

Curriculum Vitae • Kai Siedenburg

Work address:

Department of Medical Physics and Acoustics
Carl von Ossietzky University of Oldenburg
Küpkersweg 74, D-26129 Oldenburg
office phone: +49-441-798-3579

Home address:

Vorstr. 49, D-28359 Bremen
mobile phone: +49-178-7301546
kai.siedenburg@uni-oldenburg.de
<https://uol.de/en/music-perception>

Professional experience

- 02/ 2020–present **Carl von Ossietzky University of Oldenburg, Germany**
Principal investigator, Music Perception and Processing Lab
Freigeist Fellow, Volkswagen Foundation
- 01/ 2016–01/ 2020 **Carl von Ossietzky University of Oldenburg, Germany**
Postdoctoral fellow • Signal Processing Group (Prof. Simon Doclo)
- H2020 Marie Skłodowska-Curie individual postdoctoral fellow (2018–2020)
 - Carl von Ossietzky postdoctoral fellow (2017–2018)
 - H2020 Initial Training Network postdoctoral fellow (2016)
- 09/ 2012– 09/ 2015 **McGill University, Montreal, Canada**
Research assistant • Music Perception and Cognition Lab (Prof. Stephen McAdams)
- 02/ 2012–07/ 2012 **Austrian Research Institute for Artificial Intelligence, Vienna, Austria**
Research associate • Intelligent Music Processing Group (Prof. Gerhard Widmer)
- 10/ 2009–04/ 2011 **Technical University Berlin, Germany**
Research assistant • Audio Communication Group (Prof. Stefan Weinzierl)
- 06/ 2009–08/ 2009 **University of California at Berkeley, USA**
Research assistant • Center for New Music and Audio Technologies (Prof. David Wessel)
-

Education

- 09/ 2012–05/ 2016 **McGill University, Montreal, Canada**
PhD in Music Technology • Specialization: Music perception and cognition • Thesis: *Perspectives on memory for musical timbre* (*12/ 2015) • Advisor: Prof. Stephen McAdams
- 10/ 2005–01/ 2012 **Humboldt University Berlin, Germany**
MSc (*Diplom*) in Mathematics (major) and Musicology (minor) • grade: 1.3 – *very good*
Thesis: *Structured sparsity in time-frequency analysis* (*10/ 2011)
- 09/ 2008–08/ 2009 **University of California at Berkeley, USA**
Fulbright visiting student in Music and Mathematics • GPA: 3.8
- 09/ 2004–09/ 2005 **Studies in Jazz-Piano, Berlin, Germany**
- 07/ 2004 **Abitur** in Bremerhaven, Germany • grade: 1.0 – *excellent*
-

Fellowships & funding

2022–2026	Collaborative Research Centre (<i>Sonderforschungsbereich</i>), German Research Foundation (DFG) • Principal investigator in sub-project A6 (EUR 218,600) – <i>proposal under review</i>
2020–2025	Freigeist Fellowship , Volkswagen Foundation (EUR 1,177,500)
2018–2020	Marie Skłodowska-Curie Individual Postdoctoral Fellowship Reintegration Panel, European Commission H2020 (EUR 171,460)
2019	German Research Foundation (DFG) Scientific Conf. Grant (EUR 9,000)
2017–2018	Carl von Ossietzky Young Researchers' Fellowship Postdoctoral fellowship from the presidential chair (<i>Präsidium</i>) (EUR 213,000)
2017	German Research Foundation (DFG) Scientific Conf. Grant (EUR 9,900)
2014–2015	Québec Merit Scholarship for Foreign Students Ministère de l'Éducation, du Loisir et du Sport du Québec (CAD 41,000 + CAD 18,114)
2013–2015	Harman Scholar , Audio Engineering Society (AES) Educational Foundation (USD 10,000)
2013–2014	Doctoral Fellowship , Deutscher Akademischer Austauschdienst (DAAD) (EUR 9,549)
2012–2014	Auditory Cognitive Neuroscience Training Network Scholarship National Science and Engineering Research Council of Canada (NSERC) (CAD 42,000)
2012–2014	McGill University Graduate Excellence Fellowship (CAD 10,000)
2008–2009	Fulbright Scholar , J. William Fulbright Commission (USD 16,000)
2008–2009	Humboldt University Exchange Fellowship (Int. student tuition fee waiver for UC Berkeley, equivalent USD 28,000)
2005–2011	German National Academic Foundation

Awards and honors

2022–2027	Die Junge Akademie , Member
2020	Lothar-Cremer-Preis , German Acoustical Society (<i>Deutsche Gesellschaft für Akustik</i>): young scientist award for outstanding contributions to acoustics
2017	Best Paper Award (1st prize) 20th Int. Conf. on Digital Audio Effects (DAFX), Edinburgh, UK
2017–2019	Associated Hanse Fellow Hanse Wissenschaftskolleg Institute for Advanced Study, Delmenhorst, Germany.
2015	Dean's Essay Prize for excellence in music scholarship (2nd place) Schulich School of Music, McGill University
2013–2015	Travel awards - by SEMPRES for ICMPC 2014 in Seoul, South Korea - by IEEE for WASPAA 2013 in New Paltz, NY - by CIRMMT for SMPC 2015 in Nashville, TN - by McGill University for SMPC 2013 in Toronto, ON, Canada

Teaching

University of Oldenburg (as instructor):

- Seminars**
- **Psychoacoustics & computational hearing*** (5.04.4209), M.Sc. level, 2 SWS SS 2019
 - **Music perception and cognition** (5.04.4205), M.Sc. level, 2 SWS WS 2017–2018 • WS 2018–2019
- Lectures**
- **Auditory scene analysis in speech and music** (5.04.4218), M.Sc. level, 2 SWS WS 2021–2022 • WS 2020–2021 • WS 2019–2020
 - **Signals and systems*** (5.04.4701), B.Sc. level, 2 SWS WS 2020–2021 • WS 2019–2020 • WS 2018–2019

McGill University (as teaching assistant):

- **Digital audio signal processing** (MUMT501) • M.Sc. lecture, 2 SWS, Winter term 2014
- **Music perception and cognition** (MUMT250) • B.Sc. lecture, 2 SWS, Fall term 2013

* shared instructorship

Supervision

- PhD Students**
- Aravindan Benjamin, University of Oldenburg (12/ 2020–xx)
 - Robin Hake, University of Oldenburg (09/ 2020–xx)
 - Michel Bürgel, University of Oldenburg (02/ 2020–xx)
- M.Sc. Theses**
- Simon Jacobsen (Physics), Oldenburg (04/ 2021–04/ 2022)
 - Kirsten Goldmann (Hearing Technology & Audiology), Oldenburg (04/ 2019–01/ 2020)
 - Svea Elisabeth Steuer (Physics), Oldenburg (03–12/ 2019)
 - Josef Schröder (Hearing Technology & Audiology), Oldenburg (05/ 2018–04/ 2019)
[Thesis Award, European Association of Hearing Aid Acousticians, EUHA]
 - Saskia Röttges (Hearing Technology & Audiology), Oldenburg (03–10/ 2018)
- B.Sc. Theses**
- Karsten Gerdes (Physics), Oldenburg (04–10 2021)
 - Ninh Khang Nguyen (Physics, Technology, and Medicine), Oldenburg (04–09 2021)
 - Merle Schlender (Physics, Technology, and Medicine), Oldenburg (04–12 2020)
 - Feline Malin Barg (Physics, Technology, and Medicine), Oldenburg (04–12 2020)
 - Till Tätzler (Mathematics), Oldenburg (06–08/ 2019)
 - Shrinkhala Dawadi (Cognitive Science), McGill (09–12/ 2014)
 - Kiray Jones-Mollerup (Psychology), McGill (09/ 2013–05/ 2014)
- Res. Assistants**
- Anna Lena Knoll, Oldenburg (04/ 2021–12/ 2021) • Ghifar Aldebs, Oldenburg (03/ 2020–06/ 2021) • Johanna Rösch, Oldenburg (03/ 2020–09/ 2020) • Paulina Gramatowski, Oldenburg (03/ 2020–12/ 2020) • Daniel Kuhlmann, Oldenburg (03/ 2020–07/ 2020) • Michel Bürgel, Oldenburg (10/ 2019–12/ 2019) • Merle Schlender, Oldenburg (05/ 2019–present) • Theda Eichler, Oldenburg (10/ 2018–10/ 2019) • Saskia Röttkes, Oldenburg (04/ 2017–03/ 2018)
- Interns**
- Anna Lena Knoll (intern), MSc student in Neurocognitive Psychology (12/ 2020–03/ 2021) • Klara Schaefer (intern), high school student (02–03/ 2018) • Sébastien Lagarde (intern), student from Grenoble Tech. (05/–07/ 2017)

Reviewing

Perception	Psychological Science • Cognition • Scientific Reports • Frontiers in Neuroscience • Psychonomic Bulletin & Review • Quarterly Journal of Experimental Psychology • Psychology of Music • Music Perception • <i>Musicae Scientiæ</i> (editorial board member) • Auditory Perception & Cognition • Psychomusicology: Music, Mind, and Brain • Music & Science
Acoustics	The Journal of the Acoustical Society of America • The Journal of the Acoustical Society of America - Express Letters • Journal of the Audio Engineering Society • Acta Acustica united with Acustica • Canadian Acoustics
Audio proc.	IEEE Signal Processing Letters • IEEE Selected Topics in Signal Processing • IEEE Transactions on Audio, Speech, and Language Processing • EURASIP Journal on Advances in Signal Processing • EURASIP Journal on Audio Speech and Music Processing • Transactions of the International Society on Music Information Retrieval
Conferences	Sound and Music Computing Conf. (SMC) • IEEE Int. Conf. Acoustics Speech Signal Proc. (ICASSP) • IEEE Workshop on Appl Sig Proc to Audio Acoust (WASPAA) • European Signal Processing Conf. (EUSIPCO) • ITG Meeting on Speech Communication • Timbre2018 • Int. Conf. on Music Perception and Cognition (ICMPC) • Int. Conf. on Digital Audio Effects (DAFx) • Audio Eng Soc, Conf. Semantic Audio • Gesellschaft für Informatik
Grants	National Science Foundation (US) • Agence Nationale de la Recherche (France) • Tiroler Wissenschaftsförderung

Organization of events

10/ 2022	Hearing health and music symposium On-site symposium, organizer • Oct 6–7, 2022
09/ 2020	Timbre 2020 Virtual conference, co-organizer (with A. Zacharakis and C. Saitis) • Sep 3–4, 2020 310 registered participants
01/ 2020	Real-life auditory research workshop Organizer • Jan 31, 2020, Oldenburg University, 5 international talks
03/ 2019	International symposium on auditory scene analysis Organizer • Hanse-Wissenschaftskolleg Institute for Advanced Study, Delmenhorst, Germany, Mar 28–29, 2019 • funded by DFG
10/ 2018	ITG Meeting on Speech Communication Paper chair • University of Oldenburg, Oct 10–12, 2018
07/ 2018	Music Perception with Hearing Impairment Organizer • Special panel (3 speakers) • ICMPC, Graz, Austria, July 27, 2018
01/ 2017	Berlin Interdisciplinary Workshop on Timbre Co-organizer (with C. Saitis) • <i>Staatliches Institut für Musikforschung</i> , Berlin, Germany, Jan 12–13, 2017 • funded by DFG
08/ 2015	Perception and Cognition in Contemporary Music Co-organizer (with J. Noble) • Panel (6 speakers) at SMPC, 2015, Nashville, TN
09/ 2012–08/ 2015	Activities at Centre for Interdisc. Research in Music Media & Tech. (CIRMMT) <ul style="list-style-type: none">• <i>improv@CIRMMT</i>: Music concerts (2x/year) • Co-organizer (with O. Pelz)• Music cognition student colloquium (3x/year) • Organizer

Administration

2016–present	Academic board member , Dept. Medical Physics & Acoustics, University of Oldenburg
2019–2020	PhD Commission member (<i>Promotionsausschuss</i>), Faculty VI, University of Oldenburg
2019	W2 position hiring commission , University of Oldenburg
2013–2015	Student board member , CIRMMT Research Axis 3
2012–2013	Music Technology student representative , McGill University

Memberships

- Aural diversity network (UK), since 2021
 - Analysis, Creation, and Teaching of Orchestration (Actor Project, Canada), since 2021
 - Deutsche Gesellschaft für Musikpsychologie (DGM), since 2016
 - European Society for the Cognitive Sciences of Music (ESCOM), since 2015
 - Deutsche Gesellschaft für Akustik (DEGA), since 2018
 - Audio Engineering Society (AES), since 2013
-

Media coverage & outreach

2022	Collaboration with area <i>Mathematikdidaktik</i> at University of Bremen on module for teaching sound and mathematics for high-school students • MDR Wissen
2020	<i>Die Sendung mit der Maus zum Hören</i>
2019	NDR Info • NDR Hallo Niedersachsen • BdS Aktuell : Bund der Schwerhörigen Hamburg • UNI INFO (Oldenburg University) • UNI PRESSE (Oldenburg University) • Nordwest Zeitung
2018	audio infos • Nordwest Zeitung (print)
2017	Nordwest Zeitung • Diabolo Wochenzeitschrift • UNI INFO (Oldenburg University) • UNI PRESSE (Oldenburg University) • Click Magazin

Musical activities

2017–present	Double bass
2009–2011	Computer music studies with David Wessel and Ron Kuivila
2004–2009	Jazz-piano studies with Myra Melford, Frank Martin, Rolf Zielke, Volker Kottenhahn
2005–present	Concerts with Jazz, experimental music, and world music groups @ Résonance (Montreal), ZKM (Karlsruhe), B-Flat (Berlin), Akademie der Künste (Berlin), CNMAT (Berkeley), Yoshi's (Oakland), Die Glocke (Bremen)

List of publications

See [GoogleScholar profile](#) for citation statistics.

Journal articles (international & peer-reviewed)

21. K. Siedenburg (2022). Beyond (the cave of) loudness/pitch-equalization: A commentary on Reymore (2021). *Empirical Musicology Review*, in press
20. M. Bürgel, L. Picinali, K. Siedenburg (2021). Listening in the mix: Vocals robustly attract auditory attention in popular music. *Frontiers in Psychology*, doi: 10.3389/fpsyg.2021.769663
19. K. Siedenburg, F. M. Barg, H. Schepker (2021). Adaptative auditory brightness perception. *Scientific Reports*, 11(21456), <https://doi.org/10.1038/s41598-021-00707-7>
18. K. Siedenburg, S. Jacobsen, C. Reuter (2021). Spectral envelope position and shape in sustained instrument sounds. *The Journal of the Acoustical Society of America*, 149(6), 3715–3727, <https://doi.org/10.1121/10.0005088>
17. M. Touizrar, A.L. Knoll, K. Siedenburg (2021). Repetition and aesthetic judgment in post-tonal music for ensemble and large orchestra. *Frontiers in Psychology*, <https://doi.org/10.3389/fpsyg.2021.673706>
16. K. Siedenburg, K. Goldmann, S. van de Par (2021). Tracking musical voices in Bach's *The Art of the Fugue*: Timbral heterogeneity differentially affects younger normal-hearing listeners and older hearing-aid users. *Frontiers in Psychology*, 12(608684), <https://doi.org/10.3389/fpsyg.2021.608684>
15. C. Saitis & K. Siedenburg (2020). Brightness perception for musical instrument sounds: relation to timbre dissimilarity and source-cause categories. *The Journal of the Acoustical Society of America*, 148(4), 2256–2266, <https://doi.org/10.1121/10.0002275>
14. K. Siedenburg, S. Röttges, K. C. Wagener, V. Hohmann (2020). Can you hear out the melody? Testing musical scene perception in young normal-hearing and older hearing-impaired listeners. *Trends in Hearing*, 24, 1–15, <https://doi.org/10.1177/2331216520945826>
13. K. Siedenburg, M.R. Schädler, D. Hülsmeier (2019). Modeling the onset advantage in musical instrument identification. *The Journal of the Acoustical Society of America*, 146(6), EL523–EL529, <https://doi.org/10.1121/1.5141369>
12. B. Cauchi, K. Siedenburg, J. F. Santos, T. H. Falk, S. Doclo, S. Goetze (2019). Non-intrusive speech quality prediction using modulation energies and LSTM-network. *IEEE Transactions on Audio, Speech, and Language Processing*, 27(7), 1151–1163, <https://doi.org/10.1109/TASLP.2019.2912123>
11. K. Siedenburg (2019). Specifying the relevance of onset transients in musical instrument identification. *The Journal of the Acoustical Society of America*, 145(2), 1078–1087, <https://doi.org/10.1121/1.5091778>
10. K. Siedenburg (2018). Timbral Shepard-illusion reveals perceptual ambiguity and context sensitivity of brightness perception. *The Journal of the Acoustical Society of America*, 143(2), EL-00691, <https://doi.org/10.1121/1.5022983>
9. K. Siedenburg & S. McAdams (2018). Short-term recognition of timbre sequences: Musical training, pitch variability, and timbral similarity. *Music Perception*, 36(6), 24–39, <https://doi.org/10.1525/mp.2018.36.1.24>
8. K. Siedenburg & D. Müllensiefen (2017). Modeling timbre similarity of short music clips. *Frontiers in Psychology (Cognition)*, 8:639, <https://doi.org/10.3389/fpsyg.2017.00639>
7. K. Siedenburg & S. McAdams (2017). Four conceptual distinctions for the auditory ‘wastebasket’ of timbre. *Frontiers in Psychology (Auditory Cognitive Neuroscience)*, 8:1747, <https://doi.org/10.3389/fpsyg.2017.01747>

6. K. Siedenburg & S. McAdams (2017). The role of long-term familiarity and attentional maintenance in short-term recognition of musical timbre. *Memory*, 25(4), 550–564, <https://doi.org/10.1080/09658211.2016.1197945>
5. K. Siedenburg, S. Mativetsky, S. McAdams (2016). Auditory and verbal memory in North Indian tabla drumming. *Psychomusicology: Music, Mind, and Brain*, 26 (4), 327–336, <https://doi.org/10.1037/pmu0000163>
4. K. Siedenburg, K. Jones-Mollerup, S. McAdams (2016). Acoustic and categorical dissimilarity of musical timbre: Evidence from asymmetries between acoustic and chimeric sounds. *Frontiers in Psychology (Auditory Cognitive Neuroscience)*, 6:1977, <https://doi.org/10.3389/fpsyg.2015.01977>
3. K. Siedenburg, I. Fujinaga, S. McAdams (2016). A Comparison of Approaches to Timbre Descriptors in Music Information Retrieval and Music Psychology. *Journal of New Music Research*, 45(1), 27–41, <https://doi.org/10.1080/09298215.2015.1132737>
2. M. Kowalski, K. Siedenburg, M. Dörfler (2013). Social Sparsity! Neighborhood Structures Enrich Structured Shrinkage Operators. *IEEE Transactions on Signal Processing*, 61(10), 2498–2511, <https://doi.org/10.1109/TSP.2013.2250967>
1. K. Siedenburg & M. Dörfler (2013). Persistent Time-Frequency Shrinkage for Audio Denoising. *Journal of the Audio Engineering Society (AES)*, No. 61 (1/2), 29–38, <http://www.aes.org/e-lib/browse.cfm?elib=16665>

Articles/chapters under review / in preparation

- K. Siedenburg, J. Graves, D. Pressnitzer (in prep.). A unitary model of frequency change perception
- M. Bürgel & K. Siedenburg (in prep.). Autotune kills the radiostar: Micromodulations enhance vocal salience in popular music
- A. L. Knoll & K. Siedenburg (in prep.). Preference for levels of the lead-voice in a diverse sample of listeners.
- K. Gerdes & K. Siedenburg (in prep.). An analysis of lead vocal levels since 1945 and across genres of popular music.
- C. Saitis & K. Siedenburg (in prep.). Hearing Brightness: A Ubiquitous Attribute of Musical Sound? *The Oxford Handbook of Orchestration Studies*

Books

1. K. Siedenburg, C. Saitis, S. McAdams, A. Popper, R. Fay (2019). *Timbre: Acoustics, Perception, and Cognition*. Springer Handbook of Auditory Research Series, New York, NY: Springer, <https://doi.org/10.1007/978-3-030-14832-4>

Book chapters

5. K. Siedenburg & D. Müllensiefen (2019). Memory for timbre. In K. Siedenburg, C. Saitis, S. McAdams, A. Popper, R. Fay, *Timbre: Acoustics, Perception, and Cognition* (Springer Handbook of Auditory Research Series). New York, NY: Springer, https://doi.org/10.1007/978-3-030-14832-4_4
4. M. Caetano, C. Saitis, K. Siedenburg (2019). Audio content descriptors for timbre. In K. Siedenburg, C. Saitis, S. McAdams, A. Popper, R. Fay, *Timbre: Acoustics, Perception, and Cognition* (Springer Handbook of Auditory Research Series). New York, NY: Springer, https://doi.org/10.1007/978-3-030-14832-4_11
3. K. Siedenburg, C. Saitis, S. McAdams (2019). The present, past, and future of timbre research. In K. Siedenburg, C. Saitis, S. McAdams, A. Popper, R. Fay, *Timbre: Acoustics, Perception, and Cognition* (Springer Handbook of Auditory Research Series). New York, NY: Springer, https://doi.org/10.1007/978-3-030-14832-4_1

2. S. McAdams & K. Siedenburg (2019). Perception and cognition of musical timbre. In P. J. Rentfrow & D. J. Levitin (Eds.), *Foundations in Music Psychology: Theory and Research*. Cambridge, MA: MIT Press
1. K. Siedenburg (2017). Instruments unheard of: On the role of familiarity and sound source categories in timbre perception. In T. Bovermann, A. de Campo, H. Egermann, S. Indriyati-Hardjowirogo, and S. Weinzierl (Eds.), *Musical Instruments in the 21st Century: Identities, Configurations, Practices* (pp. 385-396). Heidelberg, Germany: Springer

Other articles

1. K. Siedenburg (2020). Die Farbe macht die Musik: Akustische und perzeptuelle Grundlagen der Klangfarbenwahrnehmung. *Akustik Journal*. 3/20, 27–39

Conference proceedings (full-length peer reviewed)

8. K. Siedenburg & S. Doclo (2017). Iterative structured shrinkage algorithms for stationary/transient audio separation. *20th Int. Conf. on Digital Audio Effects (DAFx-17)*, Edinburgh, UK, Sep 5–8, 2017 [**Best Paper Award**]
7. B. Cauchi, J. F. Santos, K. Siedenburg, T. H. Falk, P. A. Naylor, S. Doclo and S. Goetze (2016). Predicting the quality of processed speech by combining modulation based features and model-trees. *Proc. of the 2016 ITG Conf. on Speech Communication*, Paderborn, Germany, Oct 5–7, 2016
6. K. Siedenburg, M. Dörfler, M. Kowalski (2014). Audio Declipping with Social Sparsity. *Proc. of the 2014 IEEE Int. Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, Florence, Italy, May 4–8, 2014
5. K. Siedenburg & P. Depalle (2013). Modulation Filtering for Structured Time-Frequency Estimation of Audio Signals. *Proc. of the IEEE Workshop on Applications of Signal Processing to Audio and Acoustics*, New Paltz NY, USA, Oct 20–23, 2013
4. K. Siedenburg (2012). Persistent Empirical Wiener Estimation with Adaptive Threshold Selection for Audio Denoising. *Proc. of the 9th Sound and Music Computing Conf.*, Copenhagen, Denmark, Jul 11–14, 2012
3. K. Siedenburg & M. Dörfler (2012). Audio Denoising by Generalized Time-Frequency Thresholding. *Proc. of the AES 45th Conf. on Applications of Time-Frequency Processing in Audio*, Helsinki, Finland, Mar 1–3, 2012
2. K. Siedenburg & M. Dörfler (2011). Structured Sparsity for Audio Signals. *Proc. of the 14th Int. Conf. on Digital Audio Effects, DAFx-11*, Paris, France, Sep 2–9, 2011
1. K. Siedenburg (2009). An Exploration of Real-Time Visualizations of Musical Timbre. *Proc. of the 3rd Int. Workshop on Learning Semantics of Audio Signals*, Graz, Austria, Dec 1, 2009

Conference contributions

43. K. Siedenburg & S. Jacobsen (2022). Congruency of fundamental frequency and spectral envelope in auditory scene analysis. *International Symposium on Hearing*, Lyon, June 20-24, 2022
42. M. Bürgel, J. Rösch, L. Picinali, K. Siedenburg (2021). Listening in the mix: Lead vocals robustly attract auditory attention in popular music. *ICMPC/ESCOM*, Jul 28–31, 2021.
41. R. Hake, M. Bürgel, D. Müllensiefen, K. Siedenburg (2021). Development of an adaptive test of musical scene analysis ability. *ICMPC/ESCOM*, Jul 28–31, 2021.
40. K. Siedenburg, K. Goldmann, S. van de Par (2021). Musical scene analysis in Bach's *The Art of the Fugue*: Timbral heterogeneity differentially affects younger normal-hearing listeners and older hearing-aid users. *ICMPC/ESCOM*, Jul 28–31, 2021.
39. A. Benjamin, K. Siedenburg (2021). Objective evaluation of spectral sparsity introduced by professional audio mixing practices in multi-track mixes. *Jahrestagung der deutschen Gesellschaft für Akustik*, Wien, Aug 16–19, 2021
38. M. Schlender, K. Siedenburg, S. Uppenkamp (2021). Einfluss spektraler Merkmale auf die Erkennung von Instrumental- und Vokallängen. *Jahrestagung der deutschen Gesellschaft für Akustik*, Wien, Aug 16–19, 2021

37. F. M. Barg, K. Siedenburg, H. Schepker (2021). Adaption der auditiven Helligkeitswahrnehmung bei Hearables. *Jahrestagung der deutschen Gesellschaft für Akustik*, Wien, Aug 16–19, 2021
36. S. Jacobsen, K. Siedenburg (2021). Modellierung spektraler Hüllkurven von nicht perkussiven Instrumentenklängen in Bezug auf die Grundfrequenz. *Jahrestagung der deutschen Gesellschaft für Akustik*, Wien, Aug 16–19, 2021
35. M. Touizrar & K. Siedenburg (2020): The medium is the message: Questioning the necessity of a syntax for timbre. *Timbre 2020: Virtual Conference*, Sep 3–4, 2020.
34. K. Siedenburg (2020): Mapping the interrelation between spectral centroid and fundamental frequency for orchestral instrument sounds. *Timbre 2020: Virtual Conference*, Sep 3–4, 2020.
33. M. Bürgel, L. Picinali, K. Siedenburg (2020): Characterizing acoustical cues for lead voice segregation in popular music. *Jahrestagung der deutschen Gesellschaft für Akustik*, Hannover, Mar 16–19, 2020
32. K. Siedenburg (2020). Mapping the relation between spectral envelope and fundamental frequency in a large set of acoustical instrument sounds. *Jahrestagung der deutschen Gesellschaft für Akustik*, Hannover, Mar 16–19, 2020
31. K. Goldmann, S. van de Par, K. Siedenburg (2020): Einfluss von Hörverlust auf die Heraushörbarkeit von Instrumenten in polyphoner Musik. *Jahrestagung der deutschen Gesellschaft für Akustik*, Hannover, Mar 16–19, 2020
30. S. Steuer, S. Uppenkamp, K. Siedenburg (2020). Voice-processing Advantage in Timbre Recognition: Analysis of Response Times. *Jahrestagung der deutschen Gesellschaft für Akustik*, Hannover, Mar 16–19, 2020
29. C. Saitis, K. Siedenburg, C. Reuter (2019). Revisiting timbral brightness perception *Society for Music Perception and Cognition Meeting*, New York, USA, Aug 5–7, 2019
28. C. Saitis, K. Siedenburg, P. Schuladen, C. Reuter (2019). The Role of Attack Transients in Timbral Brightness Perception. *International Congress on Acoustics*, Aachen, Germany, Sep 9–13, 2019
27. K. Siedenburg, S. Röttges, K. Wagener, V. Hohmann (2019). Musical scene analysis of hearing-impaired and normal- hearing listeners: a melody and instrument matching task. *International Congress on Acoustics*, Aachen, Germany, Sep 9–13, 2019
26. K. Siedenburg, M. R. Schädler, D. Hülsmeier (2019). Assessing the role of onsets for musical instrument identification in an auditory modeling framework. *International Congress on Acoustics*, Aachen, Germany, Sep 9–13, 2019
25. K. Siedenburg & H. Schepker (2019). Auditory Adaptation to Spectral Slope. *International Symposium on Auditory and Audiological Research (ISAAR)*, Nyborg, DK, 21–23 Aug, 2019
24. K. Siedenburg (2019). Hearing impairment and musical scene analysis: testing instrument and melody discrimination of normal and hearing-impaired listeners. *46. Erlangerer Kolloquium*, Erlangen, Germany, Feb 22, 2019
23. K. Siedenburg (2018). Musikwahrnehmung mit Schwerhörigkeit: Die Rolle Auditorischer Szenenanalyse. *Jahrestagung der Deutschen Gesellschaft für Musikpsychologie (DGM)*, Gießen, Germany, Sep 7-9, 2018
22. C. Saitis & K. Siedenburg (2018). Brightness perception in musical instrument sounds. *Jahrestagung der Deutschen Gesellschaft für Musikpsychologie (DGM)*, Gießen, Germany, Sep 7-9, 2018
21. K. Siedenburg (2018). Musical scene analysis of normal and hearing-impaired listeners: Instrument identification with concurrent context tones *Proc. of the 14th Int. Conf. on Music Perception and Cognition (ICMPC)*, Graz, Jul 23–27, 2018
20. K. Siedenburg (2018). Testing relative perception and context-sensitivity of timbral brightness. *Proc. of Timbre2018*, Montreal, Jul 5–7, 2018
19. C. Saitis & K. Siedenburg (2018). Exploring the role of source-cause categories in timbral brightness perception. *Proc. of Timbre2018*, Montreal, Jul 5–7, 2018
18. K. Siedenburg (2018). Die Rolle des Kontextes in einer Shepard Illusion für Klangfarbe. *Proc. of DAGA*, Jahrestagung der Gesellschaft für Akustik, Munich, Germany, Mar 20–22, 2018
17. K. Siedenburg (2017). Auditory scene ambiguity and the impact of prior context: the case of timbre. Workshop *Signal and Noise along the Auditory Pathway (SNAP)*. University of Lübeck, Germany, Dec 8–9, 2017
16. K. Siedenburg (2017). Testing the importance of attack transients for musical instrument identification. *Jahrestagung der Deutschen Gesellschaft für Musikpsychologie (DGM)*, Hamburg, Germany, Sep 13–15, 2017
15. K. Siedenburg & D. Müllensiefen (2017). Modeling timbre similarity of short music clips. *Meeting of the European Society for Cognitive Sciences Of Music (ESCOM)*, Ghent, Belgium, Jul 31 – Aug 4, 2017
14. K. Siedenburg, K. Jones-Mollerup, S. McAdams (2016). Acoustic and categorical facets of timbre dissimilarity. *Jahrestagung der Deutschen Gesellschaft für Musikpsychologie (DGM)*, Vienna, Austria, Sep 9–11, 2016
13. K. Siedenburg, S. Mativetsky, S. McAdams (2015). To Bol or Not to Bol: Verbal and Auditory Memory in Tabla Instruction. *Int. Symposium Learning and Teaching Music in the Twenty First Century: The Contribution of Science and Technology (LTM21/AEM21)*, Montreal, Canada, Nov 5–7, 2015
12. K. Siedenburg, N. Kim, S. Dawadi, S. Mcadams (2015). Sounds unheard of: Familiarity and source identification in memory for musical timbre. *Proc. of the Society for Music Perception and Cognition (SMPC)*, Nashville, TN, USA, Aug 1–5, 2015
11. K. Siedenburg, S. Mativetsky, S. Mcadams (2015). Verbal and auditory memory in North-Indian tabla. *Proc. of the Society for Music Perception and Cognition (SMPC)*, Nashville, TN, USA, Aug 1–5, 2015

10. K. Siedenburg, I. Fujinaga, S. McAdams (2014). Technologies of Timbre: On Audio Features and Evaluation in Interdisciplinary Music Research. *Proc. of the 9th Conf. on Interdisciplinary Musicology (CIM14)*, Berlin, Germany, Dec 4–6, 2014
9. K. Siedenburg, I. Fujinaga, S. McAdams (2014). Clash of cultures? On audio features for timbre in music information research and music psychology. *4th Annual Seminar on Cognitively based Music Informatics Research (CogMIR)*, Ryerson University, Toronto, Oct 4, 2014
8. K. Siedenburg & S. McAdams (2014). Context Effects in the Cognitive Sequencing of Musical Timbre”. *Proc. of the 13th Int. Conf. on Music Perception and Cognition (ICMPC)*, Seoul, South Korea, Aug 4–8, 2014
7. K. Siedenburg, S. McAdams, P. Janata (2014). Outside the Phonological Loop? Serial Order and Similarity in Working Memory for Timbre. *Proc. of the 13th Int. Conf. on Music Perception and Cognition (ICMPC)*, Seoul, South Korea, Aug 4–8, 2014
6. K. Siedenburg, K. Jones-Mollerup, S. McAdams (2014). Instruments Unheard Of: The Role of Long-Term Memory in Musical Timbre Perception. *Fifth Int. Symposium on Music/Sonic Art: Practices and Theories (MuSA)*, Karlsruhe, Germany, Jun 26–29, 2014
5. K. Siedenburg & Stephen McAdams (2013). Characterizing Short-Term Memory for Sequences of Musical Timbre. *NeuroMusic Conf.: Modeling the Musical Experience*. Hamilton, Canada, Nov 23, 2013
4. K. Siedenburg & S. McAdams (2013). Short-Term Memory for Serial Order of Timbre. *Proc. of the Society for Music Perception and Cognition (SMPC)*, Toronto, Canada, August 8–11, 2013
3. K. Siedenburg, M. Dörfler, M. Kowalski (2013). Audio Inpainting with Social Sparsity. *Proc. of SPARS*, Lausanne, Switzerland, Jul 8–11, 2013
2. K. Siedenburg & C. Reuter (2012). Beyond Helmholtz: 150 Years of Timbral Paradigms. *Proc. of the 12th Int. Conf. on Music Perception and Cognition (ICMPC)*, Thessaloniki, Greece, Jul 23–28, 2012
1. K. Siedenburg (2011). Approaching Granular Synthesis Feedback. *Proc. of the Xenakis Int. Symposium*, London, UK, Apr 5–6, 2011

Software

2. P. Sondergaard, P. Balazs, M. Dörfler, N. Holighaus, F. Jaillet, N. Perraudin, Z. Prusa, K. Siedenburg, B. Torresani, and C. Wiesmeyer (2015). *The Large Time Frequency Analysis Toolbox (LTFAT) Reference Manual*. <http://ltfat.github.io/doc/ltfat.pdf>
1. K. Siedenburg & M. Dörfler (2012). *StrucAudio: A Matlab Toolbox for Structured Sparse Representation of Audio Signals*. <http://homepage.univie.ac.at/monika.doerfler/StrucAudio.html>

Theses

- K. Siedenburg (2016). *Perspectives on Memory for Musical Timbre*. Doctoral dissertation. Music Technology Area, Department for Music Research, McGill University
- K. Siedenburg (2012). *Structured Sparsity in Time-Frequency Analysis*. Masters thesis (*Diplomarbeit*). Department of Mathematics, Humboldt University Berlin

Invited talks

13. Mathematik in der musikalischen Akustik *Zukunftsfeld Mathematik*, Universität Bremen, Sep 29, 2021
12. Analyzing spectral envelope position and shape in a large set of sustained musical instrument sounds. *Acoustical Society of America Spring 2021 Meeting* (invited presentation), June 9, 2021
11. Die Farbe macht die Musik: Akustische und perzeptuelle Merkmale der Klangfarbenwahrnehmung. *DAGA-Symposium*, Plenarvortrag im Rahmen der Verleihung des Lothar-Cremer Preises, Sep 25, 2020
10. Auditory scene ambiguity for pitch and timbre: same or different? *Universität Lübeck*, May 10, 2019
9. Spectral and temporal aspects of timbre perception. *Ecole Normale Supérieure*, Paris, Jan 17, 2019
8. Music and hearing loss (*Musik und Schwerhörigkeit*). *Schlaues Haus*, Oldenburg, Dec 6, 2018
7. Conceptual and empirical perspectives on the “wastebasket” of timbre. *C4DM Seminar*, Center for Digital Music, Queen Mary University of London, Sep 13, 2017

6. Instruments unheard of: Familiarity and sound source categories in timbre perception. Symposium *Musical Instruments in the 21st Century—Identities, Configurations, Practices*. Designtransfer Berlin, Oct 15, 2016
 5. Culture Clash? On Audio Features in MIR and Music Psychology. *Workshop on Digital Musicology*, Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Mar 20, 2015
 4. On Memory for Musical Timbre. *Forschungskolloquium*, Audio Communication Group, Technical University Berlin, Jul 8, 2014
 3. Characterizing Short-Term Memory for Musical Timbre. *Redwood Seminar*, Redwood Center for Theoretical Neuroscience, University of California, Berkeley, Dec 11, 2013
 2. Structured Shrinkage from an Audio Processing Perspective. Workshop *Modern Methods of Time-Frequency Analysis*, Erich Schroedinger Int. Institute for Mathematical Physics, Vienna, Dec 5, 2012
 1. K. Siedenburg (2012). A Structured Sparse Approach to Audio Denoising. *C4DM Seminar*, Center for Digital Music, Queen Mary University of London, Jun 13 2012
-

Last updated: 28. April 2022