

DAN BOWLING, Ph.D.

– CURRICULUM VITAE –

Department of Psychiatry and Behavioral Sciences
Stanford University School of Medicine
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EDUCATION

Neurobiology, Ph.D. Duke University Advisor: Prof. Dale Purves	2008 – 2012
Biological Psychology, B.S. (<i>Summa Cum Laude</i>) University of California at San Diego	2002 – 2006
Neuro-Philosophy, B.A. (<i>Summa Cum Laude</i>) University of California at San Diego Advisor: Prof. Patricia Churchland	2002 – 2006
Cognitive Neuroscience, Certificate. Duke University	2007 – 2008
Translation Medicine, Certificate. Eureka Institute	2019

RESEARCH POSITIONS

Instructor Department of Psychiatry and Behavioral Sciences Stanford University Faculty Mentor: Prof. Karen Parker	December 2018 – Present
Lisa Meitner Research Fellow Department of Cognitive Biology University of Vienna, Austria	April 2015 – October 2018
Postdoctoral Researcher Department of Cognitive Biology University of Vienna, Austria Adviser: Prof. Tecumseh Fitch	July 2012 – Mar 2015

FUNDING

Submitted

Principal Investigator Standardized Music Medicine for Depression (STAMM-D): Development & Feasibility. NICCH R34
Stanford, CA. (2024-2027)
(Submitted 10/20/2023, Grants.gov Tracking# GRANT14003964)

Current

Principal Investigator Advancing Assessment of Auditory-Vocal Affect in Autism with Speech and Music. NIMH K01MH122730.
Stanford, CA. (2020-2024)
(Impact score 21, funded on first submission)

Completed

Lead Investigator Quantifying Auditory-Vocal Affect in Human Social Communication. Wu Tsai Neurosciences Institute Seed Grant.
Stanford, CA. (2019-2022)
(Selected as 1 of 6 from 44 applications submitted by Stanford faculty)

Principal Investigator The Biology of Music: Perceiving and Participating in Synchrony. Austrian Science Fund Lisa Meitner Fellowship M1773B24
Vienna, Austria. (2015-2017)

Principal Investigator The Biology of Synchronous Behavior
University of Vienna Emerging Field Award,
Vienna, Austria. (2014-2016)

PEER-REVIEWED PUBLICATIONS

*(40 total, 23 first author, 8 sole author; * = corresponding, † = co-first author; annotations in gray describe my contribution to publications on which I am a middle author or co-first author)*

Empirical

1. Noufi C*, Berger J, Parker KJ, & Bowling DL. Acoustically-Driven Phoneme Removal that Preserves Vocal Affective Cues. *Proceedings of ICASSP 2023 – 2023 IEEE International Conference on Acoustic, Speech and Signal Processing*, Rhodes Island, Greece, pp. 1-5.
2. Bowling DL*, Gahr J, Graf Ancochea P, Hoeschele M, Canoine V, Fusani L, & Fitch WT. (2022). Endogenous Oxytocin, Cortisol, and Testosterone in Response to Group Singing. *Hormones and Behavior*, 139:105105
3. Lesch R*, Schwaha T, Orozco A, Shilling M, Brunelli S, Hofer M, Bowling DL, Zimmerberg B, & Fitch WT. (2021). Selection on Vocal Output Affects Laryngeal Morphology in Rats. *Journal of Anatomy*, 00:1-12.

-Supervision, editing.

4. Bowling DL[†], Dunn JC[†], Smaers JB, Garcia M, Sato A, Hantke G, Handschuh S, Dengg S, Kerney M, & Kitchener AC, Gumpenberger M, & Fitch WT. (2020). Rapid Evolution of the Primate Larynx? *PLoS Biology*, 18:e30000764

-Design, data collection, data analysis, writing, and editing; co-first author JCD conducted a key phylogenetic analysis.

5. Wagner B*, Bowling DL, & Hoeschele M. (2020) Is Consonance Attractive to Budgerigars? No Evidence From a Place Preference Study. *Animal Cognition*, 23:973-987.

-Design, data collection, data analysis, editing.

6. Bowling DL[†], Graf Ancochea P[†], Hove MJ, & Fitch WT. (2019). Pupillometry of Groove: Evidence for Noradrenergic Arousal in the Link Between Music and Movement. *Frontiers in Neuroscience*, 12:1039.

-Design, programming, supervision, writing, editing; co-first author PGA collected and analyzed the data.

7. Fritz TH*, Bowling DL, Contier O, Grant J, Schneider L, Lederer A, Höer F, Busch E & Villringer A. (2018). Musical Agency During Physical Exercise Decreases Pain During Sports Exercise. *Frontiers in Psychology*, 8:2312.

-Data analysis, writing, and editing.

8. Congdon JV*, Hahn, AH, Filippi P, Campbell KA, Hoang J, Scully EN, Bowling DL, Reber SA, Sturdy CB. (2019) Hear Them Roar: A Comparison of Black-capped Chickadee and Human Perception of Arousal in Vocalizations Across All Classes of Terrestrial Vertebrates. *Journal of Comparative Psychology*, 133:520-541.

-Design, stimuli, editing.

9. Bowling DL^{*}, Purves D, & Gill KZ. (2018). Vocal Similarity Predicts the Relative Attraction of Musical Chords. *Proceedings of the National Academy of Sciences USA*, 115:216-221.

10. Garcia M*, Herbst CT, Bowling DL, Dunn JC & Fitch WT*. (2017). Acoustic Allometry Revisited: Morphological Determinates of Fundamental Frequency in Primate Vocal Production. *Scientific Reports*, 7:10450.

-Data collection, supervision, editing.

11. Filippi P*, Congdon JV, Hoang J, Bowling DL, Reber SA, Pašukonis A, Hoeschele M, Ocklenburg S., de Boer B, Sturdy CB, Newen A & Güntürkün O. (2017). Humans Recognize Emotional Arousal in Vocalizations Across All Classes of Terrestrial Vertebrates: Evidence for Acoustic Universals. *Proceedings of the Royal Society B*, 284: 20170990.

-Design, stimuli, editing.

12. Bowling DL*, Garcia M, Dunn J, Ruprecht A... & Fitch WT. (2017). Body Size and Vocalization in Primates and Carnivores. *Scientific Reports*, 41070.

13. Herbst CT*, Schutte HK, Bowling DL, & Svec JG. (2017). Comparing Chalk With Cheese-The Electroglottographic Contact Quotient is Only a Limited Surrogate of the Closed Quotient. *Journal of Voice*, 31:401-409.

-Design, editing.

14. Fillipi P*, Ocklenburg S, Bowling DL*, Heege L, Güntürkün O, Newen A & de Boer B. (2016). More than Words (and Faces): Evidence for a Stroop Effect of Prosody in Emotion Word Processing. *Cognition and Emotion*, 31:879-891.

-Design, writing, editing.

15. Garcia M*, Gingras B, Bowling DL, Herbst C ... & Fitch WT*. (2016). Structural Classification of Wild Boar (*Sus scrofa*) Vocalizations. *Ethology*, 122: 329-342.

-Design, supervision, data analysis, editing.

16. Hoeschele M & Bowling DL*. (2016). Sex Differences in Rhythmic Preferences in the Budgerigar (*Melopsittacus undulatus*): A Comparative Study with Humans. *Frontiers in Psychology*, 7:1543.

17. Bowling DL*, Gingras B, Han S, Sundararajan J & Opitz ECL. (2013). Tone of Voice in Emotional Expression: Relevance for the Affective Character of Musical Mode. *Journal of Interdisciplinary Music Studies*, 7:29-44.

18. Bowling DL*, Herbst CT & Fitch WT. (2013). Social Origins of Rhythm? Synchrony and Temporal Regularity in Human Vocalization. *PLoS ONE*, 8: e80402.

19. Carter RM, Bowling DL, Reeck C, & Huettel SA*. (2012). A Distinct Role of the Temporal-Parietal Junction in Predicting Socially Guided Decisions. *Science*, 337: 109-111.

-Design, programming, data collection, and editing.

20. Bowling DL*, Sundararajan J, Han S, & Purves D. (2012). Expression of Emotion in Eastern and Western Music Mirrors Vocalization. *PLoS ONE*, 7: e31942.

21. Han S, Sundararajan J, Bowling DL, Lake J, & Purves D*. (2011). Co-Variation of Tonality in the Music and Speech of Different Cultures. *PLoS ONE*, 6: e20160.

-Design, supervision, data analysis, writing.

22. Bowling DL*, Gill K, Choi J, Prinz J, & Purves D. (2010). Major and Minor Music Compared to Excited and Subdued Speech. *Journal of the Acoustical Society of America*, 127: 491-503.

Reviews

23. Bowling DL*. Biological Principles for Music and Mental Health. (2023). *Translational Psychiatry*, 13:374.

24. Itskovitch E[†], Bowling DL^{†*}, Garner JP, & Parker KJ. (2022). Oxytocin and the Social Facilitation of Placebo Effects. *Molecular Psychiatry*, 27:2640-2649.

-Writing, editing, corresponding for publication; co-first author EI wrote preliminary draft.

25. Filippi P*, Hoeschele M, Spierings MJ, & Bowling DL. (2019). Temporal Modulation in Speech, Music, and Animal Vocal Communication: Evidence of Conserved Function. *Annals of the New York Academy of Science*, 1453:99-113.

26. Bowling DL* & Purves D. (2015). A Biological Rationale for Musical Consonance. *Proceedings of the National Academy of Sciences USA*, 112: 11155-60.

27. Ravignani A*, Bowling DL, & Fitch WT*. (2014). Chorusing, Synchrony, and the Evolutionary Functions of Rhythm. *Frontiers in Psychology*, 5:1118.

-Writing, supervision, editing.

28. Bowling DL*. (2013). A Vocal Basis for the Affective Character of Musical Mode in Melody. *Frontiers in Psychology*, 4:464.

Commentary

29. Wagner B, Bowling DL, Hoeschele M (2023). Defining Octave Equivalence and a Comparative Approach to Understanding its Biological Foundations. (In Press). *Current Anthropology*.

-Writing, editing.

30. Bowling DL* (2023). Vocal Similarity and the Biology of Musical Tonality. *Physics of Life Reviews*, 46, 46-51.

31. Bowling DL*, Hoeschele M, & Dunn JC. (2021). Progress Without Exclusion in the Search for an Evolutionary Basis of Music. *Brain and Behavioral Sciences*, 44, E97.

32. Bowling DL*. (2021). Harmonicity and Roughness in the Biology of Tonal Aesthetics. *Music Perception*, 38:331:334.

33. Bowling DL*. (2020). Claims of Categorical Primacy for Musical Affect are Confounded by Using Language as a Measure. *Proceedings of the National Academy of Sciences USA*, 117:9692-9693.

34. Bowling DL*, Hoeschele M, Gill KZ, & Fitch WT. (2017). The Nature and Nurture of Musical Consonance. *Music Perception*, 35:118-121.

35. Bowling DL*. (2017). The Continuing Legacy of Nature vs. Nurture in Biolinguistics. *Psychonomic Bulletin & Review*, 24:140.

36. Bowling DL & Fitch WT*. (2015). Do Animal Communication Systems Have Phonemes? *Trends in Cognitive Sciences*, 19:555-57.
37. Bowling DL*. (2015). The Problem with Emotion. Comment on “The Quartet Theory of Human Emotions: An Integrative Neurofunctional Model” by S Koelsch et al. *Physics of Life Reviews*, 13:33-35.
38. Bowling DL*. (2014). Cognitive Theory and Brain Fact: Insights for the Future of Cognitive Neuroscience. Comment on “Toward a Computational Framework for Cognitive Biology: Unifying Approaches from Cognitive Neuroscience and Comparative Cognition” by WT Fitch. *Physics of Life Reviews*, 11:377-9.

Book Chapters

39. Ravignani A, Bowling DL, Kirby S. (2014). The Psychology of Biological Clocks: A New Framework for the Evolution of Rhythm. In E. Cartmill, S. Roberts, H. Lyn, & H. Cornish (Eds.), *The Evolution of Language* (pp. 262–269).

-Writing, editing.

40. Bowling DL & Purves D. (2012). A Biological Basis for Musical Tonality. In: B Barth, G Patrizia, H Klein (eds.), *Sensory Perception: Mind and Matter*. Springer Verlag, Heidelberg, DE.

Theses

1. Bowling DL. (2012). The Biological Basis of Emotion in Musical Tonality. (PhD Thesis). Duke University Libraries, DukeSpace Theses and Dissertations.
2. Bowling DL. (2006). Studies at the Intersection of Neuroscience and Philosophy of Mind. (Undergraduate Thesis). Muir College Special Projects Major, UCSD.

Submitted Manuscripts

1. Scheer C, Bowling DL, Hungerländer NA, Horn L. Work Together, Move Together – Cooperation and rapport promote interpersonal synchrony. *Revision under review at Journal of Nonverbal Behavior*.

-Design, analysis, editing.

2. Orpella K, Bowling DL, Tomaino C, & Ripollés P. Effects of Affectively Parameterized Music on Mood and Attention. Under review at *Scientific Reports*

-Design, stimuli, analysis, writing, editing.

Work in progress

1. Bowling DL, Noufi C, Frank MJ, Berger J, Garner JP, & Parker KJ. A Non-Verbal Tool for Clinical Assessments of Affect Perception in Children and Adults: the continuous Self-Assessment Manikin (SAMc).

2. Bowling DL, Noufi C, Garner JP, Frank MJ, & Parker KJ. Assessing Sensitivity to Auditory Vocal Affect: Development and Validation of the TAVA.
3. Bowling DL & Parker KJ. Oxytocin Neurobiology and Social Determinants of Treatment Efficacy: Implications for Precision Medicine.

AWARDS & HONORS

1. **Tuition Award.** *MCHRI-Eureka Certificate Course in Translational Medicine*. Asilomar, CA. (2020)
2. **Young Investigator Award.** *Faculty of Life Sciences, University of Vienna*. Vienna, Austria. (2016)
3. **Travel Award.** *Cold Spring Harbor Laboratory*. New York, NY. (2016)
4. **Innovation Award.** For “A Distinct Role of the Temporal-Parietal Junction in Predicting Socially Guided Decisions.” *Social and Affective Neuroscience Society*. Website: <https://socialaffectiveneuro.org>.
5. **Best Talk.** For “Synchrony and Temporal Regularity in Human Vocalization.” *Syntax of the Mind International Conference*. Vienna, Austria. (2014).
6. **Best Poster.** For “Emotional Expression in Music Mirrors Vocalization.” *Neuroscience and Behavioral Disorders Annual Retreat*. Singapore. (2010).
7. **Summa Cum Laude.** For GPA 3.890. Latin Honors at UCSD. San Diego, CA. (2006).
8. **Coaches Award.** For varsity boys soccer. Henry M. Gunn High School. Palo Alto, CA. (2002).
9. **Multiple 1st and 2nd place finishes in Piano and Speech Arts Competitions.** Calgary Performing Arts Festivals. Calgary, AB. (1991-1998).

PRESENTATIONS

Invited Talks and Guest Lectures

1. Bowling DL. The Biology of Music. *Music 251 - Psychophysics and Music Cognition*. Stanford University. Stanford, CA. February 2023
2. Bowling DL. Rapid Evolution of the Primate Larynx. *Acoustic Communication: An Interdisciplinary Approach*. Federal University of Alfenas. Varginha, BR. November 2020.
3. Bowling DL. Vocal Affect and the Biology of Music. *Department of Comparative Language Science, University of Zurich*. Zurich, CH. May 2020.
4. Bowling DL. Vocalization and the Biology of Music. *Department of Psychology, Stanford University*. Stanford, CA. January 2020.
5. Bowling DL. A Biological Rationale for Musical Consonance. *5th Meeting of the Carl Stumpf Society*. Vienna, AT. October 2015.

6. Bowling DL. The Problem of Musical Consonance. *Duke-NUS Neurobiology and Behavioral Disorders Annual Retreat*. Singapore. August 2011.
7. Bowling DL. The Affective Impact of Major and Minor Music. *Duke-NUS Early Career Scientists Symposium*. Singapore. October 2009.

Conference Talks

1. Bowling DL. Oxytocin and Group Singing. *Society for Music Perception and Cognition 2022 Conference*. Portland, OR. August 2022.
2. Bowling DL, Purves D, & Gill, KZ. Vocal Similarity Predicts the Relative Attraction of Musical Chords. *15th International Conference on Music Perception and Cognition*. Graz, AT. July 2018.
3. Bowling DL, Graf Ancochea P, & Fitch T. Pupillometry of Groove. *15th International Conference on Music Perception and Cognition*. Graz, AT. July 2018.
4. Fillipi P, Ocklenburg S, Bowling DL, ... de Boer B. Multimodal Processing of Emotion: Prosody and Facial Expression. *Evolution of Language 11*. New Orleans, LA. March 2016.
5. Bowling DL. Body size and Vocalization Frequencies in Mammals. *8th European Conference on Behavioural Biology*. Vienna, AT. July 2016.
6. Bowling DL & Purves D. A Biological Rationale for Musical Consonance. *Society for Music Perception and Cognition Conference*. Nashville, TN. July 2015.
7. Bowling DL & Fritz TH. Musical Agency Modulates Pain. *Society for Music Perception and Cognition Conference*. Nashville, TN. July 2015.
8. Bowling DL. Social Origins of Rhythm? *Evolution of Language Conference 10*. Vienna, AT. April 2014.
9. Bowling DL & Fitch WT. Synchrony and Temporal Regularity in Human Vocalization. *Syntax of the Mind International Conference*. Vienna, AT. April 2014.

Conference Posters

1. Noufi C*, Berger J, Parker KJ, Bowling DL. Acoustically-Driven Phoneme Removal that Preserves Vocal Affective Cues. *ICASSP 2023 – 2023 IEEE International Conference on Acoustic, Speech and Signal Processing*, Rhodes Island, Greece. June, 2023.
2. Bowling DL, Noufi, C., Frank, J, Berger, J. & Parker, K. Defining Individual Variation in the Reception of Auditory-Vocal Affect in Autism. *Bay Area Autism Consortium Annual Symposium*. Stanford, CA. November, 2022.
3. Bowling DL, Noufi, C., Frank, J, Berger, J. & Parker, K. Evaluating Affect Perception with Speech and Speech-Derived “Music”. *Society for Music Perception and Cognition 2022 Conference*. Portland, OR. August 2022.

4. Fillipi P, Cogden J, Hoang J, Bowling DL... & Güntürkün O. Humans Recognize Vocal Emotional Expression Across Species. *Evolution of Language* 11. New Orleans, LA. March 2016.
5. Horn L, Hungerländer N, Scheer C, & Bowling DL. Work Together, Move Together: Cooperation Promotes Interpersonal Synchrony in Human Dyads. *Behaviour* 2015. Cairns, AU. August 2015.
6. Bowling DL, Garcia M, & Fitch WT. Primate Vocalization in Phylogenetic Context. *International Bioacoustics Conference*. Murnau, DE. September 2015.
7. Bowling DL & Fritz TH. Musical Agency During Joint Exercise. *Joint Action Meeting* 6. Budapest, HU. July 2015.
8. Bowling DL, & Fitch WT. Social Origins of Rhythm? *3rd Transfer of Knowledge Conference on Comparative Cognition*. Vienna, AT. July 2013.
9. Bowling DL, Sundararajan J, Han S, & Purves D. Emotional Expression in Music Mirrors Vocalization. *Duke-NUS Neurobiology and Behavioral Disorders Annual Retreat*, Singapore. August 2011.

MENTORSHIP & TEACHING

(Levels of study: U = undergraduate, RA = research assistant, M = masters, D = doctoral)

Current Students

	<u>Name</u>	<u>Dates</u>	<u>Level: Topic</u>	<u>Current position</u>
1.	Alvin Wong	01/2024-	U: Independent study in music & health	Undergraduate student <i>Stanford University</i>
2.	Ryan Titapiwatanakun	01/2024-	U: Independent study in music & health	Undergraduate student <i>Stanford University</i>
3.	Ying Yu	01/2023-	U: Independent study in music & health	Clinical Coordinator <i>Bowling Lab</i>

Former Students

4.	Camille Noufi	04/2022-11/2024	D: Affect in speech signals	Doctoral Recipient <i>Stanford University</i>
5.	Aaron Libed	09/2022-12/2022	U: Audition & pupillometry	Undergraduate student <i>Stanford University</i>
6.	Psalm Pineo-Cavanaugh	11/2020-06/2021	U: Speech deficits in autism	Research assistant <i>UCSF</i>
7.	Hannah Walton	02/2020-05/2021	U: Recording & processing speech	Masters student <i>Stanford University</i>
8.	Margaret Bruck	06/2019-01/2020	U: Emotion induction	Research assistant <i>Stanford University</i>
9.	Marlene Holtzhausen	08/2019-10/2019	U: Recording & processing speech	Masters student <i>University of Oldenburg</i>
10.	Pablo Graf Ancochea	01/2015-06/2019	M: Pupillometry of groove	Data analyst <i>University of Vienna</i>

11.	Katarina Pera	04/2018-09/2018	U: Consonance perception	Masters student <i>University of Zagreb</i>
12.	Julia Gahr	09/2016-06/2018	M: hormones effects of group singing	Public school teacher <i>Vienna, Austria</i>
13.	Rafaella Lesch	02/2018-11/2018	D: Mammalian bioacoustics	Assistant professor <i>University of Akansas</i>
14.	Sabrina Bettoni	02/2018-11/2018	D: Mammalian bioacoustics	PhD student <i>University of Vienna</i>
15.	Pamela Pacerová	03/2018-11/2018	U: Pupillometry	Service manager <i>LKW Walter Logistics</i>
16.	Shahzad Afroozeh	06/2016-06/2018	M: Rhythm perception	Senior system engineer <i>OHB Digital Solutions</i>
17.	Isabella De Cuntis	02/2017-05/2017	U: Consonance perception	PhD candidate, <i>IMT School for Advanced Studies</i>
18.	Joshua Bamford	10/2016-10/2017	M: Interpersonal synchrony	PhD candidate <i>University of Oxford</i>
19.	Tamás Novak	11/2015-06/2017	RA: Psychophysiology	Research technician <i>University of Bristol</i>
20.	Maximé Garcia	04/2015-04/2017	D: Primate bioacoustics	Senior scientist <i>FIBL, Zurich.</i>
21.	Rebecca Ruprecht	06/2013-02/2015	M: bioacoustics	Business systems analyst <i>eBay</i>
22.	Asha Sato	06/2015-09/2015 06/2014-09/2014	RA: Larynx evolution	Teaching fellow <i>University of Edinburgh</i>
23.	Emma Optiz	06/2013-06/2014	U: Matlab & psychophysics	Assist. dir. of admissions <i>Hamsphire College</i>
24.	Jinook Oh	06/2013-04/2014	RA: Auditory-visual synchrony	Postdoctoral researcher <i>IST Austria</i>
25.	Janani Sundararajan	08/2009-05/2012	RA: Speech & music across cultures	Senior research associate <i>Chardan</i>
26.	Shui-er Han	08/2009-05/2012	RA: Speech & music across cultures	<i>Postdoctoral researcher University of Rochester</i>
27.	Jessica Lake	05/2011-09/2011	D: Matlab programming	Chief science officer <i>Limbox</i>

Courses Taught

Independent Study in Music and Health
Duke University

Winter 2022

Methods in Cognitive Biology
University of Vienna

Winter 2016 & 2017

Neuroanatomy Lab
Duke University Medical School

Winter 2009 & 2010

OTHER PROFESSIONAL ACTIVITIES

Academic Memberships

- Center for Precision Medicine, *Stanford University S.O.M.* 2022-present
- Maternal and Children's health Institute, *Stanford University S.O.M.* 2022-present
- Bay Area Autism Consortium, *San Francisco Bay Area.* 2022-present
- The SingWell Project, *Toronto Metropolitan University.* 2022-present
- Center for Computer Research in Music and Acoustics, *Stanford University.* 2020-present
- Sound Health Network, *UCSF.* 2019-present
- Wu Tsai Neuroscience Institute, *Stanford University.* 2018-present
- International Society for Bioacoustics, *<https://www.ibac.info>.* 2017-present
- Society for Music Perception and Cognition
<http://www.musicperception.org>. 2015-present
- Caledonian Society, *UCSD.* 2006-present

Ad Hoc Manuscript Review

(51 manuscripts reviewed for these academic journals)

Bioacoustics • Biology Letters • BMC Neuroscience • Comparative Cognition & Behavior Reviews • Frontiers in Human Neuroscience • Frontiers in Neurology • Frontiers in Psychology • Journal of Autism and Developmental Disorders • Journal of Cognition • Journal of Comparative Psychology • Journal of Experimental Psychology: Human Perception and Performance • Journal of Interdisciplinary Music Studies • Journal of Nonverbal Behavior • Music Perception • Musicae Scientiae • Proceedings of the National Academy of Sciences • Psychonomic Bulletin & Review • Science Advances • Speech Communication

Consulting

- Neuroscience Advisor, *Spiritune.* 2018-present
(Guidance on the acoustic parameterization of music for affect modulation)
- Music and Wellness Advisor, *Feed Media Group.* 2022-present
(Guidance on music's capacity for impact on mental health and wellness)

Selected Media Interviews & Press

<u>Title</u>	<u>Date</u>	<u>Source</u>	<u>Media Type</u>
The science behind music and Mental Health	02/13/2024	<i>Sapio with Buck Joffrey</i>	Podcast
Music could hold the key to developing effective mental health interventions	06/12/2023	<i>News Medical Life Science</i>	Web Article
'Frequencies of peace' receives support from UNCHR, the UN refugee agency	07/09/2023	<i>BBC4 Today</i>	Radio Interview
	04/12/2023	<i>Euronews</i>	

Music does more for our mental health than you think			Op-ed
Syrian children traumatized by war are listening to a special lullaby to fall asleep	03/31/2023	CNN	Web article
Frequencies of peace campaign	03/30/2023	Sky News	TV interview
'Groove is a Psychological Construct': The Science Behind a New Music Therapy App	02/11/2023	Vogue	Magazine article
How to Boost Brain Chemistry: Your Doctor's Good Bedside Manner Helps	04/28/2022	Psychology Today	Web article
Science-backed ways to find your ideal relaxing bedtime playlist	02/03/2022	MindBodyGreen Health	Web article
Primate Voice Box Evolved at Rapid Pace	11/08/2020	Science Daily	Web article
Screams Heard Round the Animal World	07/31/2017	Scientific American	Podcast
Sounds to Make You Emotional.	11/13/2015	Naked Scientists BBC one.	Podcast
Brain on Music Kills Pain of Workouts	08/08/2015	NewScientist	Magazine article
Musical Intervals Sway Mood	07/01/2012	Scientific American Mind	Magazine article
Emotional Music	04/17/2012	Science Update, NPR	Radio
Emotion in Music Mirrors Speech	03/21/2012	Science Daily	Web article
Emotional Expression in Music and Speech Share Similar Tonal Properties	03/14/2012	Science Daily	Web article
Sounds in the Key of Life: What Makes Music Emotional?	01/11/2010	NewScientist	Web article
Does a Minor Key Give Everyone the Blues?	01/08/2010	Nature News	Web article
Music and Speech Based on Human Biology, New Evidence Shows	12/03/2009	Science Daily	Web article

OTHER RELEVANT EXPERIENCE

- Level 9 in The Royal Conservatory of Music's Piano Certificate Program. Toronto, ON. 1998. (Including yearly examinations in technical skills, and in later years, music theory and history)
- Five years of weekly lesson in Speech Arts at Mount Royal College. Calgary, AB. 1998. (Training in the projection, articulation, timing, and intonation of voice in poetry and theater)
- Completed training in "Unconscious Bias in Medicine." Stanford Center for Continuing Medical Education. Stanford, CA. 2022.
- Completed training in "Unconscious Bias in Recruiting." Stanford Medicine Office of Faculty Development and Diversity. Stanford, CA. 2022.

REFERENCES

Post-Graduate Advisors

Karen Parker, Ph.D. Professor of Psychiatry and Behavioral Sciences.
Stanford University School of Medicine, Palo Alto, California, USA.
Phone: +1 650 736 9863. Email: kjparker@stanford.edu

W. Tecumseh Fitch, Ph.D. Professor of Cognitive Biology.
University of Vienna, Faculty of Life Sciences, Vienna, Austria.
Phone: +43 1 4277 76111. Email: tecumseh.fitch@univie.ac.at

Graduate Advisor

Dale Purves, M.D. Emeritus Professor of Neurobiology
Duke University, Durham, North Carolina, USA.
Phone: +1 919 684-6122. Email: purves@neuro.duke.edu

Undergraduate Advisor

Patricia Churchland, Ph.D. Emeritus Professor of Philosophy
University of California, La Jolla, California, USA.
Phone: +1 858 822-4883. Email: pschurchland@ucsd.edu

Students

Ying Yu, B.S. Clinical Coordinator.
Stanford University School of Medicine, Stanford, California, USA.
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Camille Noufi, Ph.D. Defended 11/16/2023.
Stanford University, Palo Alto, California, USA.
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Pablo Graf-Ancochea, M.S. Data Analyst.
University of Vienna, Vienna, Austria.
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Marlene Holzhausen, B.S. Masters student.
Carl von Ossietzky University, Oldenburg, Germany.
Email: marlene.holzhausen@t-online.de