23. Aw M, Lim CS & Lindborg PM (2013, July). "SmartDJ, An Interactive Music Player for Music Discovery by Similarity Comparison". *Proc Sound & Music Computing Conf*. p. 776-781. ISBN 978-3-8325-3472-1.
24. Lindborg PM (2013, June). "Physiological measures regress onto acoustic and perceptual features of soundscapes". *Proc Intl Conf Music Emotion. Jyväskylä. Luck & Brabant (Eds.)* ISBN 978-951-39-5250-1.

25. Lim MJY & Lindborg PM (2013, June). "How Much does Quality Cost? Listening to Music with Earphones on Buses and Trains". Proc Intl Conf Music Emotion. Jyväskylä. Luck & Brabant (Eds.) ISBN 978-951-39-5250-1.
26. Lindborg PM (2012, June). "Correlations Between Acoustic Features, Personality Traits and Perception of Soundscapes". Joint Proc Intl Conf Music Perception & Cognition with Conf European Soc Cognitive Sciences of Music, Thessaloniki. Cambouropoulos, Tsourgas, Mavromatis, Pasiadis (eds.), ISBN 960-99854-1-7.
27. Lindborg PM (2012, June). "How fun is this? A pilot questionnaire study to investigate visitors' experience of an interactive sound installation". Poster, Int Conf Music Perception & Cognition (ICMPC). Thessaloniki.
28. Lindborg PM & Koh JBT (2011, Aug). "Multidimensional spatial sound design for 'On the String'". Proceedings of the International Conference of Computer Music (ICMC), ISBN 978-0-9845274-0-3. University of Huddersfield, UK. July 2011.
29. Lindborg PM (2010). "Perception of emotion portrayal in cartoons by visually and aurally oriented people". Proc Intl Conf Music Perception and Cognition, Seattle. Demorest, Morrison, Campbell (eds). ISBN 1-876346-62-0.
30. Lindborg PM (2009, Mar.). "Singapore Voices: (re)(dis)covering the intergenerational distance". Conf American Comparative Literature Association, Harvard University, Cambridge.
31. Koh JBT & Lindborg PM (2008). "Project Time revisited: thoughts on skin therapy, urban planning and Singaporean Angst". Proc Intl Symp Electronic Art. ISBN 978-981-08-0768-9.
32. Lindborg PM (2007). "Preparing for TreeTorika: Computer-assisted analysis of Mao's oratory". Proc Sound & Music Computing Conference, Lefkada, Spyridis, Georgaki, Kouroupetroglou, Anagnostopoulou (eds). ISBN 978-960-6608-75-9.
33. Lindborg PM (2007, Dec). "Composers' Rights in a Digital World". Proc Conf on Intellectual Property and Copyrights in Music, Hanoi, Vietnam. Transposition and Vietnam Institute of Musicology. Chair: G Johnson.

Catalogues and essays

34. Lindborg PM (2010). "Virtual instruments and sonic space design". In On the String, Program Booklet. Koh JBT (ed), Singapore Arts Festival 2010.
35. Lindborg PM (2009). "Sound art and interactive design". In Singapore Voices, Exhibition Catalogue. NTU Art & Heritage Museum, Singapore.
36. Lindborg PM (2008). "Messiaen and the idea of joie parfaite." Messiaen Day 2008 Program Booklet, Koh JBT (ed), SOTA, Singapore.

Artwork, non-traditional research (selections)

Media art

37. Lindborg PM (2016-17). **Tuamotus Triptych** (Tepote, Fakarava, Makemo). Soundscape composition of underwater and air recordings from French Polynesia, on a Fellowship with The Current, TBA21. Exhibited at 'The Oceanic' exhibition at NTU-CCA, Gillman Barracks, Singapore, 9 December 2017 – 4 March 2018.
38. Belton D, Harrison D, Koh JBT, Lindborg PM et al. (2016-17). **AXIS, Anatomy of Space**. Dome projected dance art film with surround electroacoustic music, New Zealand & Singapore. With seed funding from Asia/New Zealand Co-Commissioning Fund (December 2015) and support from Otago Museum, The Arts House, and Goethe Institut. Showcases at Otago Planetarium, Dunedin, New Zealand, 20-26 March 2017. The Arts House, Singapore, 5-10 April 2017. ISEA Festival (jury selection), Colombia. 10-14 June 2017. Lindborg co-composed the electroacoustic music, recorded sonic material in field and studio, did surround sound design, and mastered production audio files in 5.1.
39. Lindborg PM (2016-17). **Pacific Belltower**. Surround sound installation for real-time sonification of Internet seismic data. System consisting of software retrieving earthquake data; sonification through physical modelling of virtual bells and spatialisation; four hyperdirectional loudspeakers; sound

reflecting off the walls. Showcases at YaleNUS, Singapore, 11-14 Nov. 2016, and Volume 2 Symposium, Aalto University, 22-25 November 2016. Official music selection for ICMC, exhibited 15-18 October 2017 at Xuhui Art Museum, Shanghai.

40. Lindborg PM (2014-15). **LW24**. Sculptural frontal auditory display. System consisting of 24 channels synchronised fixed-media playback devices, pre-amplification, amplification, audio cables, suspension strings, custom-built loudspeakers, and large portable grid structure. Mixed materials. Invited showcase at Beyond the horizon, ADM, May 2015. Official selection for the inaugural exhibition of National Gallery, Singapore, December 2015.
41. Lindborg PM, Koh, J.B.T & Yong, R.Z. (2011-13). **The Canopy**, Interactive sculptural 3D audiovisual installation. Supported by IMI Art & Technology Grant, NTU. Official jury selections at: ICMC 2011, Huddersfield and World Stage Design Festival 2013, Cardiff. Lindborg conceived the installation, programmed the software, and oversaw the technical-physical construction. <http://bit.ly/2gmJg53>
42. Lindborg PM & Koh JBT (2015, Aug). **When We Collide**. Generative surround sound installation. With additional audio material from Stromberg D, Fasciani S, Pertout A & Shin S. With support from National Art Council Art, Singapore (Arts Creation grant). ArtScience Museum, Singapore, 22-23 August 2015. Fixed-media surround Audio-DVD on BeeperDesign. Lindborg co-designed concept, prepared audio files, wrote the interactive software, and mastered 5.1 DVD.
43. Hausswolff, Carl Michael, Lindborg PM, Grönlund T, Harding M, Kirkegaard J, LaBelle B, Nilsen BJ, Nisunen P, Petursson F, Pomassl F, Tankred K, Thirwell J, Urstad M & Winderen J (2003-17). **Freq_Out** Series of site-specific collaborative sound installations. CDs, LP, print material published by Ash International, UK. <http://freq-out.org/>
44. Liong A, Koh, Koh JBT & Lindborg PM (2013). **Locust Wrath**. Multimedia performance (50 min.) with dance, surround sound, sculptures, and light. Commissioned and produced by ArtsFission Dance Company. Lindborg contributed to overall concept, wrote the sonification software, and designed the surround sound system. HeluTrans Gallery, Tanjong Pagar, Singapore 27-28 September 2013 (three performances).
45. Lindborg PM (2012-13). **Graviton Semantic**. Interactive 3D sound installation. State Theatre, Perth, Australia, 11-17 August 2013. Jury selection of ICMC.
46. Hausswolff, Lindborg, et al. (2012). **Freq_Out #8**. Sound installation at Moderna Museet Stockholm, commissioned by director D Birnbaum, curated by CM von Hauswolff, http://www.modernamuseet.se/stockholm/en/exhibitions/freq_out8/. Described as "the biggest composite piece of sound art ever exhibited in an art museum". Open as a 48-hour event, the installation was visited by thousands of people.
47. Lindborg PM, Lien L & Geistweidt J (2012). **TimeTravel - Tune In**. Networked audiovisual performance-installation (40 min. - indef.). With support from Lindborg's Tier 1 grant and commission from Arts Council Norway. Open rehearsal were conducted and the installation part was concluded with a live performance, connecting the Nordlys festival in Tromsø, Norway, with Innovation Centre Gallery in Singapore. Lindborg did main concept, composition, organisation, and co-designed the Internet audiovisual streaming protocol using Max and JackPilot. Featuring members from Arctic Sinfonietta (Norway) and Ding Yi Ensemble, Chan HY, Koh JBT & O'Dwyer T (Singapore). 30 January - 2 February 2012.
48. Lindborg PM (2010-12). **Graviton Dance**. Generative 3D sound composition. Concert, WoCMAT (Workshop on Computer Music and Audio Technology), National Chiao Tung University, Taiwan, 1 Dec. 2012.
49. Lindborg PM, Yong RZ, & Koh JBT (2010-11). **Walking Bach Slowly**. Sculptural 3D auditory display. System consisting of 12 channel playback for 3 custom-built 2dof swivel-mounted beam speakers and 9 regular loudspeakers, camera tracking system, cabling, custom-built large portable grid structure. Mixed materials. With funding from Lindborg's IMI grant. Lindborg conceived the design, programmed the software, and oversaw the technical-physical construction. Exhibited at IMI, NTU, February 2011.
50. Koh JB, Lindborg PM, Stromberg D, Chian KH & Lim WW (2010). **On the String**, theatre of music. Multimedia performance (60 min.). Commissioned by National Arts Council for Singapore Arts Festival. Lindborg co-conceived the performance, created sound art, interaction design, surround sound, and

designed the 3D multichannel live sound projection system. Esplanade Theatre, Singapore, 4-5 June 2010 (three performances).

51. Ng BC, Lindborg PM, Yuan J & Stulemeyer R (2009). **Singapore Voices**, eight sculptural audiovisual displays. Lindborg co-developed the concept, collected the recordings, and designed the sonic interaction. NTU, touring display at four different locations during eleven months, August 2009 - June 2010. Exhibited (one month) at Ngee An Polytechnic, August 2010.
52. Lindborg PM (1998-99, revised 2008). **Leçons pour un apprenti sourd–muët** for saxophonist & interactive computer. Creative project at IRCAM Cursus. First performance: V Davide, sax, & PM Lindborg. Then: Tim O'Dwyer & PM Lindborg, Inside Out Festival, SOTA, Singapore, 16+18 August 2008.
53. Lindborg PM (2007). **Le mammoth englouti**, quadrophonic audio with generative video. Jury selection at Bourges Festival of Electroacoustic Music (EMEB), France.
54. Lindborg PM (2006). **TuskExtraction, ConstipOrat**, audiovisual diptych. First performed at Belfort International Festival, France. Then at several occasions, incl. ACMP Concert, Seoul, 12 October 2017.
55. Coquempot M, Lindborg PM, K.622, et al. (2004). **La mer, le plateau**. Multimedia dance performance Commissioned by Le plateau, Paris, <http://bit.ly/1TqGuZV>
56. Coquempot M, Lindborg PM, K.622, et al. (2003). **Extra Quality #2**. Multimedia dance performance Commissioned by Centre George Pompidou for Festival Agora IRCAM, Paris, <http://www.ircam.fr>, <http://bit.ly/1ZtiWmz>.
57. Coquempot M, Lindborg PM, K.622, et al. (2002). **Extra Quality**. Multimedia dance performance Commissioned by MC93 Seine-Saint-Denis, Paris, <http://bit.ly/1TqGuZV>

Published scores (selection)

58. Lindborg PM (2007-8). **Man bör kalla saker vid deras rätta namn**, for ensemble and soundfiles. Published by MIC, Norway. Commissioned by Ultima Oslo Contemporary Music Festival and Transposition Norway-Vietnam Cultural Exchange. First performance: Ensemble Bit20 & J Stockhammer. Hochiminh City Conservatory, Vietnam, 4 Dec 2007. Then: YST Cons Contemporary Ensemble & Chan TL, Esplanade Theatre, Singapore, 6 April 2008; Chamber Orchestra of Lapland & J Storgårds. Rock Church, Helsinki, 17 October 2013. Official jury selection at Nordic Music Days.
59. Lindborg PM (2006). **TreeTorika** for saxophone and chamber orchestra. Published by MIC, Norway. Commissioned by Ultima Contemporary Music Festival, Norway, <http://ultima.no/>. Performed by Ensemble Ernst, T Rimul, & Lars Lien. <http://bit.ly/1OTtDvS>.
60. Lindborg PM (1994). **Glädjens jävla plikt**. Chamber opera (6 soloists, choir, 18 musicians) on own libretto based on Bodil Malmsten's book. Score published by MIC, Norway. Performed by Ingesunds Folkhögskola Ensemble & T Rimul, at Ingesund, Sweden, and at NMH, Norway.

Releases

61. Koh JBT, Fu M & Tan F, Lindborg PM (2011). "On the String". Monograph DVD of On the String. Theatre of Music. Multimedia performance. Lindborg made sound design, audio postproduction, and mastering for 5.1 surround sound DVD. Commissioned by ArtsAlive Collection, National Library Board, Singapore.
62. Hausswolff, Lindborg, et al. (2007). "Dreamlands Burn". CD and graphic print. In Catalogue for the Nordic Art Show 2006, Múcsarnok Kunsthalle, Budapest. ISBN 978-963-9506-15-2.
63. Lindborg PM (2005). "Bùgò Resonances". Composition for piano and electronics (CD). Commission and print publication, Associated Board Royal Schools of Music, UK, <http://bit.ly/1PE4BhA>.
64. Lindborg PM (2005). "Runs & Resonances" performed by Anders Kihlström, on "Solo", Daphne Records #1018, <http://www.daphne.se/solo>.
65. Hausswolff, Lindborg PM, Harding M, et al. (2005). "Freq_Out 2". CD on Ash International #6.8, UK. http://touchshop.org/product_info.php?products_id=9
66. Hausswolff, Lindborg PM, Harding M, et al. (2004). "Freq_Out". CD on Ash International #5.8, UK. http://touchshop.org/product_info.php?products_id=8

67. Lindborg PM (2002). "Bombastic Sonosofisms" performed by Frode Haltli, on "Looking on Darkness", ECM Records #1794, <http://bit.ly/2fVVzEZ>.

Software

68. Lindborg PM with Liu YD (2015). Locust Wrath, app for iOS. Apple iTunes. Lindborg conceived the software, and co-designed GUI and interaction logic. <http://apple.co/2fVh3Se>
69. Apopi Pte Ltd (Skoric M, Lindborg PM, Yong RZ) with Liu YD and Park L (2013). K-pop generator and K-pop generator Lite, apps for iOS. Apple iTunes. Lindborg contributed to concept, performed research and music information retrieval (MIR), and contributed to GUI design. <http://bit.ly/2y3Hpwg>
70. Lindborg PM (2010-2013). Various apps (Cycling '74 Max): Bark-Bands Calculator, Binaural Beats, Time-Level Trading, Masking Level Difference, TwiceAsLoud_StevensTest, Fletcher-Mundson Selftest, Clicks Perceptual Threshold, RoomAcousticsCalculator, RT6oestimator, TimeDelayGapTester, pm.Madde, VoiceRangeProfile etc. <http://bit.ly/2xs8btQ>

Other

71. Lindborg PM (2011, Jan.). "3D sound research: state of the art". Internal Report for the School of Art, Design, and Media, NTU. DOI: 10.13140/RG.2.1.1105.5447.
72. Lindborg PM (2011, Dec.) "Acoustic measurements of ICMG space at Innovation Centre with analysis and recommendations for fittings". DOI: 10.13140/RG.2.1.4251.2724.
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Grants, commissions (selection)

Principal Investigator

- 2017 (application pending) Siemens Foundation, Germany. 7,500 EUR. Commission and production support for NEW WORK for Berlin Piano Percussion Ensemble.
- 2017 Arts Council, Norway. 60,000 NOK. Commission and production support for NEW WORK for Lars Lien and Arctic Sinfonietta.
- 2016 ADM Creative Artist Exhibition Funding Assistance, NTU, 10,800 SGD. Partial funding for "Pacific Belltower", networked media installation, showcased in Singapore and Finland (2016), and China (ICMC 2017).
- 2012–16 MOE ARF Tier 1 research grant, 50,000 SGD. Expressivity Online: Designing Participatory Telematic Performance. Output includes telematic performance "Tune in", networked artwork "LWiOS", and paper in Proc ICAD 2015.
- 2015 CLASS grant, NTU, 12,000 SGD. Partial funding for "Si15 Soundislands Festival". Further funds and resources raised in collaboration with seven other organisations, including ArtScience Museum, Italian Cultural Centre, Bollywood Veggies, and National Art Councils of Singapore and New Zealand, totalling 45,000 SGD.
- 2013 CLASS grant, NTU, 10,150 SGD. "Si13 Soundislands Festival".
- 2009–12 MOE ARF Tier 1 research grant, 50,000 SGD. Output includes interactive spatialisation software for "On the String", and paper in Proc ICMC 2011.
- 2010 Seed grant, Institute for Media Innovation, NTU. 20,000 SGD. Output includes "The Canopy", interactive media installation, showcased at ICMC 2011, and WSD 2013.
- 2008 Seed grant, ADM, NTU. 8,760 SGD. Output includes "Metal.Blown", multimedia performance.
- 2007 Equipment support grant, TONO, Norway. 60,000 NOK.
- 2006 Commission, Ultima Contemporary Music Festival, Norway, <http://ultima.no/>. 80,000 NOK. Output includes "TreeTorika" for chamber orchestra, <http://bit.ly/1OTtDvS>.
- 2005 Commission, Shingle Church Music Festival, Finland. 15,000 EUR. Output includes "Mao-variations" for ensemble.

- 2005 Commission and print publication, Associated Board Royal Schools of Music, UK - <http://sg.abrsm.org/en/home>, 5,000 GBP. Output includes "Bùgò Resonances", <http://bit.ly/1PE4BhA>.
- 2004 Commission, Stockholm New Music Festival. Output includes "Bokstaven A" for Duo Ego.
- 2001 Commission, Ultima Contemporary Music Festival, Norway, <http://ultima.no/>. 65,000 NOK. Output includes "Gin/Gub" for cello, electronics, and chamber orchestra.
- 1999 Commission, Oslo Animation Festival, Norway. 30,000 NOK. Output includes "Tusalava" for sax and electronics.
- 1996 Commission, Norwegian Composer Fund, Norway, for Frode Haltli. 15,000 NOK. Output includes "Bombastic Sonosofisms" for accordion.
- 1996 Commission, Canada Art Council, for Marc Couroux. 5,000 CAD. Output includes "Runs & Resonances" for piano.

Co-Principal Investigator

- 2016 Arts Council of New Zealand, Co-Commissioning Fund. 91,457 NZD. "AXIS - Anatomy of Space". Belton D, Good Company Art (PI).
- 2012–16 Tier 2, MDA-NRF-IDMPO. 465,000 SGD. "Game Design for Entertainment". Chavez M (PI)
- 2015 Presentation and Promotion Grant, NAC. 10,000 SGD. "When We Collide". Koh JBT (PI)
- 2013–15 Tier 2, SUTD-NTU, MOE. "Combining Music Therapeutic Knowledge and the Science of Recovery in Game Design for Stroke Rehabilitation". Liu S (PI).
- 2013 NAC International Travel Grant. 5,000 SGD. "The Canopy, presentation". Koh JBT (PI)
- 2013 Singapore International Foundation. 5,000 SGD. "The Canopy, presentation". Koh JBT (PI)
- 2012–13 IDM Microfunding, Media Development Authority, Singapore. 50,000 SGD. "Asian Pop Music Generator – Mobile Phone Application". Skoric M (PI).
- 2010 Arts Creation Fund, NAC. 50,000 SGD. "Developing theatrical music". Koh JBT (PI)
- 2010 Singapore Arts Festival. 80,000 SGD. "On the String". Koh JBT (PI)

Entrepreneurial creation of public events

- 2017 "Si17 Soundislands Festival". Created and chaired international 6-day event in partnership with The Arts House. Presented sound artists, filmmakers, and scholars in a series of public events, and a retrospective exhibitions. <http://www.soundislands.com/si17/>.
- 2016 "Incomplete City Walks: Coffee Shops and Hawker Centres". Curated a structured sensory walk / soundwalk at Tiong Bahru Market, with 2 assistants and 15 participants (2016, Dec). NTU-CCA's public programme Incomplete Urbanism: Attempts of Critical Spatial Practice, <http://bit.ly/2fVJFLm> (2017, Jan).
- 2015 "Si15 Soundislands Festival", Created international 6-day event in partnership with ArtScience Museum and with support from eight other organisations, including NTU and ICMA. Chaired team of 5 collaborators and 20+ assistants. Presented 60+ artworks and papers at concerts, symposium, exhibitions, and workshops. Record visitor counts, both for CLASS-funded events (1255 pax) and for the series of ASM Sunday Showcases (515 pax). Featured scientists, artists, students, and poster names such as Ryoji Ikeda. <http://www.soundislands.com/si15/>.
- 2013 "Si13 Symposium on Sound & Interactivity". Created regional 3-day event presenting 15 artworks at concert and exhibition and 14 papers at symposium. Chaired international symposium with 29 active participants. <http://www.soundislands.com/si13/>.
- 2013 "Interactive Media Seminar". Created and organised event for 7 creative industry companies to meet students and faculty at ADM, 3 April 2013.
- 2009 "EU International Film Festival in Singapore". Curated an opportunity for ADM students to be featured at screenings. Selected and presented 11 films, 7-17 May 2009.
- 2008 "NTU-Sweden Interactive Workshop", committee member, Aug. - Sep. 2008.

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Graduate supervision, external examiner

- 2015–17 Main Supervisor, Master of Art by Research by Liew Kongmeng “Meaningful noise: Auditory roughness and Dissonance Predict Emotion Recognition and Cross-Modal Perception”, at Nanyang Technological University, Singapore. Liew is now pursuing doctoral studies in Kyoto.
- 2013 Assistant supervisor, Master of Science by Emma Frid (2013), project report “Restaurant Soundscapes in Stockholm”, at KTH Royal Institute of Technology, CSC/TMH. Main supervisor: A Friberg, examiner: S Ternström. Frid is now pursuing doctoral studies in Stockholm.
- 2016–17 External Examiner, Master of Philosophy. Thesis review & oral, School of Humanities (Music), Hong Kong University. Candidate Mike Yip. Thesis title: “The Contemporary Guitarscape”.
- 2014 External Examiner, Master of Philosophy. Thesis review & oral, School of Humanities (Music), Jan.-Mar. Hong Kong University. Candidate Fung Gordon Dic-Lun. Fung was the recipient of Singapore Chinese Orchestra competition 1st prize 2015.

Jury work

- 2017, Aug.-Oct. Chair, ICMA Music Awards. Organised committee work, shortlisted and selected the winners: three Region Awards, for Americas, Asia-Pacific, and Europe; and the Student Award. Announced at ICMC in Shanghai, China, <http://www.computermusic.org/page/3/> > Awards.
- 2016, June-Aug. Chair, ICMA Music Awards. Organised committee work, shortlisted and selected the winners: three Region Awards, for Americas, Asia-Pacific, and Europe; and the Student Award. Announced at ICMC in Netherlands, <http://www.computermusic.org/page/3/> > Awards.
- 2015, June-July Chair, ICMA Music Awards. Organised committee work, shortlisted and selected the winners: three Region Awards, for Americas, Asia-Pacific, and Europe; and the Student Award. Announced at ICMC in Denton, Texas, <http://www.computermusic.org/page/3/> > Awards.
- 2013, May Jury Member, Asian Composers League, ACL. <http://www.asiancomposersleague.com/> By invitation, around 30 electroacoustic music submissions.

Personal particulars

Address: 55 Hume Avenue 07-10, Singapore 598752.

Email: pm@permagnus.org

Civil status: Swedish citizen, born 1968. Married since 2000 with Dr Joyce Beetuan Koh. Their daughter, Älvi Weiyu, is born 2003.

Web pages

Web pages: <http://www.permagnus.org>

Links to projects and media works at Vimeo etc.: <http://www.permagnus.org/pm/cv/>

Soundislands Festival: <http://soundislands.com/>