cymatrax

Optimize The Human Potential

Accelerating Brain Cognition with Digital Audio

Investor Overview Deck
8.10.25

OUR MISSION

To revolutionize digital audio across multiple industries (healthcare/entertainment/education) by delivering audio that not only sounds better … *but also enhances human potential*

About Cymatrax

Cymatrax is an innovative, patented audio enhancement technology designed to eliminate white noise, a significant source of cognitive interference.

Awarded 2nd Place
Wharton School Entrepreneur Accelerator Competition

- Uniquely process digital audio to *reduce harmful white noise*
- Optimize frequencies to deliver measurable *positive impact on mental clarity, focus, and productivity*
- Increase *cognitive function, reduces stress, and enhance overall well-being*

About Cymatrax

Clinical trials conducted at James Madison University have scientifically demonstrated that Cymatrax increases retention, alertness, and comprehension, particularly in individuals with ADHD.

Over 5 Billion People Listen to Digital Audio Each Day

Cymatrax utilizes patented technologies that:

- Identifies frequencies shown to raise cognition
- Reduces white noise amplitude
- Does *not* change the quality of digital audio

Why Does This Matter?

- **Only 8-12% of corporate training participants retain information taught**
- **Online education students become disengaged within 15-20 minutes of lessons**
- **Audiobook listeners struggle to finish multiple chapters**
- **Podcast listeners detach from listening and do not retain content of the story**

All Digital Audio Contains White Noise

Why Does This Matter?

- **White Noise Impact**: Current digital audio is filled with white noise, which the NIH documents in a clinical trial (Differential effects of white noise in cognitive and perceptual tasks, 11-3-2015) to show impaired cognitive performance and increased stress while listening to white noise.

- **User Experience**: In digital environments like music, podcasts, and corporate training, this issue diminishes user experience and retention.

- **Health Impacts**: Research from institutions like Johns Hopkins and MIT shows that specific frequencies improve neurological performance. Conversely, white noise hampers efficiency, particularly in cognitive and perceptual tasks

The Problem

All digital audio contains white noise

Audio Visual

Podcast listeners detach from listening and do not retain the story

Books on audio listeners struggle to finish a chapter before falling asleep

Education

Online education students fall asleep within 15-20 minutes into lessons

Only 8-12% of listeners of corporate training retain information taught

Neurological Therapies

~ 8.7 million in the US have ADHD, 5% of the population. ~140 million globally

1 in 3 people suffer from a neurological condition: Autism, Alzheimer's, Parkinson's and Stroke

The Cymatrax Solution

Patented Audio Processing

Cymatrax's technology identifies beneficial audio frequencies and reduces the amplitude of white noise, enhancing audio without altering the content. This boosts cognitive focus, energy levels, and retention

Cymatrax significantly reduces White Noise Volume by:

- Analyzing Digital Audio
- Locating targeted frequencies in the code which results in raised cognition
- Locks on to those frequencies
- Reduces a measurable percentage of white noise amplitude in between the target frequencies (proprietary formula)
- Without changing the quality of the recording, the listener now has more energy, less stress and higher cognitive function

The Cymatrax Solution

A Wide Range of Industries

- **Music and Podcasts**: Enhanced engagement, improved audience retention, and a more stimulating listening experience
- **Corporate Training and Online Education**: Higher retention rates and improved learning outcomes through optimized audio
- **Healthcare:** Cymatrax, Inc. is actively seeking opportunities to continue clinical trials for its applications in treating autism, dementia, and other neurological disorders

Competitive Advantage

Proprietary Technology: Cymatrax holds a unique position with its patented frequency analysis and noise reduction software

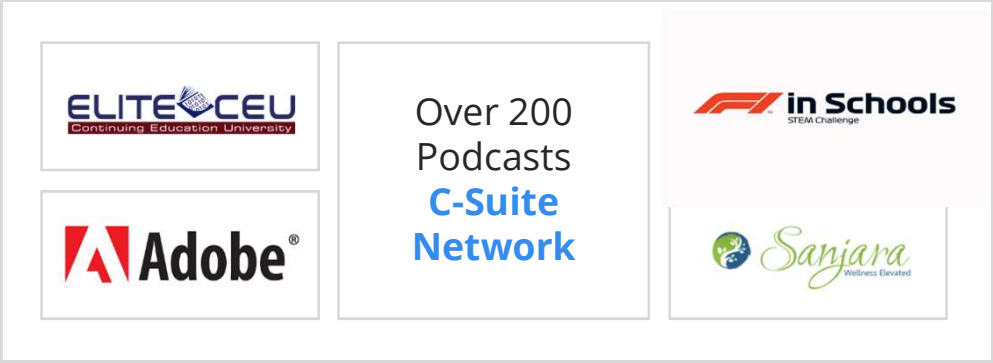
Health Benefits Backed by Science: Unlike competitors focused solely on audio fidelity, Cymatrax emphasizes cognitive and health improvements backed by clinical research

Early Traction & Scalable Sales

- Elite CEU has submitted over 3000 audio files for better student retention and higher rate of passing exams.
- 1st tier use for Adobe is in corporate AV training. Waiting for licensing agreements.
- Milestone: podcasters use, in a B2C market.
- Next: B2B, Samsung, Sony and Lenovo.
- Open Invitation to present to BoD at Disney Music.
- Partnering with F1 in Schools 2024
- Sanjara Wellness asking for a license agreement.
- We have built the business website to a Microsoft platform.

Early Traction & Scalable Sales

Already Using Cymatrax Technology And Planning On Several Expansions Into Multiple Departments

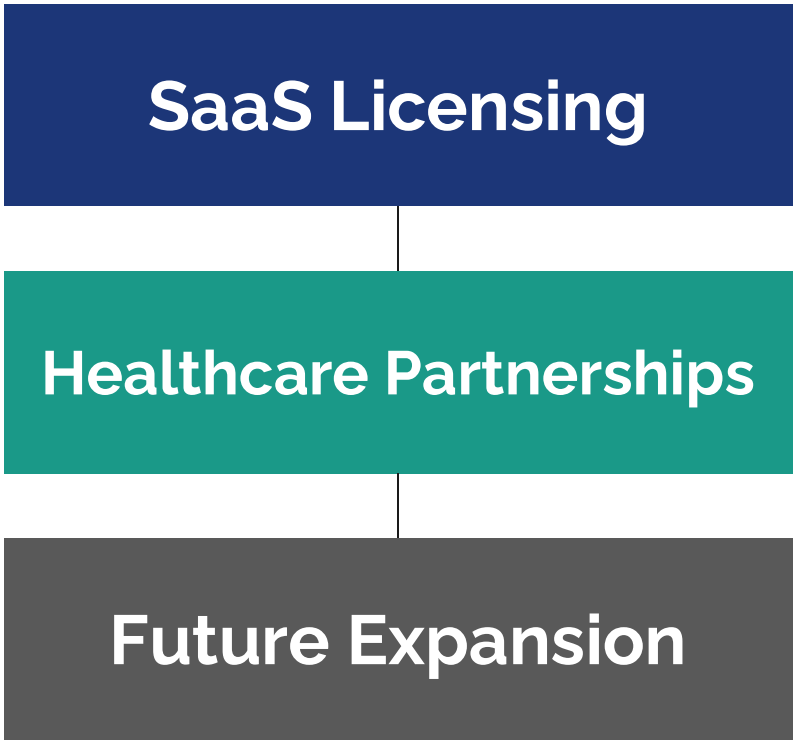


Business Model

SaaS Licensing: Cymatrax offers its audio optimization service through a Software-as-a-Service (SaaS) model, allowing users to upload and process their digital audio files.

Healthcare Partnerships: The company is working with renowned neurologists to explore clinical applications, including autism and dementia therapy

Future Expansion: Cymatrax plans to integrate its technology into streaming platforms, corporate e-learning systems, and consumer electronics, creating multiple streams of revenue



Business Model & Pricing

B2B, *Primary*
Online education, recording studios, music, corporate training, royalty distribution. Subscription series and retail pricing from web site. Licensing for enterprise users..
Secondary vertical opportunities Veterans Administration funded by grant awards. Healthcare, PTSD, Autism therapies Streaming media ie: Spotify, Pandora, YouTube
Silicon chip for hardware. **Samsung** reached out to us.
5G/6G network
Yr2 sales= $500k

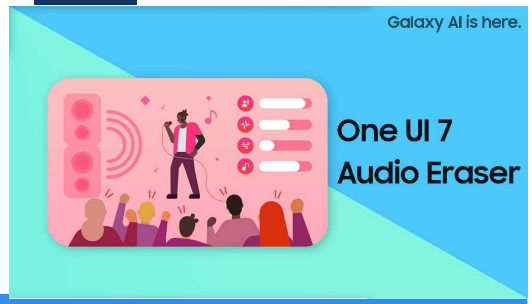
B2B must jump on board due to competition awareness

B2C: Nootropic rise has increased by 300% since 2018

Competition

1

SAMSUNG



2

Adobe

Enhance Speech v2

3

Google

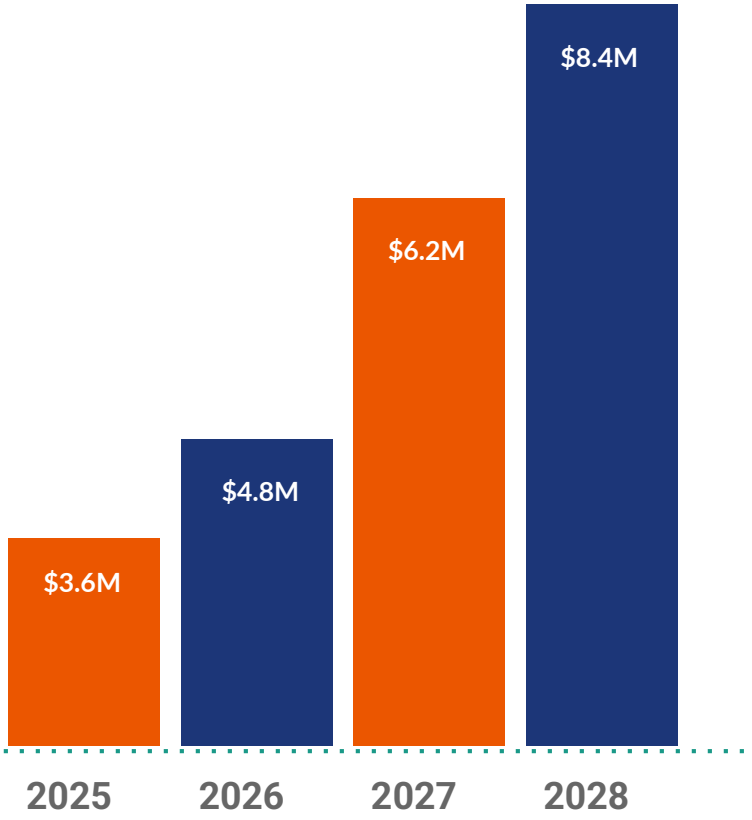
Magic Audio
By Riverside

No other company uses frequecy specific filtering

CYMATRAX MARKET OPPORTUNITY

Massive Digital Audio Market: With over 5 billion people listening to digital audio daily, Cymatrax is targeting a broad spectrum of applications, from entertainment to health

Growing Demand in Health & Wellness: Increasing awareness around mental health and the role of sound therapy offers significant market potential. Additionally, the integration into consumer devices (e.g., headphones, speakers) expands commercial applications



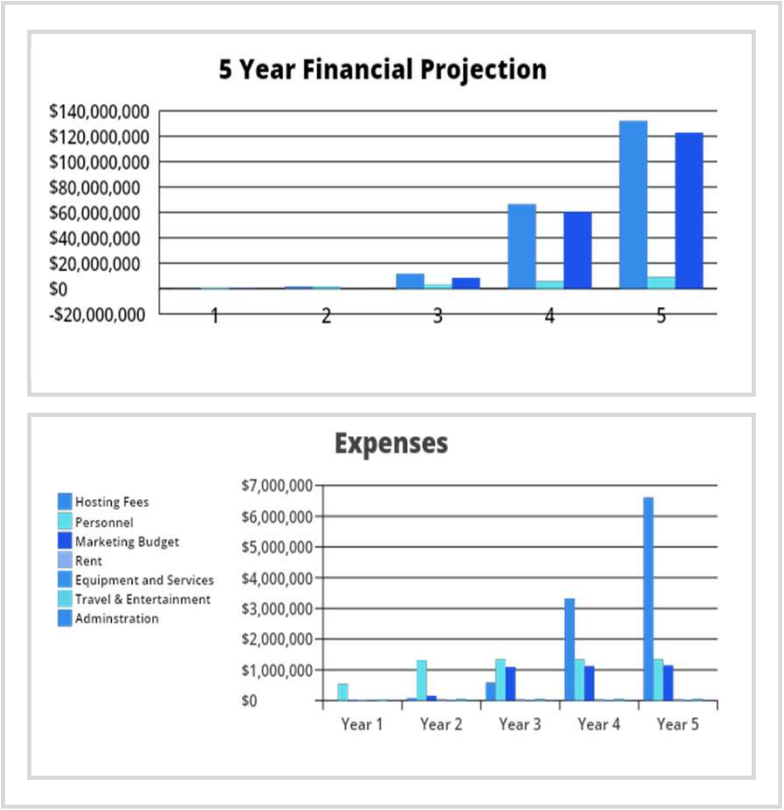
Revenue Plan

Multiple Revenue Streams:

Monthly subscriptions for small, medium and enterprise users ($0-$99 per month assessed at number of files filtered) is currently being QC'd, as well as streaming media will range from $0.03-0.05 per month (plug in)

- Initial 2 year licensing $3k-80k,
- Licensing with royalties will be judged upon distribution expectations
- Web Site for Retail Users is already available on at http://Cymatrax.com, as a monthly subscription service, Freemium, Gold and Platinum

Social trials from Jame Madison University will give public acceptance, as well as $1-3M funding from Autism Speaks.



Investment Opportunity

Current Funding Round:

- Currently raising $1M at $10M valuation
- $100K raised to date

Investment Opportunity:

- Cymatrax is seeking investment to scale its SaaS platform, expand into new markets (streaming, healthcare), and continue R&D for clinical applications.

Use of Funds:

- Investment will be used to accelerate product development, expand the sales team, and initiate large-scale clinical trials

Growth Strategy:

- Direct Enterprise Sales Activity
- Technology Partnerships (OEM, etc)
- Industry Specific Solutions

The Cymatrax Team

Alan Brunton
Founder & CEO

Founder and CEO, with decades of experience in audio engineering and entrepreneurship

Eduardo Contreras
Chief Technology Officer

Experienced technologist and software development leader, with a focus on SaaS telecommunications

Targeted Outreach and Vertical Categories

These companies represent **professional audio, consumer electronics, audio processing, and semiconductor technologies** for audio applications:

- **Bose Professional** (business and commercial audio solutions)
- **Dolby Laboratories**
- **DTS, Inc.**
- **Sony** (Professional Audio and Entertainment)
- **THX Ltd.**
- **Sennheiser**
- **Harman International** (a Samsung subsidiary, includes brands like JBL, AKG)
- **Bose Corporation**
- **Avid Technology** (audio and video technology, Pro Tools)
- **Fraunhofer Institute for Integrated Circuits** (creator of MP3 and AAC)
- **Audyssey Laboratories**
- **Immersive Audio Technologies** (high-end immersive sound)
- **Shure Incorporated** (microphones, audio electronics)
- **Audio-Technica** (audio equipment, headphones, microphones)
- **Electro-Voice** (pro sound equipment)
- **Texas Instruments (audio chips and technology)**
- **Realtek Semiconductor Corporation (audio solutions)**
- **Microchip Technology Inc. (microcontrollers, mixed-signal, analog devices)**
- **Analog Devices (semiconductors and signal processing solutions)**
- **Bang & Olufsen** (luxury audio products)
- **Klipsch Audio Technologies** (high-end audio products)
- **Marshall Amplification** (audio equipment and amplifiers)
- **Pioneer Corporation** (DJ and professional audio equipment)
- **QSC Audio Products** (amplifiers, mixers, speakers)
- **Meyer Sound Laboratories** (high-performance sound reinforcement products)
- **AKG Acoustics** (microphones, headphones, wireless audio systems)
- **Tascam** (audio recording and playback equipment)
- **Focusrite** (audio interfaces and recording tools)
- **Focal** (high-fidelity speakers, headphones, monitors)
- **TEAC Corporation** (audio equipment)
- **Genelec** (studio monitors and audio technology)
- **Behringer** (audio equipment and recording tools)
- **Blue Microphones** (microphones, audio recording devices)

These companies operate in across **Technology, Education, Healthcare and Media**:

Technology Companies (Hardware, Software, & Platforms)

- Apple Inc.
- Google (YouTube Music)
- Amazon (Audible, Amazon Music)
- Microsoft (Teams, Xbox)
- Facebook (Meta)
- TikTok
- Zoom Video Communications
- Cisco Systems (Webex)
- Sonos
- Harman Kardon
- Yamaha Corporation
- Samsung (Galaxy Buds, audio tech)
- Plantronics (Poly)
- Skullcandy
- Beats by Dre
- Logitech (audio for meetings, headsets)
- Intel (audio for chip technologies)
- NVIDIA (AI and audio processing)
- Qualcomm (audio in mobile technology)
- Bowers & Wilkins (audio tech)

Education & E-Learning

- Pearson (education)
- McGraw Hill (digital learning)
- Coursera (online education platform)
- Udemy (e-learning)
- Kahoot! (interactive learning platform)
- Duolingo (language learning)
- Lumosity (brain training)
- LinkedIn Learning (education)
- Skillshare (e-learning platform)
- Khan Academy (online learning)

Healthcare & Mental Wellness

- Philips Healthcare (sound therapies)
- Medtronic (medical technology)
- Calm (mental health & wellness)
- Headspace (mental health & wellness)
- NeuroNation (brain training)

Media & Entertainment

- **Audible**
- **iHeartRadio**
- Spotify
- Spotify for Podcasts
- SoundCloud
- NPR (National Public Radio)
- Penguin Random House (audiobooks)
- BBC Sounds (podcasts)
- TED Talks (audio and podcasts)
- SiriusXM
- Pandora Radio
- Disney+ (entertainment audio content)
- Netflix (audio for shows, documentaries)
- Hulu
- AMC Networks
- HBO Max

This list represents additional **Streaming Media and Podcasting Platform/Networks**:

Streaming Media Platforms:

- **Apple TV+**
- **HBO**
- **Peacock (NBCUniversal)**
- **Showtime**
- **Discovery+**
- **Twitch (Amazon)**
- **Roku**
- **Crackle**
- **Vudu (Walmart)**
- **Paramount+**
- **Tubi TV**
- **DAZN**
- **Sling TV**
- **FuboTV**
- **Pluto TV**
- **Redbox**
- **BritBox**
- **Acorn TV**
- **FilmRise**
- **Funimation (Sony)**
- **Vimeo**
- **Plex TV**
- **Vevo**
- **Dailymotion**
- **Kanopy**
- **Hoopla Digital**
- **Hulu Live TV**
- **YouTube Premium**

Podcasting Platforms & Networks:

- **Stitcher (SiriusXM)**
- **iHeartRadio**
- **Anchor (Spotify)**
- **Acast**
- **Podbean**
- **Libsyn (Liberated Syndication)**
- **Blubrry**
- **Audioboom**
- **Megaphone (Spotify)**
- **Castbox**
- **Buzzsprout**
- **Podomatic**
- **Transistor**
- **Resonate Recordings**
- **Simplecast (SiriusXM)**
- **Omny Studio**
- **PRX (Public Radio Exchange)**
- **Wondery (Amazon)**
- **The Ringer (Spotify)**
- **Gimlet Media (Spotify)**
- **Audible Podcasts (Amazon)**
- **Westwood One Podcast Network (Cumulus Media)**

This list represents top chipmakers related to **sound technologies, specifically focused on audio processing, noise cancellation, and audio enhancement**:

Qualcomm

- **Specialty: Qualcomm is a leader in mobile and wireless communication chipsets, and they develop a range of chips for audio technologies. Their Qualcomm Audio Platform provides advanced Bluetooth audio codecs (aptX, aptX HD) and processing for headphones, wireless earbuds, and smart speakers.**
- **Use Cases: Bluetooth audio, noise cancellation, high-quality sound for mobile devices.**

Cirrus Logic

- **Specialty: Known for its high-performance mixed-signal audio and voice processing chips, Cirrus Logic is a key player in providing audio chips for high-end smartphones (including Apple's iPhones), tablets, and other consumer devices.**
- **Use Cases: Audio codecs, DACs (Digital-to-Analog Converters), and sound processing.**

Texas Instruments (TI)

- **Specialty: TI offers a variety of digital signal processors (DSPs) that are widely used in audio processing, including soundbars, headphones, and automotive audio systems. Their PurePath™ Audio products are known for high-fidelity sound reproduction.**
- **Use Cases: Audio amplification, sound mixing, noise cancellation.**

Realtek

- **Specialty: Realtek produces audio chips and codecs that are widely integrated into PC motherboards, sound cards, and consumer electronics. Their chips are known for high integration and affordable pricing.**
- **Use Cases: Consumer electronics, motherboards, home audio.**

NXP Semiconductors

- **Specialty: NXP provides audio processing chips for automotive sound systems and voice-activated applications. Their i.MX family of processors**

This list represents top chipmakers related to **sound technologies, specifically focused on audio processing, noise cancellation, and audio enhancement**:

Analog Devices

- **Specialty: Analog Devices offers solutions for high-performance audio processing, including SHARC® and SigmaDSP® processors, which are used in professional audio equipment and consumer devices.**
- **Use Cases: Professional audio equipment, home audio, smart devices.**

Synaptics

- **Specialty: Synaptics is a leader in audio and voice technologies for smart home devices and wireless audio solutions. Their AudioSmart® platform is known for low-latency audio and voice control.**
- **Use Cases: Smart speakers, voice assistants, audio peripherals.**

STMicroelectronics

- **Specialty: STMicroelectronics provides audio DSPs and audio amplifier ICs that are used in wireless audio devices, consumer electronics, and professional sound systems. Their solutions often focus on power efficiency and high performance.**
- **Use Cases: Wireless audio, consumer audio devices.**

MediaTek

- **Specialty: MediaTek provides chipsets that include integrated audio processing for mobile devices, tablets, and smart speakers. Their chips are commonly used in Android-based smartphones.**
- **Use Cases: Mobile devices, smart speakers, Bluetooth audio.**

Knowles Corporation

These Organizations offer **financial grants or funding related to the evolution of sound technologies** related to various aspects of sound technology (research, product development, innovation) related to evolving sound technologies across industries.

Government and National Institutions

- **National Science Foundation (NSF)** - The NSF offers grants for research and development in sound technologies, including audio processing, signal processing, and emerging audio technologies related to AI and machine learning. Their "Small Business Innovation Research (SBIR)" program is particularly relevant.
- **National Institutes of Health (NIH)** - The NIH may fund projects related to the health applications of sound technologies, such as hearing aids, medical devices, and therapeutic sound applications. This is especially applicable for companies working at the intersection of sound technology and healthcare.
- **European Commission (Horizon Europe)** - Horizon Europe is the EU's key funding program for research and innovation. It supports projects that focus on innovation in sound and audio technologies, particularly those that contribute to digital advancements or healthcare improvements.
- **Innovate UK** - Innovate UK provides funding and support to businesses looking to innovate within sound technology, including new products, immersive sound experiences, and AI-powered sound solutions.
- **National Endowment for the Arts (NEA)** - The NEA offers grants for artistic projects that incorporate innovative sound technology in creative and experimental ways, such as interactive audio installations or sound-based performances.
- **Department of Defense (DoD) SBIR/STTR** - The SBIR/STTR programs under the U.S. DoD provide funding opportunities for the development of advanced sound technologies that may have defense-related applications, such as communication systems, noise reduction, and audio signal processing.

Private Foundations and Nonprofits

- **The Audio Engineering Society (AES)** - AES offers funding and scholarships for research in sound engineering, audio technologies, and related areas. They may provide grants for groundbreaking work in sound technology innovation.
- **The Dolby Family Foundation** - Dolby supports organizations working in education, research, and innovation in audio technologies. It has provided grants for audio-focused projects, particularly in academia and arts sectors.
- **The Knight Foundation** - The Knight Foundation funds projects that intersect technology and media. They may be interested in initiatives that push the boundaries of sound technology in communication and media spaces.
- **The Rockefeller Foundation** - Though broader in its focus, the Rockefeller Foundation provides grants for innovation in areas like education, healthcare, and arts, which could support projects that include advanced sound technologies or therapeutic audio applications.

Academic and Research Institutions

- **Institute of Electrical and Electronics Engineers (IEEE)** - The IEEE offers various grants and awards for research related to audio engineering, signal processing, and advancements in sound technologies, particularly in collaboration with universities.
- **Fraunhofer Society** - Fraunhofer offers research grants for technology development, particularly in areas like audio codecs (e.g., MP3, AAC) and immersive sound technologies. They collaborate with industries to support innovation in sound evolution.
- **The British Academy of Film and Television Arts (BAFTA)** - BAFTA supports advancements in sound design and audio technologies through its awards and grants programs. This is particularly relevant for companies working in entertainment and media sound technologies.

Venture and Startup Funding Programs

- **Techstars Music -** Techstars Music is a startup accelerator that focuses on innovative music and sound technologies. Companies in this program receive seed funding and access to networks that can help evolve sound tech products.
- **Y Combinator -** Y Combinator may provide seed funding to startups developing sound-related technologies, particularly those at the intersection of AI, machine learning, and audio innovation.
- **Sony Innovation Fund -** Sony's Innovation Fund offers grants and investments for startups innovating in audio technology, sound processing, and entertainment-related sound products.
- **New Media Ventures** - This organization funds technology startups that are focused on media innovation, including audio technologies that contribute to the evolution of sound in digital and communication platforms.

The following are similar to Notion for Student Organizations (Notion.so):

1. **Coda Focus:** Collaborative documents and databases.
   - **Key Features:** Coda is a powerful tool that allows users to create documents that act like apps. It offers templates, integrations, and a flexible workspace, which can be highly beneficial for educational planning, team collaboration, and tracking assignments or projects.

2. **Trello (with Power-Ups for Education) Focus:** Task and project management.
   - **Key Features:** Trello is known for its simple, card-based interface for task management. By utilizing Power-Ups and templates for education, Trello becomes a great tool for organizing class projects, lesson plans, and collaborative study tasks.

3. **Evernote Focus:** Note-taking and organization.
   - **Key Features:** Evernote has long been a favorite for students and educators, offering features like rich-text notes, syncing across devices, and integrations with apps like Google Drive. It is great for organizing study materials and personal knowledge management.

4. **OneNote (Microsoft Office 365 Education) Focus:** Note-taking and collaboration within the Microsoft ecosystem.
   - **Key Features:** OneNote is a digital notebook from Microsoft, popular in educational settings. It allows for real-time collaboration, multimedia notes, and integration with the entire Microsoft Office suite, which is commonly used in schools and universities.

5. **Airtable Focus:** Database and spreadsheet hybrid for flexible organizing.
   - **Key Features:** Airtable offers spreadsheet-like organization combined with powerful databases. It's useful for educators to manage classes, assignments, or research, and it also supports collaborative workflows.

6. **ClickUp Focus:** Task management with education templates.
   - **Key Features:** ClickUp offers a wide range of templates tailored for education, including assignment tracking, project planning, and grading systems. It's highly customizable and designed to streamline both personal and collaborative workflows.

7. **Asana Focus:** Task and project management.
   - **Key Features:** Asana offers a strong framework for organizing tasks, tracking projects, and collaborating with teams. It can be used by educators and students alike to plan coursework, manage group projects, and organize academic tasks.

8. **Basecamp Focus:** Project management and communication.
   - **Key Features:** Basecamp is a great tool for group collaboration, making it useful for team projects, communication between educators and students, and sharing documents. Its intuitive, simple interface makes it easy for students to adopt.

Cymatrax

Thank You

APPENDIX PAGE

Description for collegiate partnership

- Completed trials with the Department of Communication Sciences and Disease at James Madison University, headed by Dr Lincoln Gray, documenting the effectiveness of the signaling to the brain using the Cymatrax software, shows signs of higher college classroom testing scores and identified as a positive therapy to accelerated cognition in PTSD and Autism students.
- Meeting with Dr. Craig Powell (Head of Neurobiology at UAB), we have designed a simple Social Trial, based upon a clinical trial outline. This trial will take one hour of volunteer student (30-40) involvement, and is scheduled for completion mid April 2023 at JMU. “When we measure 55% or more positive response to the Cymatrax technology, this will be enough for me to sign off on and send it to Autism Speaks and get funded $1-3M for clinical trials for autism.” Dr. Powell has been funded by Autism Speaks twice before and has a good relationship with them.
- Already, 66.04% of users going to the previous Cymatrax website and who have reported back their own experience from the Take the Challenge page, have correctly identified which column, A or B, has been treated with the Cymatrax technology. Not because of how it sounds, but because of the way they FEEL. More energy and higher focused attention. (desktop testing is preferred)
- $400k is budgeted for the offices identified at the Austin, TX location. Interns will become available from the University of Texas, Austin. Salaried or contracted professionals will be engaged to outline and oversee all intern work from the $1M of initial funding.

Continued social trials will also give a firm foundation for all other sales as documented proof of concept.

Clinical Research

"100 million people are exposed to dangerous environmental noise due to traffic, personal listening devices and other sources" **National Institutes of Health,** Open Access Maced J Med Sci v.7(17); 2019 Sep 15 PMC6901841

"Noise exposure therapies offer a seductive short-term solution for relief but, in the long term, undermine the functional and structural integrity of the central auditory system and the brain" **JAMA,** Otolaryngol Head Neck Surg. 2018;144(10):938-943. doi:10.1001/jamaoto.2018.1856

"we have shown that acoustic white noise selectively decreased working memory accuracy" **National Institutes of Health,** Dec 15, 2005

"A simple change in frequency and amplitude puts the cells in motion, guides them to a new position and holds them in place." **Stanford Medicine,** May 21, 2018

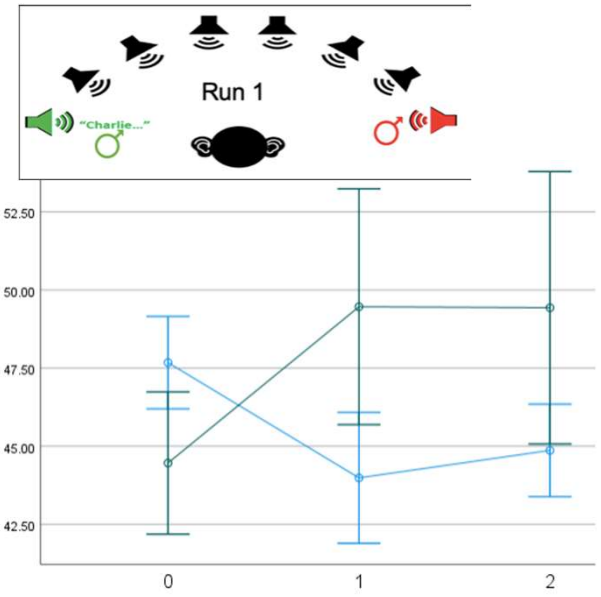
"streamlined music can have a beneficial impact on cognition without any obvious costs, while at the same time it may potentially boost mood" **Innovation Lab, Institute of Noetic Sciences, Mossbridge,** 2016

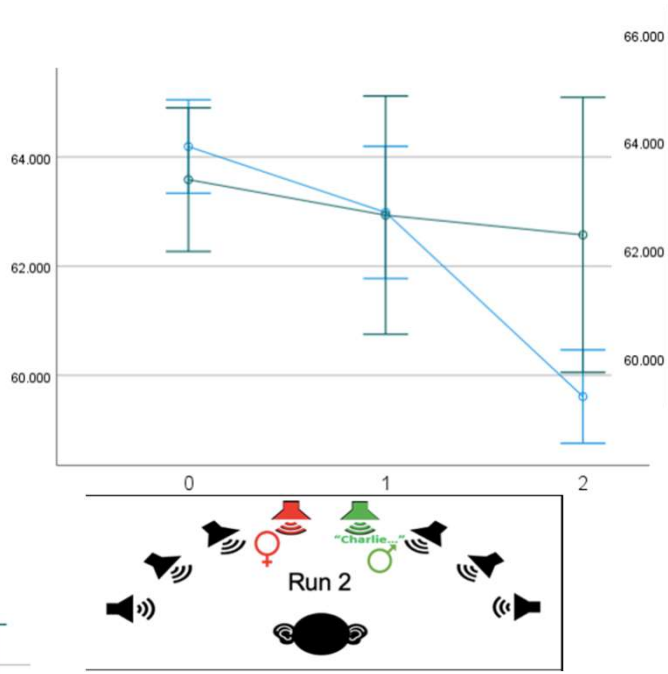
Awarded 2nd Place Wharton School Entrepreneur Accelerator Competition

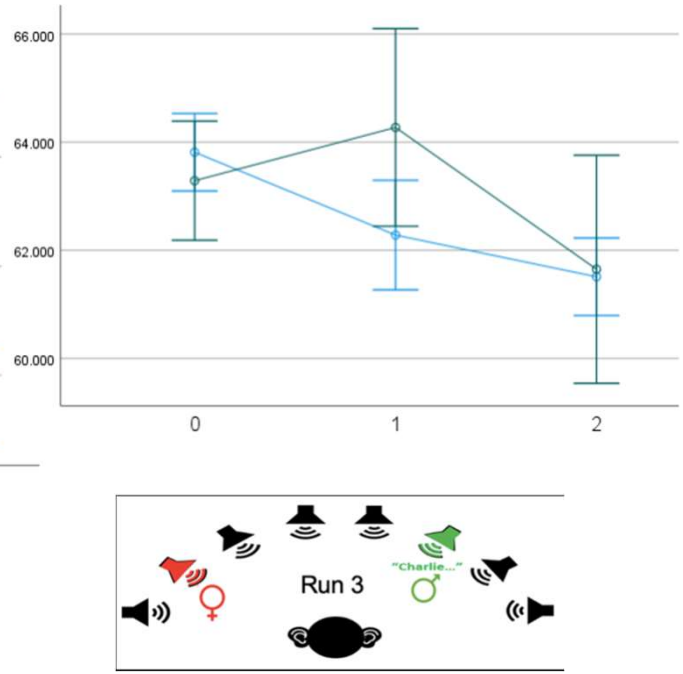
On Y-axis ‘good’ is up. Measure is threshold level of distracting signal (‘Ready [different callsign go to different color/number] Now’).

Green lines are with Cymatrax filtered Signal ‘Ready Charlie ..’ blue are from Hales (2024) unfiltered

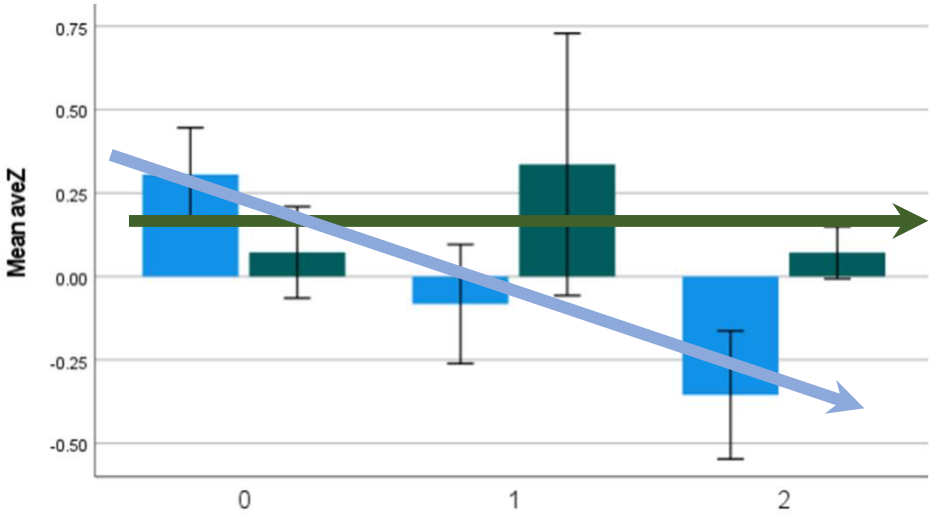
X-axis is 0 if NT, 1 if suspected ADHD, 2 if formal Dx of ADHD.



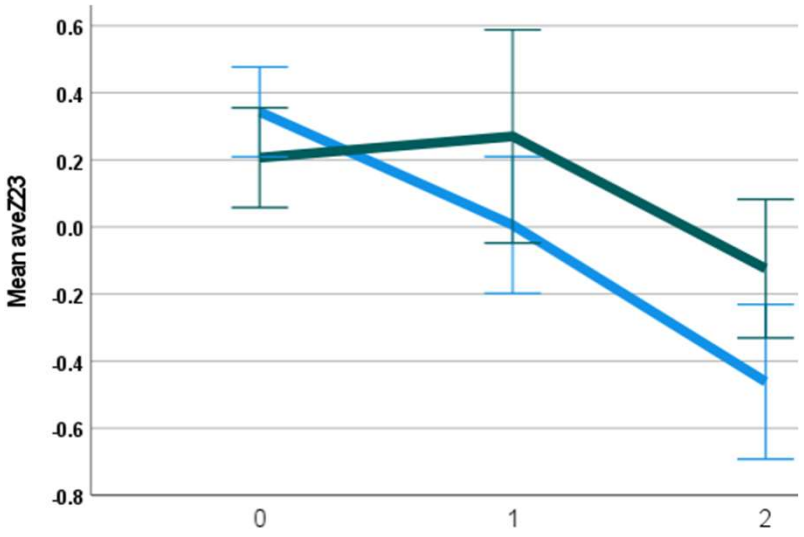




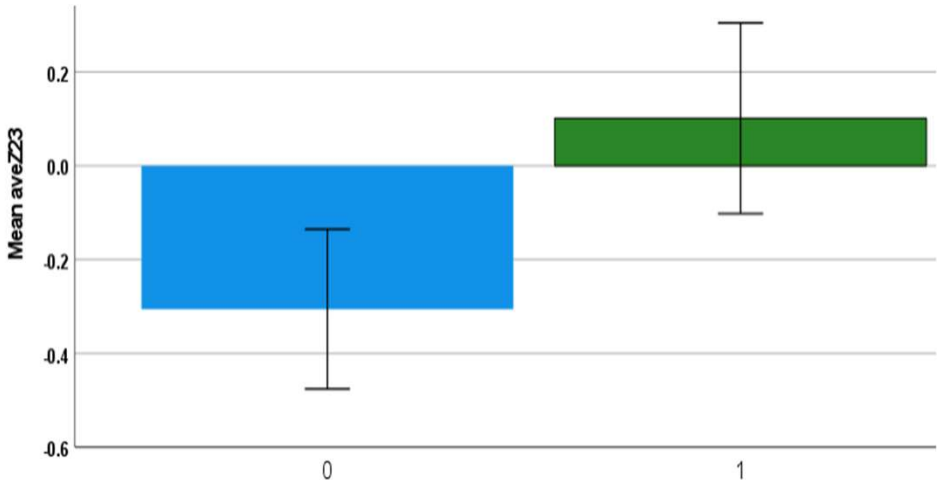
Raw data in Runs 1 -3, runs with increasing ease.
Run 1 with same voice maximally distant.
Run 2 with male signal and female distractor, maximally adjacent
Run 3, different voices at random locations but in opposite hemifields



All 3 thresholds normalized and averaged Data suggest that Cymatrax filtering prevents the normally occurring decline in performance as NeuroDiversity increases (note green arrow with 0 slope and blue arrow with –ve slope; arrows are imagined trends across levels of NT/ND)



Normalized and averaged over Runs 2 and 3 only



Normalized and averaged over Runs 2 and 3 and now selecting only real and suspected ADHD listeners. X-axis is Cymatrax filtered signal (1) or not (0). Difference approaches statistical significance in the predicted directions

Group Statistics

	Brid	N	Mean	Std. Deviation	Std. Error Mean
aveZ23	0	39	-.3055	1.06296	.17021
	1	7	.1014	.53765	.20321

$t_{16.1}$=1.5, p=.07 1-tailed, d=.4

Power Analysis Table

	N1	N2	Actual Power[b]	Test Assumptions Power	Std. Dev.[c]	Effect Size	Sig.
Test for Mean Difference[a]	78	78	.800	.8	1	.400	.05

a. One-sided test.

b. Based on noncentral t-distribution.

c. Group variances are assumed to be equal.

In conclusion, with exactly double the number of ND listeners without Cymatrax and 71 more listening with Cymatrax, there would be an 80% of finding a significant difference in favor of Cymatrax.