

NexBioHealth

Shaping Futures

August 2025 | ISSUE 4

The Art of Healing: Where Medicine Meets Creativity

ART MEETS MEDICINE

Discovering the Art of Healing
Respira Flora
Sleep Medicine Works
Eye Contact

HEALTH EQUITY & ENGAGEMENT

Bridging Medicine and Art
Renaissance Man
Savaro's Children's Health Literacy
Project

CAREER DEVELOPMENT

Dr. Mun K. Hong's Reflection
Yale Medical Education Day
A Senior Surgen's Perspective
Book Review: Scales to Scalpels

STUDENT HUB

Dear Mentor
First Narrative Medicine Workshop
The Path to Music Therapy and
Why It Matters
Inclusive Education is Life Saving

UPCOMING ISSUE

AI in Medical Education



Bridging Medicine and Music for Healing Lisa Wong, MD

Assistant professor of pediatrics at Harvard Medical School,
Arts education advocate, and co-director of the
Arts and Humanities Initiative at HMS

NexBioHealth: What Makes It Unique

NexBioHealth is a global magazine dedicated to empowering and connecting medical students, residents, and budding physicians worldwide. The magazine is a dynamic platform designed to foster global networking, knowledge sharing, research collaboration, and professional growth for young healthcare professionals.

Vision

NexBioHealth aims to foster an international community where future leaders in medicine can learn, collaborate, and grow together. Building on the 10-year legacy of the World Asian Medical Journal (WAMJ), NexBioHealth expands its scope to engage a broader, global audience, creating a platform for medical professionals worldwide.

Key Features

01. Career Development & Mentorship:

This section offers guidance and mentoring to help young medical professionals navigate their career paths. It includes contributions from experienced physicians and focuses on professional growth, education, and research opportunities.

02. Diversity, Equity, and Inclusion (DEI):

Focused on addressing health equity and global health, this section highlights innovations in public health, healthcare delivery, and international healthcare innovations. Through in-depth articles and interviews with global health leaders, we aim to promote discussions around equitable healthcare access and inclusion worldwide.

03. Global Networking for Physicians:

NexBioHealth connects medical students, residents, and physicians worldwide by featuring leading organizations, providing networking opportunities, and facilitating international collaborations.

Conferences: This section highlights important medical conferences and events around the world, providing readers with opportunities for learning and professional development.

04. Medical Report & Healthcare Updates:

A comprehensive section delivering the latest news in medicine and healthcare, covering advancements, policy changes, and industry trends.

05. Student and Resident Engagement:

NexBioHealth is committed to representing the interests of medical students and residents through the formation of the Student Advisory Committee (SAC). These committees help shape the magazine's content, organize events, and promote mentorship opportunities.

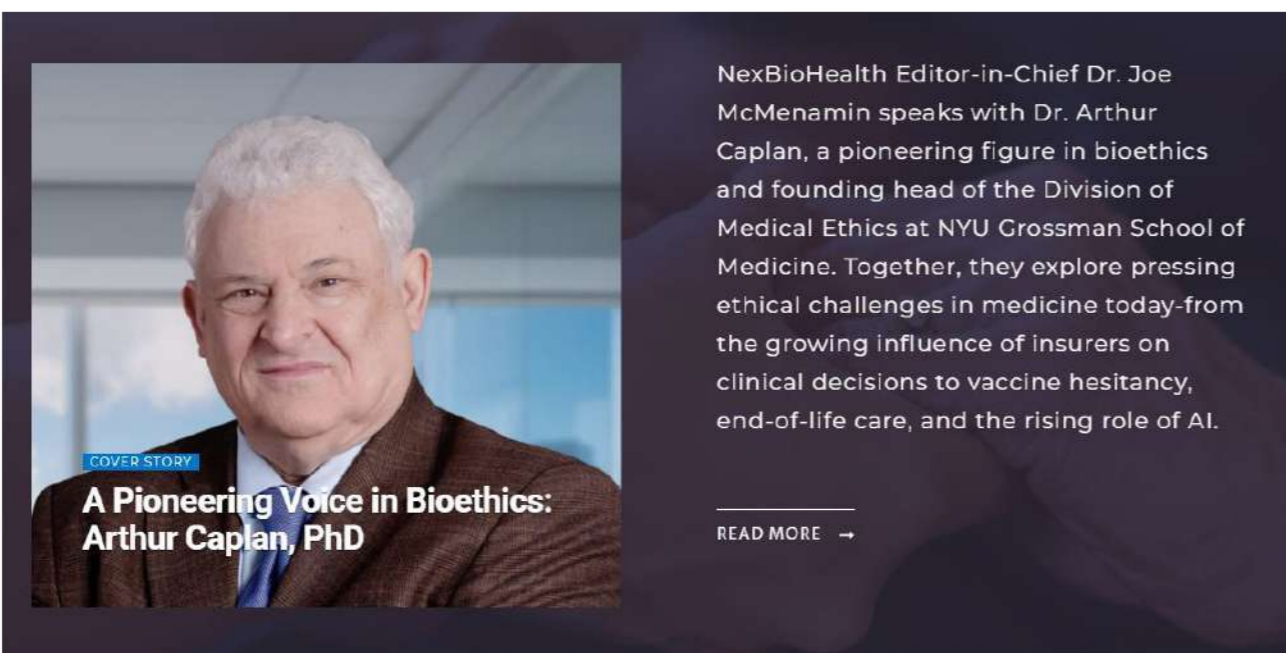
NexBioHealth is more than just a publication—it's a vibrant community and resource hub for the next generation of medical professionals. By bringing together students, residents, and physicians from across the globe, NexBioHealth is dedicated to supporting the growth and development of future leaders in the medical field.

NexBioHealth
Shaping Futures

MEDICAL NEWS ▾ CAREER DEVELOPMENT ▾ NETWORKING ▾ MAGAZINE ▾ ABOUT US ▾ 🔍

May 2025 | ISSUE 3 | PDF

← PREVIOUS ISSUE



NexBioHealth Editor-in-Chief Dr. Joe McMenamín speaks with Dr. Arthur Caplan, a pioneering figure in bioethics and founding head of the Division of Medical Ethics at NYU Grossman School of Medicine. Together, they explore pressing ethical challenges in medicine today—from the growing influence of insurers on clinical decisions to vaccine hesitancy, end-of-life care, and the rising role of AI.

COVER STORY
**A Pioneering Voice in Bioethics:
Arthur Caplan, PhD**

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PUBLICATION NEXUSHEALTH MEDIA, INC.

EDITORIAL STAFF June Baik, Raveena Baskaran, Mariam Farag, Grace Ham, Kaity Kim, Kendrick Yu, Design Camp

MAIN OFFICE 161 Tweed Blvd
Nyack, NY 10960
www.nexbiohealth.org
Info@Nexbiohealth.org

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The NexBioHealth Editorial Board comprises a diverse group of physicians and healthcare professionals from various specialties who are recognized as thought leaders with innovative ideas and notable accomplishments.

This distinguished group is united by a shared mission: to make NexBioHealth a unique platform for addressing the most pressing issues in medicine and healthcare today and into the future.

Their goal is to nurture, motivate, and inspire the next generation of healthcare professionals.

Diverse Expertise

Unlike the typical editorial boards of academic journals, the NexBioHealth Editorial Board is intentionally diverse. It includes physicians from major university settings, private practices, and community health centers, not only in the United States but also globally. This diversity ensures that the magazine reflects a wide range of perspectives and experiences, making it relevant and impactful for a global audience.

Interdisciplinary Approach

In addition to physicians, the board includes prominent individuals from the scientific, legal, health industry, and public health fields. This interdisciplinary approach is crucial for interpreting and providing insights into medicine and healthcare from unbiased and diverse viewpoints. By integrating expertise from these various fields, NexBioHealth is positioned to offer comprehensive and balanced coverage of the issues that matter most to healthcare professionals and the communities they serve.

Supporting Young Minds:

To further enrich the content and ensure it resonates with the emerging generation of medical professionals, NexBioHealth has established two additional boards:

Student Advisory Committee (SAC)

- The SAC is designed to represent the interests and perspectives of medical students. Members provide feedback on articles, suggest relevant topics, and help tailor the content to meet their peers' needs. They also liaise between NexBioHealth and medical schools, assisting with student outreach and event coordination. Their involvement ensures that NexBioHealth remains a vital resource for students, providing content that is both educational and inspiring.

Resident Physicians Advisory Committee (RPAC)

- The RPAC represents residents across all specialties, offering valuable insights into the challenges and opportunities faced by physicians in training. The RPAC helps guide the magazine's content by contributing articles, organizing networking opportunities, and supporting mentorship programs. Their participation ensures that the magazine addresses the specific needs of residents, helping them navigate their careers with confidence.

A Growing and Evolving Board:

Our editorial board is in the beginning phase and continues to grow, inviting more great minds to join us in our mission. As we expand, we are committed to bringing together a broader range of expertise and perspectives to enhance the magazine's quality and impact. We seek thought leaders and innovators who share our vision to join us in making NexBioHealth a powerful voice in medicine and healthcare.

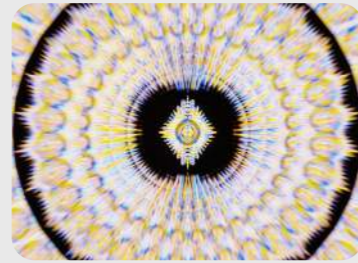
A Truly Unique Platform:

NexBioHealth's combination of a diverse, interdisciplinary editorial board and the inclusion of the SAC and RPAC makes it a truly unique platform. It is a magazine that not only raises important issues in medicine and healthcare but also fosters a collaborative environment where young minds are nurtured, motivated, and inspired. NexBioHealth is committed to being more than just a publication-it is a community and a resource for those who aspire to lead and innovate in the healthcare field. Through the collective efforts of its editorial board, students, and residents, NexBioHealth aims to be the best platform for shaping the future of medicine and healthcare.



Bridging Medicine and Music for Healing: Lisa Wong, MD

Dr. Lisa Wong, a pediatrician and violist, integrates music with medicine to promote healing. Her work with the Longwood Symphony Orchestra and in the NICU highlights how music benefits both patients and healthcare providers. Dr. Wong encourages us to view the intersection of medicine and music as a holistic approach to care, emphasizing creativity, attentiveness, and collaboration in medical practice.



Discovering the Art of Healing

Creative expression conveys human experiences beyond clinical language, using immersive art to deepen our understanding of health and support personal healing and patient care.



Bridging Medicine and Art: VCU's Innovative Approach to Healing and Education

VCU's Medicine, Arts, and Humanities program blends art with healthcare to boost critical thinking, empathy, and resilience in medical students.



Renaissance Man: Aaron Anderson, PhD

How Aaron Anderson is transforming medical education through art in theater?



Savaro's Children's Health Literacy Project

Using creative outreach, family collaboration, and community-based education, this project teaches children early stroke recognition, fostering health equity and prevention from a young age.



The Future of American Healthcare: A Senior Surgeon's Perspective on Value-Based Care and Preventive Medicine

Dr. Sanghyun Alexander Kim advocates for value-based care and preventive medicine to improve patient outcomes, reduce costs, and create a more sustainable healthcare system.



The Path to Music Therapy and Why It Matters

Music therapy uses music to enhance patients' cognitive, emotional, and social well-being, promoting autonomy and long-term positive changes in their quality of life across various healthcare settings.

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From the Publisher



**Chul S. Hyun,
MD, PhD, MPH**

Div. of Digestive Diseases
Yale School of Medicine

Dear Readers,

Sometimes, healing begins not with data or diagnosis, but with a song, a brushstroke, or a shared story. This issue of NexBioHealth celebrates those moments—where the art of medicine and the art of expression meet.

At NexBioHealth, our mission has always been to explore medicine as a dynamic, evolving field—one that embraces not just new technologies and discoveries, but also new ways of seeing, listening, and understanding. In this issue, we turn our attention to the creative spirit that often lives quietly within clinicians and patients alike. From visual artists and musicians to storytellers and poets, these voices remind us that the practice of medicine is, at its core, a deeply human endeavor.

Art and music can reach emotional depths that words cannot. They allow us to feel what patients cannot always say, to make meaning where data alone falls short, and to bridge the silences that often surround illness and healing. In doing so, they remind us of the limits of our knowledge—and the humility and imagination we need to move beyond them.

As our Editor-in-Chief, Dr. Joe McMenamain, has beautifully previewed, this issue features a rich diversity of stories: pediatricians who compose, performers who teach communication, patients who express themselves through painting or dance, and yes—poets too. Each contribution helps illuminate the lived experience of illness and care in ways that are as moving as they are instructive.

This issue also speaks directly to our younger readers—the next generation of physicians, scientists, and healers—who will shape the future of healthcare. We hope these pages inspire them to think expansively, act compassionately, and never stop learning from the full breadth of the human experience.

We invite you not just to read this issue, but to share it—and to carry its spirit into your own work.

Warmly,

Chul S. Hyun, MD, PhD, MPH



**Joseph P. McMenamain,
MD, JD, FCLM**

Christian & Barton Group, LLP

Dear Reader,

Welcome to the latest issue of NexBioHealth. You're in for a treat. Our theme is "The Art of Healing: Where Medicine Meets Creativity." In my time to date as editor of our magazine, and in a similar role at its predecessor, the World Asia Medical Journal, I don't think I have ever had as much fun putting pieces together.

In training, and often in practice, acquiring and honing the knowledge and skills needed to provide competent, compassionate health care is so exacting that it is often exceedingly difficult to do anything else. In this issue, we introduce you to professionals who have managed to practice their artistry even while caring for the sick and injured. You'll read about the contributions of artists and the arts both to the education of health professionals and to the care of patients. Some of those you'll meet in these pages treat patients with recreational therapy, music therapy, or art therapy. This kind of interdisciplinary focus is part of what makes NexBioHealth such a unique, lively, and valuable publication. It's an antidote to narrowness.

Among those you'll learn about an artist who works with virtual reality in palliative care, an actor who teaches young doctors about communicating and relating to others, and a neurologist who collaborated with his own five-year-old son to write a book for children on how even they can help their grandparents and other seniors by recognizing some of the classic signs of stroke. We provide here stories on art in the service of meditation, digital images illustrating the value of sleep and of sleep medicine, and a pediatric fellow who engages in creative writing, poetry, and songwriting. It's inspiring to learn of pediatric oncology patients who join in plays, or painting, or dance. You'll learn about narrative medicine and the benefits it confers, and wonder afresh on how anatomy gives rise to splendid visual art. My good friend, our publisher Chul Hyun, MD, PhD, reviews a book about physicians who blend the practice of medicine with the performance of classical music.

A surprisingly large number of med schools now offer arts programs, and they seem to be joined by more and more each year. If I may be permitted a wee bit of hometown puffing, that of Virginia Commonwealth University (VCU), here in Richmond, may be among the most vibrant. In a real innovation, VCU endocrinologist John Nestler, MD, formerly Chief of Medicine, served as physician in residence at the School of Art, "one of the first residencies of its kind in an arts school." VCU's health professional schools have formed alliances with VCUarts, VCU's art and design school, blossoming in collaborations among the VCU School of Nursing, the Department of Art Education, and the Virginia Museum of Fine Arts.

Among the many impressive figures featured here is Lisa Wong, MD, pediatrician and musician.

The child of an immigrant to these shores, whose own story is a classic in itself, she was part of a family string quartet as a child. As an adult, she plays with the Longwood Symphony Orchestra, the orchestra of Boston's medical community. Dr. Wong serves on the boards of the Boston Public Schools Arts Initiative and of the Conservatory Lab Charter School, to ensure that children in Boston have access to the arts. In this issue, Dr. Wong tells us about her book *Scales to Scalpels: Doctors Who Practice the Healing Arts of Music and Medicine*, a "bouquet" to her colleagues in the LSO.

Not all of our pieces are art-specific. In keeping with the magazine's emphasis on variety, we feature a piece by an Interventional cardiologist on the value of a mentor, a story on Med Ed Day, highlighting advances in medical pedagogy, and a senior surgeon's perspective on value-based care and preventive medicine, contributed by Dr. Alex Kim. The smorgasbord awaits. Eat hearty.

Joseph P. McMenamain, MD, JD, FCLM

From the Editor-in-Chief

Connect
with Future
Medical
Leaders
Worldwide!

www.NexBioHealth.org

We invite you to become part of a vibrant community of medical professionals, where experienced leaders and emerging physicians from around the world collaborate, share knowledge, and drive the future of healthcare. This global network fosters mentorship, research collaboration, and leadership development across generations, ensuring that the next wave of medical leaders is well-equipped to tackle the challenges of tomorrow.

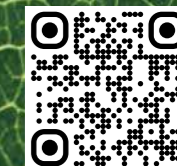
For more information or questions email: info@nexbiohealth.org



InTro

DISTAL ACCESS INTERMEDIATE CATHETER

Good crossibility,
Especially for tortuous vessel.
Coil + braiding



Art Meets Medicine

In this issue, we're doing something different—and for a very special reason. Instead of our usual Medical Report, we're honored to feature a deeply moving collection of visual narratives in a new section: Art Meets Medicine. These works, created by clinicians, students, and public health artists, reflect the dynamic and evolving relationship between science, healing, and human expression.

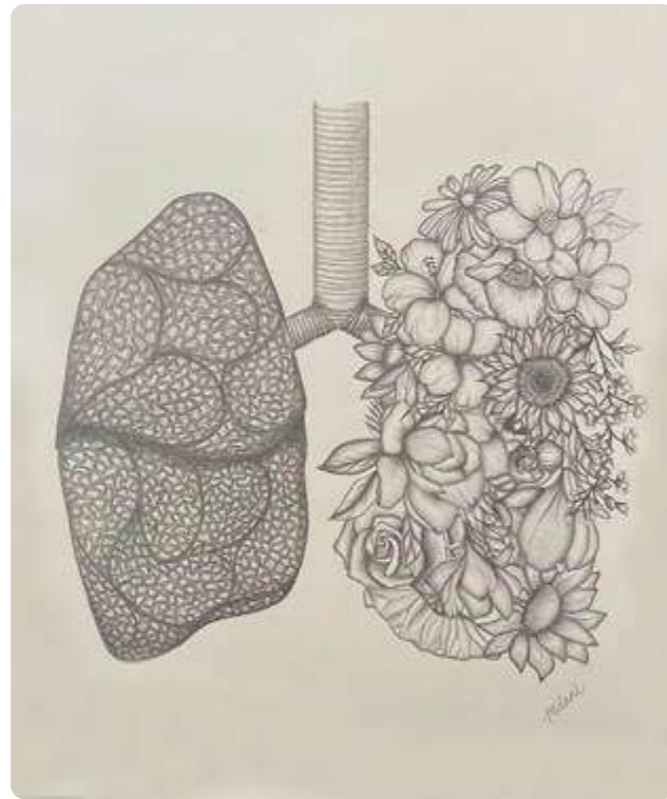
At a time when medicine faces rapid transformations—through advances in AI, shifts in care delivery, and growing calls for equity and empathy—these creative voices remind us of the deeper questions that underlie our work: What does healing look like? How do we make sense of illness, recovery, and connection beyond charts and scans? And how can beauty, vulnerability, and imagination become tools for reflection and care?

From immersive digital installations to intimate anatomical sketches, the pieces featured here represent more than talent—they reflect a way of seeing. A way of honoring complexity, sparking curiosity, and opening new spaces for dialogue and meaning in medicine. We hope this section resonates with you as much as it did with us.

From the Editors

Respira Flora

by Milani Patel



This piece came from, quite simply, my love of art and my love of medicine. It reflects the mirrored relationship between the human body and the natural world. One lobe of the lungs looks how it should, while the other blossoms into a garden, symbolizing how closely our health is tied to the environment. Our lungs rely on the oxygen produced by plants and trees, just as flora thrives on the carbon dioxide we breathe off. This exchange is not just biological, it's beautiful. In a way, nature becomes both a form of art and a form of medicine. Through this piece, I wanted to explore how healing doesn't just happen in clinics or hospitals, but also in the quiet balance between breath and bloom.



Artist: Milani Patel

Milani Patel is a first year medical student who continuously looks for new ways to combine my worlds of art and medicine. She grew up in Tampa, FL and has had an interest in the arts for all her life. Her love for medicine came a bit later when she found that science and innovation was where she saw her future career.

Discovering the Art of Healing

by Mary L. Peng, MPH, MS

What drew you into combining art with medicine, and how has this first inspired your artwork?

I'd say a bit of chances and choices! In my last semester of college, I took a class on human development and mindfulness, which was a quite last-minute decision. Since it was one of the last classes I took in undergrad I wanted to just have a bit of fun with it. For most of the self-reflection assignments, instead of using words, I created visuals to represent my journey with mindfulness, and that sparked the idea to create a platform where I combined visual art with mindfulness reflections, which eventually morphed into my mental health x graphic design account @innermagicart, and the design process eventually led me to think about neuroaesthetics and the cognitive process behind multisensory perception and mental health. There was another instance that I often go back to when thinking about "art" (I don't really like to use the word art when talking about its overlap with medicine and health; I will circle back to this later) and **the experience of our bodies**, which of course encompasses health but also extend to our general psychosomatic conditions like pain, joy, and excitement. A few years ago I stumbled upon an immersive exhibition in Chelsea called *The Life of a Neuron*. It was one of those experiences that stirred something deep within me. I remember sitting on the floor, in front of these enormous 360 degree projections of neurons firing, signaling, and connecting. It was as if, in that moment, I was both the observer and the observed, part of the same neural network that I was observing, being simultaneously outside and within, both human and something beyond human. I must confess, I teared up a little during that exhibition, but it was not sadness, in fact it was the opposite, it was the elation that I felt deep in my bones, the kind that makes you shake with excitement and a little nerves for all the things that you want to explore but don't know what to expect yet.

I started to work on immersive art pieces after returning from a trip to New York City, hoping to reflect on and learn about the intersection of science and the arts / humans' aesthetic experiences overall really. The vision behind one of the first immersive pieces I made, "The Breathing Body The Breathing Mind", was to create a communal meditative space where we can just let our minds wander, dive into the unexpected, and embrace

our sensorial experience as we move between the bodily space we inhabit physically and the mind space, where the visuals can bring us into a deeper state of reflections, thoughts, and sensations. I timed my breathing pattern and mapped that cadence to create a constantly contracting and expanding space of perpetual motion and symmetrical patterns and bursts of colors. Creative practices like this later became an articulated passion of mine and also a principle for my research in health - the intersection of the arts and sciences not as end products, like a piece of painting or a piece of equipment, but how art and science serve as ways of seeing, recognizing and inquiring (circling back to why I don't want to overuse the word art, but be very intentional about conceptualizing it as a way of seeing and recognizing), as ways in which we explore our relations with beauty, with the world, ways for us to think about how we see the world and even ourselves, and why that matters.

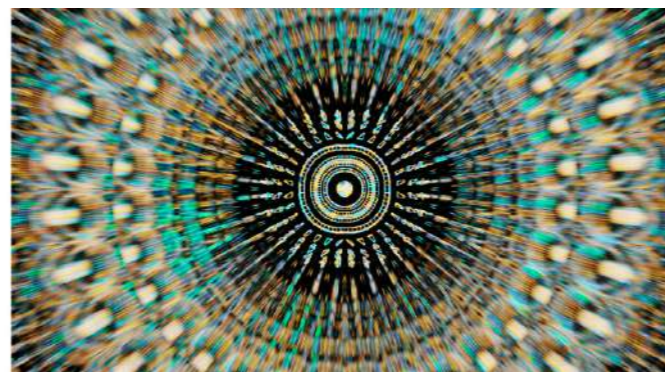
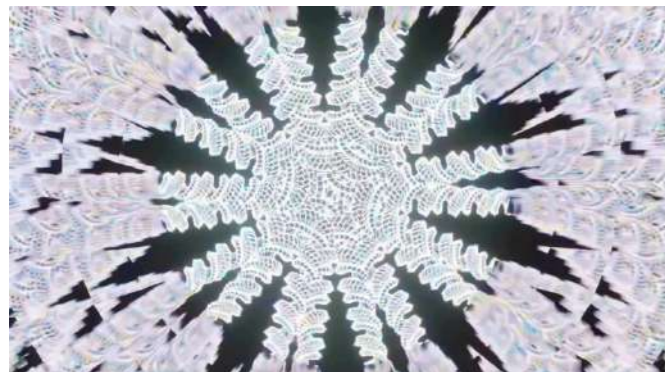
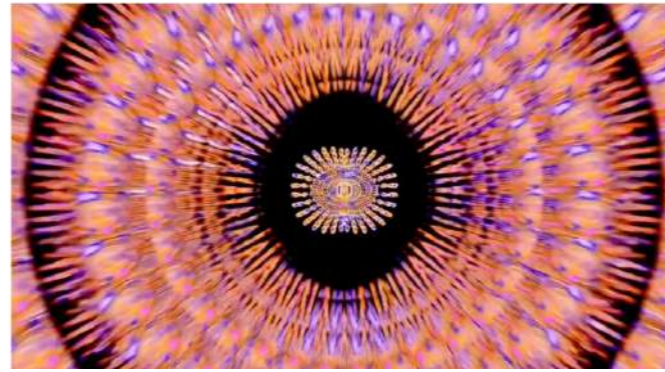
An important note, while certain pieces I make are about exploring the intersection of health and aesthetics it's absolutely not always about that. Creating should come with its own unbridled freedom; I don't want to devalue any creative process or anyone that creates simply for the joy and fun of creating, which is extremely valuable and arguably the most organic overlap between art and health. I don't want to box anything into jargons and definitions. The joy that comes from the pursuit of beauty, not in an academic sense or professional sense, just in a human sense, I think is one of the greatest practices of exploring the intersection of art and health.

Is there a particular piece you've created that feels especially personal or impactful to you?

Different pieces resonate with me in different ways depending on where I am in life, but a recent one I'd say is an immersive piece I created to induce mindful breathing / wandering. Here's the link https://drive.google.com/file/d/1FQZ9bMUu2qRh1XEIzvfAQ2d72UAl_-j/view?usp=sharing

It was born from a desire to create a sensory experience, making the medium of the creation part of a healing process. It felt especially personal for me because when I presented it at High-Tech Medicine & Soft Touch Healing - Advancing Innovation in Integrative Health (Osher Center for Integrative Health at Brigham and Women's Hospital and Harvard Medical School. December 2024), someone approached me afterwards that said that's exactly what they were looking for in their daily meditative routine and therapy. I felt extremely grateful to hear that. It made the countless hours and laborious process rendering that piece completely worth it!

Also, this piece is probably the best example of my understanding of the intersection of aesthetics, aesthetic experiences really, and health. One of the things I always clarify when I talk about "art"



and medicine or health is that what interests me the most about this intersection is not how art as a commodity interacts with health but the unpacking of how beauty and aesthetic experiences and what it reveals about the embodied experience of health.

Beauty is not merely something to be admired; I believe it's a fundamentally multifaceted human experience. Actually the term "aesthetics" originates from the Greek word *aisthētikos*, which means "pertaining to sense perception" or "sensitive." This, in turn,

derives from *aisthēta*, meaning "things perceived by the senses," and the verb *aisthanesthai*, which means "to perceive" or "to feel." This piece in a way is my way of expressing what interests me the most about of "art", i.e. the aesthetic experience of it and the way of seeing, experiencing, and exploring that it opens our senses to, the experience and perception of the senses, relating to how we respond to what we see, hear, and feel. I think the same can be pondered about how we think about mental health. It is this kind of "blurring" process that intrigues me the most about understanding health through both scientific and artistic thinking.

Process & Practice

Can you share an experience where art helped communicate something that medical terminology or data couldn't fully capture?

At Yale Healthcare Conference last year, I curated an art exhibit entitled "Visions, Voices, Verses: Art & Poetry in Healthcare," inviting conference attendees to immerse themselves in an exploration of health and illness through the lens of art, sound, music, and poetry, where every piece was created by patients and healthcare workers / researchers themselves, pieces about their lived experience of health and illness. I also did a project where I used generative visualizations to help people explore their episodes of hallucinations, where once again I was not the artist but just a creator of a medium through which others can find a different and hopefully helpful way to understand and voice their own experiences.

The goal of the "Visions, Voices, Verses" exhibit was to tell stories, raw, lived stories about people's own health and illness. The emotional lens through which these real experiences hoped to show how these compounded forms of expression could hold complexity and contradiction in a way that clinical language perhaps cannot,

the facet of healthcare that invites empathy rather than explanation. In the case of using generative visualizations to help individuals externalize and explore their experiences of hallucinations, again I wasn't the artist of the content, but rather a medium—one through which participants could visually map and engage with their internal episodes. Again, what emerged were not diagnostic descriptions but deeply personal, resonant portrayals of experiences. I hoped to create a form of communication that made space for ambiguity, emotion, and sense making that may get lost in the language of charts and metrics. Ultimately, I think both precision and room for the nuances and irreducibility of human emotions and experiences deserve a place in how we understand human conditions, medicine, and healthcare.

Creativity in Medicine as a Lifelong Practice

What advice would you give to students in medicine who want to explore their creative side but are not sure where or how to begin?

Haha I get nervous whenever I'm asked to give advice. Again, I really can't claim that I have good or useful advice, but what I could say is that based on my personal experience, "play, play, just play" is a very liberating mentality for me. And decide whether this is something you want to pursue for your own healing, or a professional endeavor, or something else; figure out the capital you need to actualize that, which could be quite different based on what you are seeking, just a box of crayons or a meticulous journey to establishing legitimacy through knowledge creation. There's nothing wrong with whatever one decides on; just stick to it unapologetically and love it unapologetically and have fun unapologetically.



Artist: Mary L. Peng, MPH, MS

As a public health researcher, Peng focuses on implementation science and health system optimization through digital interventions, user-centered design, and tech innovation. As a self-taught artist, Peng works across digital art, collages, photography, and traditional painting. Prominent bodies of Peng's designs have been featured at United Nations Headquarter, United Nations SDG Action Campaign, Photoshop, Adobe Creative Cloud, Visual Spirits, Shockbox Gallery, and Bromefield Gallery, etc. Her immersive digital compositions explore abstraction of data and Bodies in ethereal forms, humans' digital-physical co-existence, and space in fragmented forms, and her intuitive expressionist paintings, exhibited at the New Britain Museum of American Art, View Arts Center, The James Library, etc., explore the physical embodiment of abandon and the liminal space between sensibility and intentionality. Peng earned her Master of Science in Media, Medicine, and Health from Harvard Medical School, Master of Public Health in Social and Behavioral Sciences from Yale University, and Bachelor of Arts in Global Studies with Double Minors in Philosophy and Anthropology from University of Virginia.

Sleep Medicine Works: The Difference is Night and Day

by Dr. Swathy Karamchedu



This digital illustration shows the transformation that happens when sleep medicine steps in, through a split portrait of Fukuro, an anthropomorphic owl. One side is dim and disheveled - messy plume, dark circles, slouched posture, heavy reliance on coffee and stimulants, and a broken sleep schedule, all representing chronic exhaustion. The other is bright, alert, and grounded, with subtle details like a CPAP mask and a regular and fulfilling sleep routine. The transition between the two sides is where the story lives. Sleep medicine isn't about "just getting more sleep," it's about actually feeling human again. It is about reclaiming clarity, health, and energy. This piece is a reminder that healing is real, and better sleep is possible.



Artist: Swathy Karamchedu, MBBS, MSc, MMSc

Dr. Swathy Karamchedu is a physician, researcher, health communicator and artist who works at the intersection of art and health education to promote sleep health among younger populations. She is currently the Co-Founder of Sleep Doodles, a health education initiative dedicated to promoting pediatric sleep health and overall well-being to nurture a generation of well-rested, sleep-savvy kids who will become well-rested adults.

Eye Contact

by Pepper Powell



I drew a picture of my own retina, using a photograph from my old job. The optic nerve (left) channels blood and nervous impulses from the retina to the brain. Each eye has a blind spot at its optic nerve, but the brain is trained not to notice it. In the center of vision is the macula, the focal point of sight and the center of the retina. If you look at the center of the picture, both your maculas are pointing directly at my macula. Getting to know people is what I love about medicine, so I wanted my piece to represent that.



Artist: Pepper Powell

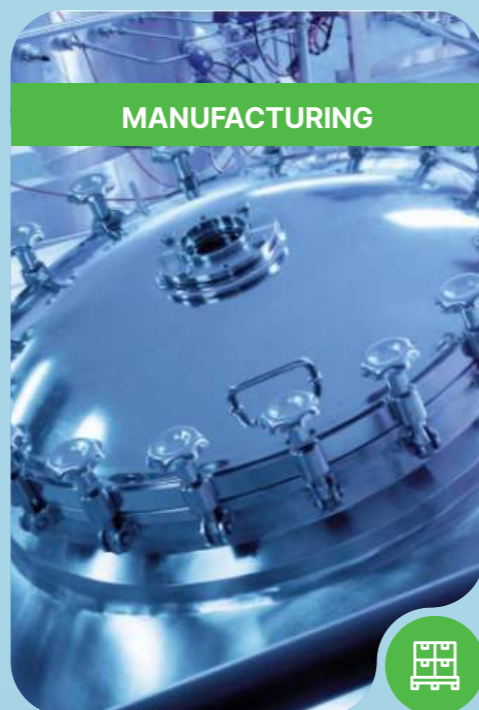
Pepper Powell is a transfem M1 from West Orange, New Jersey, who has been drawing all her life. She worked in ophthalmology before applying to medical school. Her favorite part of medicine is talking to new and interesting people every day, so she is looking forward to spending more time in the clinic.

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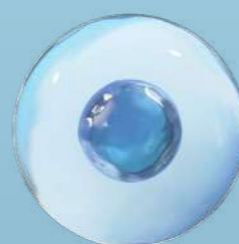
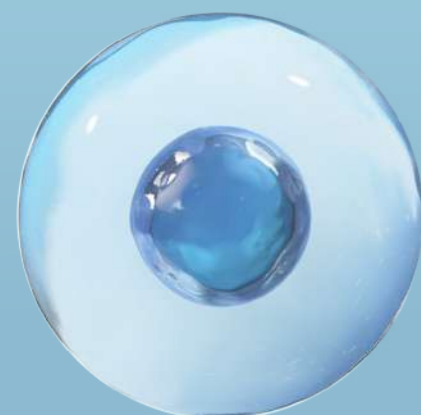
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[6]

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[6]

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[11]

products in development^{7*}

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approved biosimilars by 2030



cGMP, current good manufacturing practice; EMA, European Medicines Agency; GMP, good manufacturing practice; R&D, research and development; FDA, US Food and Drug Administration.

*Statement accurate as of [August 2024].
FDA, US Food and Drug Administration; R&D, research and development.



Bridging Medicine and Music for Healing

Dr. Lisa Wong

Photo by Jennifer Nourse

What does it mean to listen—not only to patients, but to silence, uncertainty, beauty, and becoming?

This question reverberates through the life and work of Dr. Lisa Wong, a pediatrician, violist, educator, and longtime leader of the Longwood Symphony Orchestra. In this conversation, Dr. Wong doesn't simply trace a path at the intersection of music and medicine—she invites us to imagine a practice where the two are inseparable.

From late-night NICU duets to building musical bridges between hospital wards and public schools, her story isn't about balancing separate callings, but about weaving them into a shared language of healing. Through her reflections, we witness how attention can be a form of care, how art can hold what data cannot, and how medicine—at its best—requires both rigor and resonance.

We share this interview not just to spotlight an extraordinary physician-musician, but because Dr. Wong's vision feels urgent. At a time when medicine strains under the weight of speed, scale, and systemic noise, her work reminds us that attentiveness, creativity, and collaboration are not luxuries—they're lifelines.

From the Editors

Your journey beautifully bridges the worlds of medicine and music. Could you share how those two paths first came together in your life?

I'm originally from Honolulu, Hawaii. After WWII, my father, who grew up in poverty, went to Northwestern Law School in Chicago on the GI bill. This changed his life. He went on to become the first Chinese-American judge in the U.S. federal courts. While he was in Chicago, my father fell in love with classical music - so much so, that when he had a family of his own, he was determined to make sure that my four siblings and I would have the opportunity for music education that he never did. My mother, an elementary school teacher, facilitated a rich musical environment in our home. Thus, I grew up playing in a string quartet with my siblings, and went on to learn several instruments, including piano, violin, viola, cello, ukulele and guitar. Our family ensemble often played for our grandparents as well as at schools and in hospitals. It was through these experiences in the hospitals that I first witnessed the healing power that music could have on a child in pain. By the time I got to college, I was committed to mapping out a lifelong journey in music, health, and education.

Many of our readers are early-career physicians navigating intense training. How has music helped sustain you personally and professionally in your medical journey?

Music has always been an emotional refuge for me - in times of joy, sorrow, stress or accomplishment. Even as a young student, I'd go to the piano when math got too hard or if I disagreed with my parents - somehow practicing gave me the time and space to solve puzzles and sort things out emotionally.

There is a very high percentage of people in health care who had musical training as children - higher than the national average. And many of us continue to play our instruments. My colleagues who study the neuroscience of music are uncovering so many of

the benefits of that early training: in helping develop resilience, perspective, grit, flexibility and creativity - all things we need as physicians.

There are many tools we developed through music that we can apply to medicine: the skills we use in learning a new piece of music are many of those we also use when considering a new challenging diagnosis - from processing data, to scaffolding (relying on and adapting prior knowledge), to finding patterns, to synthesizing the information.

Perhaps the most critical skill we learn as musicians that we use as physicians is flexibility and creativity within an established set of rules. No two performances are ever the same, even if the notes are the same. Similarly, no patient manifests her disease the same way, even if the lab values are identical. The variability and variation are what keeps us going and keeps us all interested.

We know how music is healing to patients and communities. It is also healing to the healers. My message to early-career physicians is: Don't give up your music! Don't give up your creative self. You may find that your relationship to music and to your



Photo by Jennifer Nourse

instrument has to change, with the demands on your time in medical training, starting a family and maintaining a career. I still remember finding time to play duets with another pediatric resident in the middle of the night in the NICU - little moments, but healing for the two of us, as well as the NICU nurses - and maybe the preemies as well! Give yourself a break - try to carve out even brief musical moments, from revisiting some old favorite pieces, or even learning a new piece, measure by measure. You'll be glad you did.

You've played a leading role in the Longwood Symphony Orchestra, a remarkable model of community-based healing through the arts. What lessons from that work have influenced how you care for patients?

Longwood Symphony Orchestra, the orchestra of Boston's medical community, was started in the early 80s. It's been my musical home for my entire career - now nearly 40 years - as a violinist and now as a violist.

I served as its president from 1991-2012. The orchestra was always interested in striving for excellence, first in music but then equally in its mission to heal the community. Very early on, we decided that each concert should be a benefit for a medical non-profit organization in greater Boston. What we learned was that our most meaningful and powerful collaborations with the Community Partners have come from deep caring and deep listening - by empowering each organization and giving it agency to achieve its goals. I This is the best way to care for patients as well - the lab values and physical exam are helpful only after deeply listening to the patient.

As someone who teaches at Harvard Medical School, how do you see the role of the arts and humanities in shaping future physicians?

The art of healing is just that - an ART. As we have moved closer to tech and STEM, this has become lost. I'm not sure if categorizing such essential traits

as empathy and listening as "Soft Skills" was helpful to medical education! In 2018 the Assn. of American Medical Colleges (AAMC) established the FRAHME initiative which endorses the arts and humanities as an essential part of medical education, stating "Arts and humanities are essential to the human experience and their benefits to medical education go far beyond joys and pleasures. By integrating arts and humanities throughout medical education, trainees and physician learn to be better observers and interpreters; and build empathy, communication and teamwork skills, and more." (<https://www.aamc.org/about-us/mission-areas/medical-education/frahme>)

Your book Scales to Scalpels explores how music can heal both patients and caregivers. What inspired you to write it, and how has its message evolved over time?

Scales to Scalpels: Doctors who Practice the Healing Arts of Music and Medicine was written in 2012 as a valentine to the Longwood Symphony Orchestra after my 21 years as president. My hope was that it would serve as a blueprint for other medical musicians as they created their own ensembles, and I've been very gratified that that vision has come true. Our way of supporting medical nonprofits through empowerment remains a unique model of collaboration. While LSO was certainly not the first orchestra of medical professionals, I do think it helped catalyze the movement - Over the past 25 years we've seen scores of new musical ensembles in medical schools and medical centers across the country.

You've spoken about the importance of listening - both in music and in medicine. How can young doctors cultivate that kind of deep, attentive listening in a high-pressure clinical environment?

Deep listening and deep looking are skills we need to constantly cultivate, especially in these times where



we can easily fill silence with sounds and sights from our ever-present devices. In pediatrics and education, I encourage my parents to allow their children to be "bored" - it is in that silence that creativity can grow.

Were there any pivotal mentors, patients, or musical moments that shifted how you understand healing?

Early on it was my piano teacher who would challenge me to understand not just what I was playing on a technical level but why and how. "Does this passage sound sad? Angry? Can you make this sound happy? Does this music bounce?" Much later as a pediatrician, parent and teacher, I realized the value of those simple directives. Through music, children are given the chance to learn abstract concepts and to nonverbally express emotion.



There was an experience that stands out to me. Several years ago we brought a string quartet of medical students to a hospital school - the students there were aged 8-44 but had cognitive levels of less than 2 years old. Most were nonverbal and many were non-ambulatory. We played for the students, their caregivers and their parents, then asked for observations following the performance. Some parents and caregivers were surprised at how their students responded to music ("I didn't know he could hear that!" "I haven't seen him so happy!"). Some nurses and staff noticed that they themselves felt better after the music. And the medical students noticed that playing challenged their pre-conception of this patient population.

What gives you hope right now - either in medicine, the arts, or both?

What gives me hope in medicine and the arts is my unshakeable belief that it is in our core human nature to aspire to good, beauty and justice. That is what drives us to seek knowledge, care for patients, pursue self-expression through the arts and improve our community. There is so much despair right now. The arts and holding on to beauty can help us counteract this and prevent burnout. So often it is a struggle to embrace hope - but knowing that we are not alone in this struggle helps. And in the end, it is art, beauty and knowledge that will survive.

Lisa Wong, MD

Associate Co-Director and Co-Founder of the Arts and Humanities Initiative, Harvard Medical School
Assistant Professor of Pediatrics, Massachusetts General Hospital



Dr. Lisa Wong is an assistant professor of pediatrics at Harvard Medical School, arts education advocate, and co-director of the Arts and Humanities Initiative at HMS. A violist and practicing pediatrician at Milton Pediatric Associates, she served as president of the Longwood Symphony Orchestra for 21 years, where she co-designed its signature "Healing Art of Music Program." During the Covid-19 pandemic, she helped create Boston Hope Music, offering virtual music performances to patients and healthcare workers. Dr. Wong teaches a course on music, health, and education at Harvard College and co-leads a museum-based medical education fellowship through Harvard Macy Institute. She serves on the boards of Conservatory Lab Charter School, A Far Cry, and chairs the BPS Arts Expansion initiative. Nationally, she contributed to the NASEM committee on arts in STEMM education and serves on the Neuroarts Blueprint scientific committee. Dr. Wong is the author of Scales to Scalpels: Doctors Who Practice the Healing Arts of Music and Medicine.

Is there a project, piece of music, or idea you're currently working on that you'd like to share with our readers?

I'm passionate about arts education across the educational and health spectrum. Besides the arts organizations I work with, I devote a lot of time to arts education in the Pre-K through 12 space. I'm on the boards of the BPS [Boston Public Schools] Arts Initiative and the Conservatory Lab Charter School that ensure that children in Boston have access to the arts. All children should have access to quality arts education. Creating art and playing music are good for them neurologically and neurodevelopmentally: it takes them away from screens and computers and promotes fine motor and gross motor coordination. Promoting the arts in young children teaches them resilience, collaboration and creativity. As we discussed, these are the skills people need to be successful in life - the earlier the seeds are planted, the better. These are where our empathetic, creative citizens will come from - and our next physicians as well.

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Health Equity and Engagement

Bridging Medicine and Art: VCU's Innovative Approach to Healing and Education

Interviewed by Joe McMenamin

VCUarts, the art and design school at Virginia Commonwealth University (VCU), is perhaps the best-known and most widely recognized of all the schools there.

The University's program is recognized for combining arts and design with innovation and technology.

At VCU, collaboration between the arts and healthcare is thriving.



Megan Lemay, MD

Associate Professor of Medicine, General Internal Medicine at Virginia Commonwealth University

VCU's Megan Lemay, MD, focuses on primary care, addiction medicine, medical education, and narrative medicine. The brainchild of Rita Charon, MD, PhD, of Columbia, narrative medicine originated with the observation that patients come to doctors with stories, and physicians become part of those stories. Part of the doctor's role, says Dr. Lemay, is to develop narrative competence, to permit understanding and to honor the patient's story. The theory is that narratives can improve the physician-patient relationship, and enhance understanding, leading to better outcomes.

VCU's Medicine, Arts and Humanities curriculum arose in 2019. Endocrinologist John Nestler, MD, formerly Chief of Medicine, had served as physician in residence at the School of Art, "one of the first residencies of its kind in an arts school." Dr. Nestler knew Dr. Lemay had an interest in the field, and connected her to Sara Wilson McKay, PhD, Associate Professor of Art Education, VCUarts. The goal was to increase medical students' skills.

Dr. Wilson McKay co-developed and led "The Art of Nursing," described as a collaboration among "the VCU School of Nursing, VCU Department of Art Education, and

the Virginia Museum of Fine Arts." Dr. Wilson McKay and her colleagues had published on how the humanities can build clinical skills. They described an "interdisciplinary art-based educational program for beginning baccalaureate traditional and accelerated nursing students." They found that "nursing students' metacognitive awareness (an understanding of one's own thought processes) benefits from a museum-based arts experience despite demographic and educational differences and (2) the arts-exposed students exhibited higher metacognitive awareness at baseline as compared with the traditional student group. Lovell C, Elswick RK, McKay SW, Robins J, Salyer J. Visual Arts in Nursing Education: An Inventive Interprofessional Initiative to Cultivate Metacognitive Awareness in Beginning Nursing Students. *Journal of Holistic Nursing*. 2020;39(2):135-143. doi:10.1177/0898010120962903, <https://journals.sagepub.com/doi/full/10.1177/0898010120962903>. Dr. Wilson McKay's insights have also gained from the work of Elizabeth Gaufer, MD, MPH, who co-directs an international health professions education fellowship based at the Museum of Fine Arts, Boston.



Sara Wilson McKay, PhD

Associate Professor, Director of Marshall-Hunter Arts Integration Fund, Department of Art Education at VCU School of the Arts Virginia Commonwealth University

Dr. Wilson McKay started The Art of Nursing in 2012 after VCU nurse Susan Lindner attended The Clinical Eye, a professional development session at Yale, and wanted to replicate it at VCU. The VCU Art of Nursing program (which ended in 2020 owing to COVID and retirements) used art education strategies to enhance the clinical reasoning skills of nursing students, integrating works of art into the curriculum. Often, students worked in a clinical setting in the morning, and in an arts environment in the afternoon; frequently, they referred to their clinical experience in interacting with art. The course emphasized acuity of observation and "dialogic looking," in which one observer looks and shares questions with another, to see more than either would alone, and more than they could by relying on a textbook. Part of the experience is for a student-observer to describe a work of art to another student-observer farther away, who repeats the process, as does the next student, and so forth. The result is often akin to what happens in the children's game of Telephone, where the first child repeats what he or she has been told to the second, the second to the third, and so forth. This exercise sheds light on what happens, and what can go wrong, at change of shift when the oncoming crew takes report from those going off-duty.

Dr. Wilson McKay emphasizes that the same skills are valuable, and available, to medical students. By confronting different points of view concerning an artwork, and sharing questions and observations, the students improve their critical thinking. By questioning authoritative interpretations of art works, they learn to accept ambiguity in decision-making and to build trust in one another. The emphasis is on close observation, reflection, and empathy. Students are encouraged to look at their own biases in communication.

An aspect of the medicine and the arts curriculum spotlighted by both Drs. Wilson McKay and Lemay, in fact, is the program's ability to help students understand and cope with their own biases. As one example, they described students' reaction to Ebony Patterson's *Three Kings Weep*, exhibited at the Virginia Museum of Fine Art and featuring videos of three black men dressing. Students are asked what they notice, and how to describe it. One student observer commented on jewelry worn by one of the men, describing it as "cheap" and "throw away."

Another noted that one of the figures held his head in a "defiant position." Other students were more impressed



While residents have few comparable opportunities, they do sometimes embark on artistic projects. Among the best examples: sculpture for surgery residents. Additionally, at VCU, Semi Ryu, MFA, is an associate professor with joint appointments in the Department of Kinetic Imaging at VCUarts and the Department of Internal Medicine at the School of Medicine. She is an artist who works with virtual reality in palliative care.

By no means is VCU alone in offering programs such as these. Quite a few schools, including some of the nation's most prominent, house Centers for Medicine and the Humanities or

the like. These institutions stress such concepts as ethics, the doctor-patient relationship, the patient's perspective and experience of illness, the impact of social and cultural factors on health and disease, and the role of art and creative expression in healthcare. Among the medical schools where such offerings can be found are Mayo, Hopkins, UCSF, and Stanford.

Drs. Lemay and Wilson McKay suggest that exposure to and participating in the arts might be part of the solution to the near-ubiquitous "burnout" problem. Clinicians of all stripes may react to the stresses of their work with an unhealthful gumbo of emotional exhaustion, loss of enthusiasm, cynicism, depersonalization, or a low sense of self-esteem. Instead of a pizza party in the doctors' lounge, they argue, use art to build skills and enhance resilience. Apparently, this approach has been used to advantage in Europe for some time now, with demonstrable benefits for practitioners. Given the severity and prevalence of burnout here, and the value of the arts in combating it elsewhere, the professions might well benefit from examining the results of bringing the arts to healthcare, at VCU and at many other centers.

by the men's humanity as evidenced by the tears on their faces. Comparing and contrasting these reactions and characterizations enabled the students to note, and thus to better understand, their own views about the men in the artwork. These perceptions are helpful to students learning how to interpret lab data created by tests taking race into account, for example, and how bias, including unrecognized bias, can influence one's approach to medicine. Probing one's sensitivity to one's own biases, how to detect them, and how they influence clinical reasoning, are all designed to diminish the impact of subtle, often unrecognized biases to which we are all susceptible.

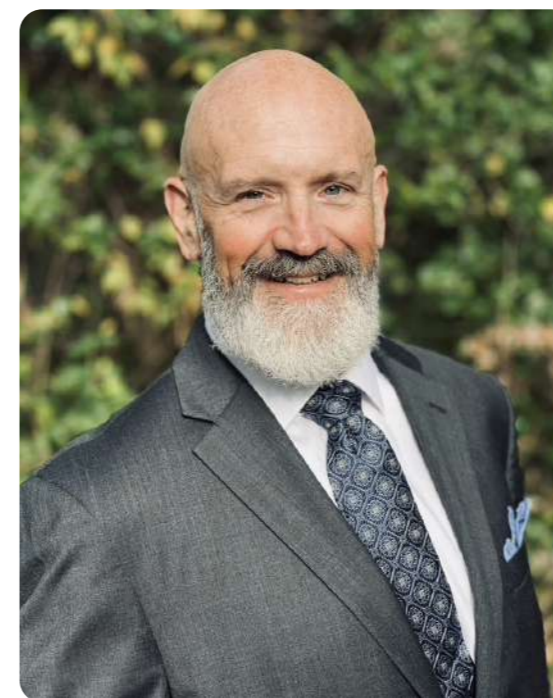
Arts courses for VCU healthcare students are offered on a first-come, first-served basis. They attract a mix of students, with and without arts backgrounds. Some come to the program believing they have to abandon their artistic pursuits. Others enhance their existing skills, while still others come in with none, and no expectations of gaining any. So far, there has been too little feedback to gauge how residency directors view educational experiences such as these. Drs. Wilson McKay and Lemay are persuaded, however, that the experiences of the students who take advantage of the arts programs on offer sharpen their crucial thinking skills.

Health Equity and Engagement

Renaissance Man: How Aaron Anderson Is Transforming Medical Education Through the Art of Theater

by Joe McMnamin

Aaron Anderson, PhD, is a Renaissance man. He is a military veteran, an ordnance expert, an actor, a theatrical fighting instructor, a Professor of Applied Arts at Virginia Commonwealth University (VCU) in Richmond, and a member of the affiliate faculty at VCU's School of Business. Of greatest interest to our readership, probably, Dr. Anderson is the Founding Director of the Standardized Patient Program at the Center for Human Simulation and Patient Safety in VCU's School of Medicine.



A "standardized patient" is an actor trained to simulate a patient to help medical students and others learn empathy and the art of diagnosis. A recent review concluded that "...the body of literature regarding the use of SPs is overwhelmingly supportive of their use in medical school over the course of a student's education, starting in the first year and extending into residency"[1].

In a variety of industries where reliability is critical-- aviation, the military, nuclear power, and others-- simulation-based training has long been central to preparing for the demands of the field. Today, nearly 90% of medical schools use some type of medical simulation, where actors portray patients with various disorders. But that wasn't always so. The pioneer in this field was Harold Barrows, MD, a UCLA neurologist, who first developed simulations in the 1960s. The concept grew, slowly and then quickly, over time. Today the emphasis in health care is on high-fidelity simulation, meaning "simulation experiences that are extremely realistic and provide a high level of interactivity and realism for the learner and can be applied to any mode or method of simulation; for example, human, mannequin, task trainer, or virtual reality"[2].

Standardized patients also play a role in Objective Structured

Clinical Examinations (OSCEs), which evaluate clinical skills in a structured, standardized manner. OSCEs comprehensively assess a learner's ability to perform clinical tasks, make diagnostic decisions, and communicate effectively with patients[3]. Originally, the OSCE was "a timed examination in which medical students interact with a series of simulated patients in stations that may involve history-taking, physical examination, counselling or patient management"[4]. It is now employed to assess the student's ability to "obtain/interpret data, problem-solve, teach, communicate, and handle unpredictable patient behavior"[5].

Dr. Anderson's involvement in the development of the standardized patient dates to 2005, when he was an Assistant Professor working under David Leong, Professor and Chair and Producer of the VCU Theatre Department. Trained in children's theatre, Leong had coached hundreds of actors who went on to perform across the nation, on Broadway, in TV and film, in regional theatre and in universities. In his reading, Leong happened upon an article in *New Yorker Magazine* describing a crisis in healthcare. The article argued that patient care was suffering because physicians lacked adequate communication skills. Intrigued, Leong sought to learn more.

Leong approached Richard Wenzel, MD, an infectious disease specialist and epidemiologist on the VCU Medical School faculty, and former President of Medical College of Virginia Physicians, the School's faculty practice. Dr. Wenzel confirmed the *New Yorker* report. Students have a lot to learn in their four years of medical school, so time is scarce, and precious. Time needed to address technology had to come from somewhere, and often the "somewhere" was that portion of the curriculum previously dedicated to teaching and learning the bedside manner. As technology grew ever more complex, the time it required expanded. Technology was "squeezing the doctors": too few young physicians had been taught the "bedside manner;" Worse, few professors remained available to teach it. Developing rapport, and getting to know patients better, suffered. In modern times, the average duration of a physician encounter is a mere eight minutes.

Wenzel asked Leong: "Can you teach my fellows?" Leong turned to Aaron Anderson for help. Dr. Anderson readily accepted, as the assignment fit his wide-ranging skill set. His education, after all, was interdisciplinary, meaning that it

was methods based, not discipline-based. Interdisciplinary training is rooted in learning how to apply the methods and practices from one field in another. Traditional training emphasizes only the methods and practices of one discipline. A traditionally trained theatre practitioner, for example, would know how to make theatre AS theatre, while interdisciplinary training prepares one to apply and modify theatre training in other contexts. The interdisciplinarian asks: "Can you unplug an idea from one field and apply it another? How do ideas mix and match?" Moreover, Dr. Anderson was the only person in theatre, at least at VCU, trained in classical research. This combination of skills and knowledge made him the logical choice for the role.

Academician that he was, Dr. Wenzel wanted not only to offer this instruction to his trainees but to study its results. The question Wenzel wanted to answer: Could we use theater skills to teach listening to doctors? Alan Dow, MD was chief medical resident at the time, and agreed to participate. Eventually, Dow, with Leong and Anderson and others, published a paper, documenting efficacy. "Collaborative efforts between the departments of theater and medicine are effective in teaching clinical empathy techniques"[6].

This publication attracted widespread attention from the lay media, including the Voice of America, NPR, the *Chicago Tribune*, the *San Francisco Chronicle*, and most notably, the *Washington Post*. The Post story, "New Doctors Develop an Old Skill," was widely cited and read[7].

A good example of the value of these newly enhanced communicative skills arises when the physician must confront what Dr. Anderson calls an "unwinnable" situation: the doctor has to give bad news to a patient, to a loved one, or both. That happens all too often, of course, especially in certain specialties. One cannot tell a patient of his newly diagnosed fatal disease and bring joy to the listener. There are ways, however, to make the shock less painful, the news-bearer more empathetic, and the circumstances less dire. Educating doctors in the arts, and providing them with simulations, helps them achieve these goals.

Aaron Anderson wears an assortment of academic hats, and has taught in an array of colleges and universities. It would be a mistake, though, to see him purely as a scholar. He enlisted in the military to travel, to see the world, and to seek adventure. He went into ordnance, specifically, to "blow stuff up." In a lemonade-from-lemons episode, Anderson learned

about being "present" while recuperating from an injury sustained during his military service, a fall causing serious musculoskeletal and less serious internal organ damage. When there was doubt he would regain his ability to walk, Anderson learned to be "in the moment," to connect with others in the room, and to listen better. Moreover, teaching actors how to fight, or how to fence, as he has done since, is hard to classify as pedantic.

Swashbuckling notwithstanding, Dr. Anderson has been lauded for his contributions to the field. He won the 2024 a2ru Award for Excellence in Arts in Health Education, established "to recognize outstanding and innovative pedagogy that supports the rapid growth of arts in health." The judges wrote that Anderson has demonstrated the ability to build bridges across academic disciplines while publishing extensively and remaining active as a theatre artist... What's most impressive, though, is the extent to which he has reached out not only into his home university but to other universities. His collaborative style has truly made a difference.

A Renaissance man, indeed.

Beyond Theatre

Since the simulation movement began, with its emphasis on acting, the concept of providing arts education to doctors in training has expanded beyond theatre. Med students and young doctors visit art museums to learn how to better attend to a painting's details so they can read a composition in its frame. They are exposed to music for the lessons it teaches on empathy, teamwork, and yes, listening. The arts, he says, capture "what this moment feels like." Quoting Bob Dylan, Anderson says the arts are good at "freezing time," and, better than other domains, at communicating phenomenological feelings. Physicians exposed to art works and to artistic thinking learn to relate better to patients, resulting in better transmission of better information, deeper understanding between treater and patient, and improved patient adherence. Dr. Anderson advises that arts and humanities in medicine has become so well-developed that the field has its own literature and conferences. He points the University of Florida as a pioneer and still one of the leaders in this realm, though one can find programs all over the country, including at many of the nation's most competitive and highly regarded med schools.

Contrary to what some might expect, deans and other leaders embrace these learning opportunities, Anderson says, even though they have but four years to inculcate vast treasuries of clinical knowledge into young minds. Med school leaders recognize the value of artistic experiences, and nowadays may even need them for accreditation purposes. There is such a thing as too much lecturing, after all. At VCU, a professor of medicine identifies his objectives for the students, and relies on Dr. Anderson and colleagues to provide a set of experiences to aid in their attainment.

The flip side of these training opportunities is art as therapy. Pediatric oncology patients participate in plays, or in dance, Dr. Anderson says, where they can, for a time, "stop being kids with cancer, and just be kids," period. Musicians and painters come to see hospitalized children, to enlighten, enliven and inspire. Nor are these benefits limited to youngsters[8].

The Business Connection

Dr. Anderson explained how he came to be affiliated with VCU's Business School. Hamilton Beach, the maker of blenders and dozens of other household products, is headquartered in Richmond. Its President read the *WaPo* story and became fascinated by the idea that theatre professionals could have an impact in a field, such as healthcare, seemingly far removed from the performing arts. He called Aaron Anderson and asked, "Can you do this with business people, too?" The first lesson all actors learn, says Dr. Anderson, is to say "yes" to all offers given, and he did not



forget that principle in this exchange. After all, businessmen have to communicate too. Soon, Hamilton Beach executives were theatre students, learning to use new communication skills to interact with their own reports, their supervisors, their suppliers, and their customers. Other companies got the message, and it has become fairly common practice for executives in companies of all kinds to improve their communication skills through exposure to the arts.

The Future

Anderson acknowledges that, for all its success, and its prevalence, the case for standardized patient needs to be strengthened. For one thing, many of the published studies are small. The means scalability is questionable. Return on investment has not been carefully measured. Studies should be devised and completed to assess scalability, ROI, and other questions, such as replication of published results in behavioral research, few of which have been fully addressed. Yet it seems that standardized patients, and more generally, the arts in medical education, are here to stay.

And the Past

The idea of bringing artistic experiences to medical education may seem novel. Certainly there was precious little of that kind of thing in the school I attended in the mid-70s. But



maybe, at base, the idea is not so new after all. Recall the words of the Hippocratic oath, history's first exposition of medical ethics. Fledgling doctors have been taking that oath for more than two thousand years. In it, the physician promises, among other things, "To hold my teacher in this art equal to my own parents..." If medicine is indeed an art, as most would likely concede, then perhaps Dr. Anderson and his colleagues are bringing medicine back to its roots.

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Health Equity and Engagement
Sevaro's Children's Health Literacy project

Interview with Dr. Raj Narula

Dr. Rajiv Narula, a stroke neurologist and founder of Sevaro, has taken an unconventional approach to prevention : educating children. In this interview, he discusses how a personal experience with his young son led to the creation of a children's book that teaches early stroke recognition through a simple, relatable story. Dr. Narula shares insights into how creative outreach, family collaboration, and community-based education can spark broader conversations around health equity and prevention-starting with the youngest members of our society.

From the Editors

What inspired you to conceive of B.E.F.A.S.T. and the idea that small children could learn some basic neurology?

As a stroke doctor, I'm on the receiving end of patients in the emergency room who come in paralyzed from a stroke. Most people in our country don't know how to recognize the signs of stroke, however, so by the time they reach the hospital it's too late. Research is showing strokes in younger populations. We know that parents and grandparents are the highest risk population for stroke. Well, I thought, what if we taught their children what to do in an emergency if someone in their family suddenly had symptoms? BEFAST is an acronym (Balance, Eyes, Face, Arm, Speech, and Time) that is widely used in hospitals across the country. It's simple to remember. I read books to my son all the time. He watches me treat patients from home through virtual neurology. He knows this very well and he's only 5 years old. I wanted to teach other kids what he knew so we decided to write a book about it.

Describe how you and your son collaborated.

We thought of a story that could be relatable to make learning the signs fun, rather than serious. So we thought of a story where a child was sitting with his grandparent and noticed something was wrong. We wanted to show kids what to do, but make it simple, to the point of how to dial 911 from a mobile phone. We wanted to make sure they knew if they did this, they could be superheroes - something many kids relate to and aspire to be from an early age. As a society, we glorify superheroes, good over evil. Well, our children can be real life superheroes. The child in the book looks like my son. We added pictures of our twin girls in the book to make this personal for us. Something my son and I could look back years later on a project we worked on together. We spent almost one year in writing the script, getting the illustrations done, making revisions until it was finally published. We never expected such overwhelming support and are so grateful to have organizations reach out to partner with us to help educate and empower one million kids.

You mentioned creating a story that would make learning the signs of stroke “fun, rather than serious.”

When a family member suddenly stops talking, falls, or can't move her arm, it's terrifying. We wanted kids to know that helping doesn't have to be complicated or scary-it can be simple and empowering. By showing them exactly what to do in the story, we're helping them feel prepared, not afraid, when faced with a real-life situation. We also made sure to portray the EMS and hospital teams as friendly and supportive, so kids understand their family member is in good hands. Kids have a lot of intuition and courage, and we wanted to meet them at that level.

Why did you think that creating this book was important?

Every 40 seconds someone has a stroke; every 4 minutes someone dies of a stroke. It's a leading cause of disability. We can change that through education and awareness. If every household in our country knows how to recognize the signs and call 911 immediately, we can get these patients to a hospital and treat them. The faster we treat stroke patients, the higher the chance of reversing the paralysis and saving their life.

Have you received any memorable feedback from a family, teacher, or young reader that reminded you why this project matters?

Yes, this feedback hit close to home for us. Our nanny's daughter grabbed the book when she saw her grandmother struggling to walk, and that quick thinking helped get her grandmother to the hospital, where she was diagnosed with a TIA, a mini-stroke. My son witnessed this firsthand, seeing the direct impact his book had in a real emergency. It was a powerful moment that reinforced why this project is so important.

At NexBioHealth, many of our readers are students or early-career physicians eager to make a broader impact. As a physician-innovator, what advice would you give to trainees who want to step beyond traditional roles and create meaningful change in their communities?

If you have an idea, start working on it immediately. There are so many resources, tools, and people who want to see you succeed. My best advice is to look for problems to solve in your daily work-big or small. Adopt a solution-oriented mindset to everything you do. Mindset is everything. Don't wait for the perfect moment; start now and refine as you go.

We often explore the human side of medicine at NexBioHealth. How has working on this book with your son shaped your perspective as a physician, parent, and advocate for community health?

Seeing the support and overwhelming response to this book has renewed my appreciation for how people can come together for a common goal, regardless of race, religion, location, or politics. When we channel our energy toward helping others without expecting anything in return-practicing seva-good things happen in unexpected ways. It's a lesson I hope the next generation, including my son, will carry forward.

At NexBioHealth, we're interested in how storytelling and technology can reach underserved communities. What role do you see for these tools in advancing health literacy and prevention?

I believe storytelling and technology are key to bridging health gaps in underserved communities. Stories are powerful because they connect with people emotionally and make complex health topics accessible and memorable. Technology can then amplify these stories-through videos, interactive apps, social media, or virtual outreach-so they reach kids and families wherever they are. The combination of relatable storytelling and accessible technology can build trust, inspire action, and empower communities to take charge of their health.

Looking ahead, how do you envision scaling or adapting this work to empower even more kids and families-particularly those in communities that may be overlooked by traditional public health efforts?

We're actively working to expand this effort by recruiting high school and college students nationwide to become Stroke Ambassadors. These students will bring the message of stroke awareness directly into their communities. With our partnership with Yale University, we're offering a \$50,000 education stipend to help students innovate and find new ways to spread these messages. By working with young leaders who understand their communities best, we hope to reach even the most underserved areas and truly make a difference.



Rajiv Narula, MD
 Founder & CEO, Sevaro

Dr. Narula's passion for healthcare and technology has established him as one of today's most impactful healthcare leaders. With his experience from University of California, San Diego and as former Director of Teleneuroscience at Cooper University Hospital, his goal is to make neurological care accessible and affordable to those who need it the most. His vision is to take proven methodologies while combining data, logistics and compassion to improve patient outcomes.

CALL FOR SUBMISSIONS

NexBioHealth invites contributions from medical students, residents, young physicians, and healthcare professionals worldwide.

We are currently seeking submissions for the following categories:



- **Original Articles**
Share your research, clinical studies, or innovative projects (2,000–3,500 words).
- **Opinion Pieces**
Provide your perspectives on current issues in healthcare, medical education, or public health (800–1,500 words).
- **Case Reports**
Submit detailed reports of interesting or unusual cases that highlight unique challenges and solutions (1,000–2,500 words).
- **Reviews**
Summarize and analyze the latest developments in your field (2,500–4,000 words).
- **Letters to the Editor**
Voice your thoughts on published articles or current healthcare debates (400–800 words).



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Dr. Mun K. Hong's Reflection

The Importance of Finding the Right Mentor and Becoming One



It was one of my first interventional cases with my mentor, Dr. Kenneth Kent, and I was not only excited to be finally learning the angioplasty techniques but also apprehensive to be working with my mentor. This was about 35 years ago and at that time we had limited equipment in the cath lab, especially for the particular patient, who was referred from another hospital due to a heavily calcified right coronary artery lesion. We did not have a good device to treat the calcification and were limited to an atherectomy device that was supposed to debulk and remove the calcified plaque. Despite his extensive experience with the device, unfortunately, the device got trapped

in the calcified plaque and Dr. Kent could not move or remove the device. Patient was experiencing severe chest pain and his EKG was showing signs of severe ischemia. I was becoming diaphoretic myself from seeing first-hand the first major complication of the specialty I was going to pursue. However, Dr. Kent remained calm and explained to the patient exactly what was happening and the need for emergency bypass surgery. Surprisingly patient was accepting the surgical option as he had been told that there were not many options for his complex coronary artery disease. Then, Dr. Kent did something that left a lasting impression on me. He

removed his gloves, looked at the team, and said simply, "Thank you, everyone." I would hear him say those same words at the end of every case, regardless of the outcome. In that moment, I realized I was not just learning from a masterful technician, but from a true gentleman. His calm demeanor did encourage me to continue with the intense but gratifying training.


Another memory of Dr. Kent reinforces this. At that time, device companies would occasionally sponsor interventional fellows' courses at resorts. Dr. Kent was one of the speakers at one such event. After the first day, he passed by me and said, "Good night, Mun," in front of my medical school classmates-many of whom were surprised, even envious, that a world-renowned expert in angioplasty would take the time to acknowledge a fellow. Their own mentors, they noted, rarely offered such simple gestures of respect.

Fast forward 20 years: I had become the cath lab director at a New York City hospital. Not only did I continue to end every case with "Thank you, everyone," but I had also grown into a passionate advocate for our patients from diverse backgrounds. One day, our division administrator shared a note from a graduating fellow. In his exit survey, he wrote that I was the most compassionate physician he had ever worked with and that he hoped to emulate me. That feedback deeply moved me-it was a testament to the enduring influence of Dr. Kent's mentorship.

I still remember his words: "It is important for us to be gentlemen in and out of the cath lab." I hope that everyone has the opportunity to work with a mentor like Dr. Kent-and in turn, become a mentor who inspires and uplifts the next generation.



Dr. Mun K. Hong, born in Seoul, Korea, immigrated to America at age 15. He earned his BA-MD from Johns Hopkins University School of Medicine in 1986 and completed residencies and fellowships in internal medicine and cardiology at Johns Hopkins, Georgetown, and the Washington Hospital Center. Dr. Hong has held leadership roles, including Director of Cardiovascular Intervention at Weill Cornell and Chairman of Cardiology at Medstar Southern Maryland Hospital. He currently practices at Bassett Hospital Center as Inaugural Chief of Cardiovascular Services. A dedicated mentor, he sponsored over 10 interventional cardiologists from Korea, helping them achieve significant academic success. During the pandemic, he earned an MHCM from Harvard. Dr. Hong enjoys family time with his wife of 37 years and their three children in New York City.


Mun K. Hong, MD, MHCM, FACC

Special Article

In an era of sweeping change in healthcare and medical training - from the integration of artificial intelligence to evolving accreditation standards and growing calls for equity and learner wellness - medical education must continually adapt. Medical Education Day at Yale provides a vital space to reflect on these challenges, exchange ideas, and share innovations that drive the field forward. More than a showcase, it fosters a collaborative culture of curiosity, scholarship, and teaching excellence. The article below recaps the 2025 event, spotlighting the conversations and connections shaping the future of medical education at Yale and beyond.

From the Editors

Medical Education Day: A Strategy to Showcase Innovation and Research

By Sara Guastello, Yale School of Medicine, Center for Medical Education

Medical Education Day at Yale (Med Ed Day) is a strategic initiative that fosters collaboration, mentorship and innovation in educational scholarship. Hosted by the Yale School of Medicine (YSM) Center for Medical Education (the Center), the annual symposium brings together health professions educators to share evidence-informed practices and advance the future of medical education. The Center, formerly known as the Teaching and Learning Center, was established in 2012 in support of YSM's mission to educate and nurture creative leaders in medicine and science, and promote curiosity and critical inquiry in an inclusive environment. The Center offers a comprehensive set of programs and services to cultivate a vibrant culture of teaching excellence, innovation, and educational scholarship. These are offered to educators in undergraduate, graduate, and continuing medical education, as well as to students interested in medical education.

Showcasing scholarship and building connections

Among this robust set of offerings is Med Ed Day, which every year spotlights innovative approaches in pedagogy, assessment, curriculum development, and more. The event examines the latest research in the field and convenes educators and learners to explore challenges in medical education.

A unique aspect of Med Ed Day is its emphasis on community-building. Structured as a half-day, in-person symposium, the event brings together faculty, fellows, residents, students and staff from across the Yale Schools of Medicine, Nursing and Public Health. Participants are encouraged to submit their scholarly work for presentation, engage with others to learn about medical education scholarship at Yale, and explore opportunities for collaboration and knowledge-sharing.

The day is structured around these dual aims of knowledge-sharing and community-building. A peer-



reviewed poster session, hands-on workshops and topical oral presentations highlight the work of Yale faculty and students. Networking opportunities promote collaboration, idea exchange, and the strengthening of professional relationships.

In addition, every year a thought leader in the field is invited to deliver a topical keynote address centered on the evolving landscape of health professions education. To encourage participation, there is no charge to attend, and continuing education credits are provided.

The 13th annual Med Ed Day

The 13th annual Med Ed Day was held on June 5, 2025. More than 200 faculty, alumni, fellows, residents, students and staff registered to attend. Approximately half presented their work through posters, oral presentations, or workshops. Fifteen attendees were recognized during a graduation ceremony at the end of the day to celebrate their completion of the one-year Education Scholar Fellowship (ESF). Each fellow completed a scholarly project that was presented during the poster session. Other presenters included medical students enrolled in YSM's longitudinal Medical Education Concentration, students and alumni of

the school's Master in Health Science-Medical Education track degree program, and alumni of the Medical Education Fellowship, a precursor to the ESF. In this way, Med Ed Day serves as a platform for disseminating the scholarly work of medical education program participants and highlights opportunities for those interested in medical education to engage with Yale's vibrant medical education community.

The future is now: the impact of AI on medical education

The day kicked off with a thought-provoking keynote address delivered by Marc M. Triola, MD, Associate Dean for Educational Informatics and Director, Institute for Innovations in Medical Education at NYU Grossman School of Medicine. In a talk entitled, "From Bytes to Bedside: Exploring the Impact of Artificial Intelligence on Medicine and Medical Education," Triola shared his thoughts on how the rapid advances in and accessibility of AI are transforming health care and medical education.



Spotlight on scholarship

One of the highlights of Med Ed Day is the emphasis on peer-reviewed medical education scholarship contributing to the growing evidence base for best practices in health professions education. In 2025,

Expert Perspective

The Future of American Healthcare: A Senior Surgeon's Perspective on Value- Based Care and Preventive Medicine

By Sanghyun Alexander Kim, MD

As a surgeon with more than 25 years of experience in the U.S. healthcare system, I've seen both its triumphs and its shortcomings. Whether I'm in the operating room, a clinic, or a boardroom, one thing is clear: our current healthcare model is not sustainable. We are at a critical juncture, and if we want to improve patient outcomes and build a more sustainable system for the future, we must shift toward value-based care, with a strong emphasis on preventive medicine. This is not a new idea, and it certainly won't be the last time you hear about it.

six abstracts were selected for oral presentation. Presenters included YSM faculty, residents and students. The first block of presentations explored the use of simulation and integrative educational tools to enhance clinical reasoning and care practices in women's and gender health. The second block examined the impact of team culture, leadership perceptions, and wellness initiatives on the learning experiences and professional development of trainees.

A record 90 posters were accepted for presentation during the 2025 Med Ed Day Poster Session. The posters encompassed a wide range of themes, including innovative pedagogical approaches, needs assessments, and curriculum development across various specialties. Additionally, posters explored the use of technology and novel methods, such as asynchronous learning, simulation-based training, and virtual techniques.

A rigorous peer review poster judging process took place earlier in the week. A panel of eight judges scored the posters on scholarly rigor and presentation quality. The top Medical Education Research poster was: "Introduction to Language Barriers in Healthcare: Practice with Medical Interpreters--A Clinical Arts & Sciences Session for MS1 Medical Students." The top Innovation in Education poster was: "An innovative trauma training simulation curriculum to improve pediatric trainees' comfort in trauma resuscitation skills." Two posters in each category were also selected for honorable mention. In addition, given the record number of student poster submissions, for the first time a special student poster award in each category was conferred. The top student poster in the Medical Education Research category was titled: "Enduring Gaps in Representation: A Comprehensive Reanalysis of Skin of Color in Popular Medical Education Materials." In the Innovations in Education category, the top student poster was: "Design, Implementation

and Evaluation of a Novel Musculoskeletal Medicine Elective for Yale Medical Students."

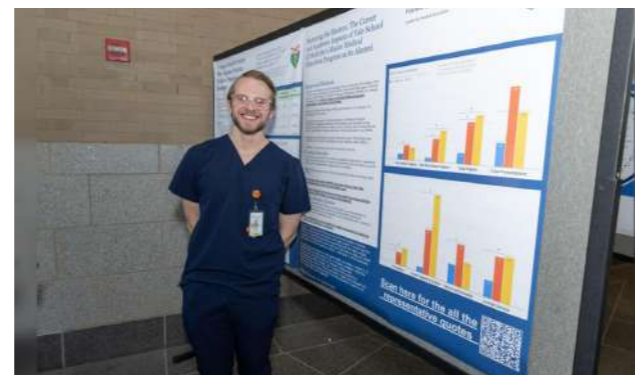
Engaging workshops

Two featured workshops facilitated by YSM medical education leaders provided rich opportunities for engagement. The first workshop focused on enhancing educational scholarship at Yale by offering participants access to resources and mentoring through a dynamic speed mentoring format. The second workshop examined the characteristics of an effective small group learning environment in the pre-clerkship phase and provided opportunities for participants to build their own skills in small-group teaching. Attendees observed a demonstration of a student-centered approach to small group teaching and reflected on opportunities to adapt their teaching to this student-centered approach.

The power of Med Ed Day

Med Ed Day 2025 demonstrated the impact of bringing together people passionate about education to share ideas, scholarship, and solutions. Medical Education Day at Yale 2026 will take place on June 4, 2026, offering an opportunity to reconvene and see how the innovations and scholarly efforts sparked at this year's event have advanced excellence in medical education at Yale and beyond.

Photo credit: Anthony DeCarlo, Yale School of Medicine Staff Photographer.



Fee-for-Service: A System in Decline

For most of my career, fee-for-service has been the dominant model in American healthcare. In this system, providers are incentivized to perform more tests, surgeries, and procedures, regardless of whether these interventions actually improve long-term health. While this approach has led to major innovations and some of the most advanced medical treatments in the world, it has also resulted in rising costs, fragmented care, and health outcomes that lag behind those of countries that spend far less on healthcare.

In 2016, the U.S. spent 17.8% of its GDP on healthcare, compared to 9.6% to 12.4% spent by other high-income nations. Yet, despite this higher spending, the U.S. had the lowest life expectancy at just 78.8 years, while other countries ranged from 80.7 to 83.9 years. Studies show that the U.S. spends more on healthcare but achieves poorer health outcomes, largely due to

high medical costs, expensive pharmaceuticals, and administrative overhead. Additionally, higher obesity rates and lower insurance coverage in the U.S. further contribute to these poor health outcomes.

As a colorectal surgeon, I've seen countless patients with diseases that could have been detected and treated earlier. Conditions like colorectal cancer, inflammatory bowel disease, and obesity-related illnesses are often missed until it's too late.

Value-Based Care: A Better Approach, But Not New

Value-based care has been attempted multiple times in the history of U.S. healthcare, but it has never truly taken root. The reasons for this are complex, but they include resistance to change and the lure of immediate financial reward of the fee-for-service model. Nevertheless, value-based care turns the current system on its head by rewarding quality

instead of quantity. It prioritizes patient outcomes, satisfaction, and cost-efficiency. Providers are encouraged to collaborate, focus on long-term health, and take responsibility for the overall well-being of their patients.

For specialists like myself, this does not mean our roles become less important. On the contrary, our responsibilities become more comprehensive and strategic. We are involved in every stage of patient care—from prevention and early detection to surgery and recovery. In colorectal care, for example, this could mean increasing the use of screening colonoscopies, better management of precancerous conditions, and creating coordinated follow-up plans with primary care doctors and nutritionists.

The Essential Role of Preventive Medicine

Preventive care is the foundation of any successful value-based system. Yet, in the U.S., it remains underused. Despite strong evidence supporting the effectiveness of screenings and lifestyle interventions in preventing serious diseases, many patients only seek care when symptoms become severe.

This delay not only jeopardizes lives but also increases costs. Treating late-stage cancer is far more expensive than removing a precancerous polyp during a routine screening. Similarly, managing complications from diabetes in the ER is much more costly than providing proactive counseling on nutrition and exercise. We can and must do better.



Sanghyun Alexander Kim, MD

Dr. Sanghyun Alexander Kim completed his Colorectal Surgery fellowship at Mount Sinai Medical Center in 2005 and has since been a key member of its surgical faculty. Over nearly 20 years, he has trained fellows and residents in Colon and Rectal Surgery while focusing on Colon/Rectal Cancer, Fecal Incontinence, IBD, Robotic Colon Surgery, and Painless Hemorrhoidectomy. Renowned for expertise in TEMS and Robotic TAMIS for early rectal malignancies, he performs 80-100 robotic colon and rectal resections annually. Dr. Kim directs multiple satellite offices serving diverse populations, including Korean and Hispanic communities, and partners with organizations to treat uninsured and underserved patients in New York and New Jersey.

Barriers and Opportunities

There are challenges to implementing value-based care, such as fragmented data systems, the persistence of the fee-for-service model, and misalignment between insurers, providers, and policymakers. However, we also have significant opportunities. Advances in digital health tools, population health analytics, and integrated care models can help bridge these gaps.

But more than technology, what we need is a cultural shift. We need to redefine what success in healthcare looks like—not by the number of surgeries performed, but by the number of lives improved and diseases prevented.

A Surgeon's Call to Action

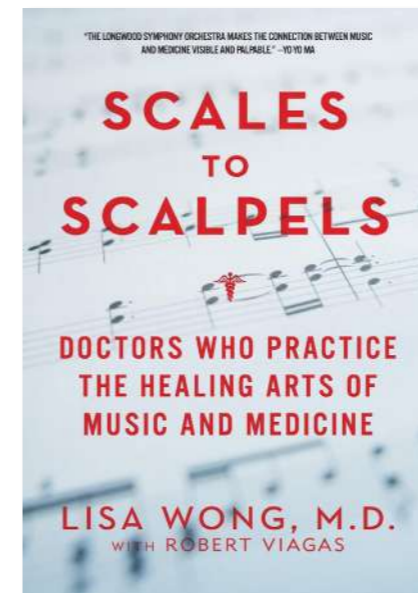
As a senior surgeon nearing the end of my active clinical career, I feel a strong sense of responsibility—not only to my patients but also to the future of healthcare. We must embrace value-based care—not simply as a policy shift, but as a moral imperative.

Let's invest in prevention—not just because it saves money, but because it saves lives. Let's reward care that heals, not just care that treats. And let's work together to build a healthcare system worthy of the trust our patients place in us every day.

The future of American healthcare depends on it.

Scales to Scalpels

Doctors Who Practice the Healing Arts of Music and Medicine



By Lisa Wong, MD
with Robert Viagas

In today's healthcare settings, technology promises connection—yet so often, it delivers the opposite. I've heard many patients share a common frustration: "My doctor hardly looked at me." Instead, their eyes are fixed on the screen, navigating electronic records while the human story slips into the background. Medicine, once defined by the presence of the physician at the bedside, is increasingly mediated through clicks, templates, and timestamps.

That's why *Scales to Scalpels* felt so refreshing—and necessary. In this beautifully woven narrative, Dr. Lisa Wong, a pediatrician and lifelong musician, invites us into a world where healing begins with listening—not just to words, but to silence, to emotion, to music, to what isn't said. Through the story of the Longwood Symphony Orchestra and her own journey through medicine and music, Dr. Wong makes a quiet but powerful case: attention is care.

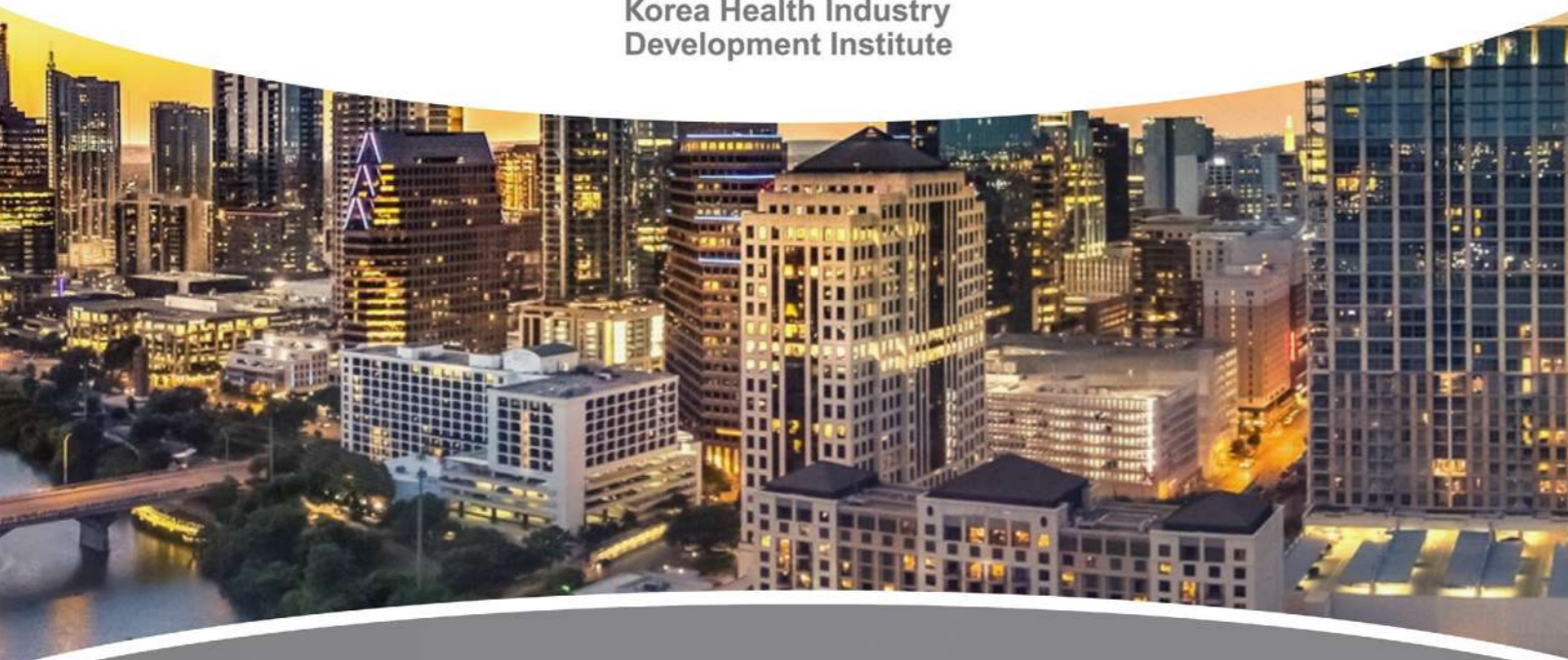
The book doesn't argue for art as a mere "complement" to medicine; it reveals how the habits of musicianship—practice, improvisation, attunement—are the very same habits that make for extraordinary clinicians. She shows us how shared creativity can build community,

deepen empathy, and even transform systems.

But what struck me most was how *Scales to Scalpels* gently reminds us that presence and attention are not optional in medicine—they are what make medicine medicine. In an age of algorithms and acceleration, this book slows us down just enough to remember why we do this work in the first place.

Dr. Wong's vision isn't nostalgic—it's aspirational. She doesn't mourn the loss of connection in modern medicine; she models how we might restore it, one note, one patient, one moment at a time.

Chul Hyun, MD, PhD, MPH



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The Healing Power of the Arts

Dear Mentor,

Dear Dr. Anna Delamerced,

My name is Kendrick Yu, and I am a third year at the University of Alabama at Birmingham.

Growing up, the arts, especially music, has always been a part of my life. Whether it be playing trombone in high school or listening to my mother teach others how to play piano, I have grown to appreciate the impact music has impacted me. Although there are different forms of art, is there a specific art that you are drawn towards? How do you find ways to implement your passion for aspects outside of medicine to your long-term career or even the daily interactions with patients? With medicine being a demanding field no matter where you are in the journey, how were you able to continue fostering your love for the arts? Why do you think it is important to do so? Thank you for your time.

Kendrick Yu

MD Candidate, Class of 2027

University of Alabama at Birmingham Heersink School of Medicine

Dear Kendrick,

Hello! Thank you for sharing these questions with me. I am excited to hear that music and the arts have been an important part of your life. I hope you are able to continue these musical and artistic endeavors even amidst the busyness of school.

My love of music began in childhood. My grandmother was a concert pianist in the Philippines, and my mother plays the piano, so my siblings and I all learned how to play the piano growing up. In college, I started learning how to play the guitar as a fun new instrument to try out. I ended up loving it and began to write original songs, mainly about faith, joy, and the struggles of life. I also loved creative writing and poetry; as a kid, I would

write mini fictional stories in my journal, for example. During medical school, I was able to apply my love of music and writing to various research projects, with the goal of helping patients' wellbeing. Funded by the Bray Medical Humanities Fellowship, I took a gap year before my final year of medical school to do a year-long poetry project for hospitalized pediatric patients. I investigated how a brief poetry activity could improve patients' symptoms such as fatigue and pain, and my results showed that it did improve hospitalized pediatric patients' wellbeing. I have also collaborated with colleagues in the oncology field, where we did a project on a painting activity for cancer patients. During pediatric residency, I completed a similar project where I provided poetry books and activities on the wards. In



all these endeavors, I strive to apply the benefits of the arts for patients' health and wellbeing.

Currently, I am now a general academic pediatric fellow at Boston Children's Hospital. Outside of work, I'm still able to foster my love for the arts and music. I try to play the guitar daily or play in jam sessions with friends often. I continue to write original songs and have been releasing them on Spotify, which has been a joy to see how my lyrics and songs can encourage people and buoy their spirits. I am also still writing poetry, and am currently working on writing a children's picture book about health and illness.

Indeed, medicine is a demanding field in all phases of the journey, from pre-medical life all the way to

attending status. Medicine is a long road, and it is key to your own health and wellbeing to find ways to strengthen your spirits, especially on tough days. For me, music and the arts have been modalities that help fight burnout, and are ways to reflect and process the trials and joys of medicine. When my cup is filled, I find that I am able to help my patients better. I can serve from a full heart and not an empty spirit. Music and the arts help me fill my cup, allows me to reflect on the joys and trials, and gives me strength to face the challenges of medicine. Find out what fills your cup, and keep fostering those passions.



Anna Delamerced, MD, MSc

Dr. Anna is currently a general academic pediatrics fellow at Boston Children's Hospital. She studied at Brown University for both college and medical school, and completed pediatrics residency at Yale. She is passionate about creative writing, poetry, and songwriting.

Welcome to the Student Hub!

The Student Hub, a vibrant platform curated by our Student Advisory Committee (SAC), is a space that is designed to be a go-to resource for students in the healthcare field, offering a wealth of insightful content, mentorship opportunities, and a place to connect with peers and professionals.

Introducing our Interactive Writing Workshop Series

Date

September 18, 2025

Time

7:00 PM Eastern Time



Shanda McManus, MD

Assistant Clinical Professor of Medicine
Hackensack Meridian School of Medicine
<https://www.shandamcmanus.com/>

Calling all writers, artists, and interested students! You are welcome to join us for our first virtual writing workshop on narrative medicine in September.

Featuring a special guest speaker, Dr. Shanda McManus, we will dig deep into the impact of narrative medicine and reflective writing in clinical care. During this workshop, you will learn about effective writing and the impact of storytelling on the storyteller and the audience.

We will read through literature, have engaging and thought discussions, and practice sharing your own story through your experience as a student.

Learn about the power of using your voice and developing your creativity, and network with healthcare students across the nation!

We also welcome all finished pieces through this workshop to be submitted for our next issue.

We would love to feature your work in the Student Hub!

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The Path to Music Therapy and Why It Matters

In this article, Isabelle Spence offers a compelling introduction to music therapy - what it is, why it matters, and how it empowers patients like "E." This piece is especially valuable for students, clinicians, and patients who want to understand how to incorporate supportive therapies like music therapy into holistic, patient-centered care.

From the Editors

To many patients, alternative therapies such as recreational therapy, music therapy, art therapy, and equine-assisted therapy not only promote healing, skill development, and mental well-being, but they can also be empowering and provide opportunities to express autonomy in a medical system that often leaves them without. Supportive therapies can contribute a plethora of benefits to a patient's treatment plan and as the future of the medical profession, it is imperative to know how to utilize and refer to these options effectively and with intention.

Music therapy is a clinical and evidence-based practice facilitated by a board-certified music therapist that utilizes music as the medium to affect change and improve the patient's overall well-being through addressing need areas in cognitive, emotional, physical, social, motor, sensory, communication, and other domains. This can look vastly different depending on the patient's needs and settings. Music therapists serve a multitude of settings including but not limited to, home health, hospitals (in-patient and out-patient), private practice, assisted-living facilities, hospice/palliative care facilities, schools, incarceration centers, day programs, and more. In order to become a music therapist, one must hold a bachelor's degree (or higher) in music therapy from an accredited and approved college

or university program. After the 4-year coursework program, all student music therapists must complete 1200 hours of clinical training including a supervised internship before degree completion. Upon completion of a bachelor's degree or higher, music therapists must sit for the national board certification exam to obtain the credential MT-BC (Music Therapist - Board Certified) which is necessary to professional and ethical practice (American Music Therapy Association, 2025). The profession has two main regulatory organizations, American Music Therapy Association (AMTA) and Certification Board for Music Therapists (CBMT) which ensure quality services and ethical practice. In addition to the national board certification, some states also have title protections, state recognition requirements, and/or state licensure requirements. Just like any other healthcare profession, there is potential for harm by an unlicensed, non-certified practitioner, so referring to a board-certified therapist is essential.

Music therapy is a valuable and cost-effective service for patients in healthcare facilities with all cultural backgrounds, ability levels, and settings. Research shows that music therapy positively impacts length of stay, pain perception, medication administration, and reducing repeat admissions, which increases facilities' profit retention from common reimbursement sources.

Another critical area that music therapy benefits the healthcare system is in patient satisfaction. Patients who receive music therapy rate their satisfaction an average of 3.4 points higher than patients who don't receive music therapy (Gooding, 2014). For more specific information on cost-benefits, treatments, and outcomes in more settings with multiple populations, music therapy research articles can be accessed through PubMed, Journal of Music Therapy, Music Therapy Perspectives, and other peer-reviewed journals.

Throughout my career thus far, I have worked in outpatient hospitals, home health, and schools, though most of my time is spent in patients' homes. Due to the nature of home health, I develop long-term relationships, strong rapport, and collaboration with all my patients and their families, as well as other members on their treatment team. My services serve as a constant in their lives and a safe space for them to express their autonomy while also furthering their goals and improving their quality of life. Most of my personal caseload comes from a disability waiver through Medicaid and thus I work with disabled and neurodivergent patients in all stages of life.

Many of my clients have been on my caseload for

years, some even since I first started in January 2022. One such patient, pseudonym "E", was referred to me through the CLASS waiver and eventually stayed on my caseload through private pay after leaving the waiver program. "E" has GLASS syndrome, a rare genetic disorder that results in various levels of cognitive, speech, motor, behavioral, and emotional needs. She has also been diagnosed with secondary conditions such as aphasia, autism, cerebellar initiation interference, and generalized anxiety disorder. In addition to music therapy, she previously received recreation therapy and speech therapy, and she currently receives occupational therapy, equine-assisted therapy, medication therapy, and case management with a social worker. We have addressed a plethora of skills together, including fine motor isolation and control, acquiring new and strengthening pre-existing communication systems (such as American Sign Language, ProloQuo, verbal speech, and typing), autobiographical recollection, pattern recognition and recall, identifying emotions and perspective taking, increasing self-confidence, holding reciprocal conversations, orienting to time and place, making phone calls, and many other goals to improve her overall quality of life and mental health. One of her favorite interventions in our sessions is the news song,

where we take turns showing a picture from our week, asking and answering questions about when, where, who, what, and why, describing the image using at least four adjectives, and finally identifying one emotion and engaging in a perspective-taking exercise involving making inferences and abstract reasoning.

Throughout our time together, she has progressed immensely and is extremely motivated by music therapy. When "E" and I first started working together, we focused on verbalizing "hello" and



“goodbye,” using people’s names, and typing “yes” or “no.” Now after three years, “E” is writing and speaking full sentences with minimal support, advocating for herself in her treatment plan, and expressing her autonomy over session activities. “E” has also worked with and taught six music therapy students about the art of therapy and effective implementation that empowers and respects patients and their autonomy. For her and many other patients, music therapy has been a safe place for her to work on goals that are important to her, establish a non-family trusted adult to advocate with her, and most importantly, a place for her to feel unconditional positive regard and respect as she is.

It is an honor and a privilege to serve patients, and we have the power to affect positive change in our patients’ lives! It is our duty to acknowledge the power imbalances within the healthcare system, intentionally amplify patient voices, and collaborate with our referral networks to provide the best possible treatment when they are in our direct care and beyond. “Interdisciplinary involvement is vital for the introduction of music therapy into a health care system” (Gooding, 2014). As current and future healthcare workers, we must work together and use all of our collective resources to improve patient outcomes, patient satisfaction, and overall quality of life for all the patients we serve. Music therapists are an excellent addition to your referral list and treatment teams to meet your patients’ needs in and out of healthcare facilities.

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Isabelle Spence, MT-BC

Isabelle Spence, MT-BC, graduated from the University of Alabama with a bachelor’s degree in music therapy and a minor in psychology in 12/2021. Isabelle is passionate about performing on her flute, and she has performed as an ensemble member and a soloist across the country. Isabelle completed her internship with Heart and Harmony Music Therapy in the fall of 2021. Isabelle’s clinical experience includes premature infants in the neonatal intensive care unit (NICU), adults with traumatic brain injuries (TBI), and more, including adolescent and adult populations. She also teaches adaptive music lessons, and serves as a practicum and internship supervisor to teach future music therapists. She currently lives and works in Arlington, Texas.

Inclusive Education Is Life-Saving: LGBTQ Students Deserve Better Sex Ed

By Sanjana Sharma

In classrooms across the country, physical education and health teachers stand in front of the classroom explaining sexually transmitted diseases, diagrams depicting male and female reproductive anatomy, and strategies for disease prevention. But for millions of students around the world, the identities and demographics that they do not address has an overwhelmingly harmful effect of propagating stigma and bias.

Despite growing visibility and acceptance of LGBTQ+ identities over recent years, most sexual health education in North America continues to be largely heteronormative: focused exclusively on heterosexual relationships and cisgender bodies. Additionally, there are parts of the country where abstinence is being pushed as the “norm” to prevent sexually transmitted diseases. It leaves LGBTQ+ youth on the margins, invisible and unacknowledged in curricula meant to promote safety and well-being for all students. Having a lack of sexual health education that pertains to LGBTQ students largely makes students of this identity feel more vulnerable and unsupported, while spreading misinformation. This exclusion isn’t just a missed opportunity. It’s a public health failure - and a moral one.

LGBTQ+ youth are more likely to experience bullying, mental health struggles, and homelessness. Data from the CDC demonstrates that students on the LGTBQ spectrum are more likely to attain sexually transmitted diseases, particularly HIV and syphilis. Young men who have sex with men account for at least two-thirds

of new HIV infections in persons aged 13-29, as well as new syphilis cases in this age group as well. In the case of both diseases, men from backgrounds of color are particularly affected. Young women on the LGBTQ spectrum are more likely to have unintended pregnancies and are more likely to contract STDs/STIs, as compared to female students who identify as heterosexual. Transmasculine youth are also found to have higher rates of unintended pregnancies Research has shown how women who have previously dated men and women are at a higher risk of experiencing dating violence and coercion. LGTBQ youth often turn to substances and recreational drugs as a coping mechanism in the aftermath of structural discrimination and marginalization, with a higher prevalence of substance abuse in LGBTQ populations compared to heterosexual counterparts. Overall, suicide rates are higher in LGBTQ youth compared to heterosexual youth, and seeing the blunt disparities of disparities in sexual health of LGBTQ youth raises an area of concern that could be contributing to the higher suicide rates. Since LGBTQ youth experience more negative sexual health outcomes than their peers, schools across the country offering inclusive sexual health education would be a step in the right direction.

To work towards a solution, it is important to understand the funding and legal landscape regarding sexual health education in North America. A summary of the development of sexual health education in North America is as follows: Abstinence Only Until Marriage education (AOUM) received funding in

the early 1980s under the Reagan administration. This curriculum design emphasized the failure rates of condoms and birth controls, while largely excluding and not addressing LGBTQ sexual health or identities. Heteronormative relationships was the foundation that sexual health education was created on. The advancements began during the Obama Administration, in the 2010s. Two funding programs: Teen Pregnancy Prevention Program and Personal Responsibility Education Program supported addressing safe sexual health practices in adolescent populations and more open, inclusive discussions on reproductive health, as a whole. In the present day, AOUM has rebranded into Sexual Risk Avoidance (SRA) and unlike the programs by the Obama Administration, there is less evidence supporting the effectiveness and inclusivity of SRA regarding positive sexual health outcomes in adolescent populations nationwide. The federal perspective on sexual health is powerful as it sets the tone for norms of sexual health in North America, thus having the potential to manifest as bias and stigma.

While funding and broad, generalized guidance on content of sexual health education in high schools comes from the federal perspective, each state has the freedom to decide specifics on what topics and areas of sexual health are addressed, and in what depth. Planned Parenthood and the SIECUS: Sex Ed for Social Change report that within the past three years: Sex education is legally mandated in 29 states and the District of Columbia. When sex education is provided in schools, only 18 states require that the instruction be medically accurate; 32 states and the District of Columbia require that the information be appropriate for the students' age; eight states require culturally responsive sex education and HIV/STI instruction, and 16 states and the District of Columbia require that information on birth control be provided. In some states, laws outright ban the discussion of same-sex relationships or gender diversity in classrooms. Other

states permit such content but leave it up to local discretion, resulting in patchwork access and wide disparities. While there has been an overall progression since the 1980s centered on AOUM education, there is still room for improvement and the looming threat of a disguised comeback of AOUM under current executive administration. This makes it urgent, that keeping the negative sexual health outcomes in mind, now is the time to advocate for a more inclusive, brighter future for all of America's youth.

This op-ed is a call to action that the solution is simple, yet politically charged: sexual health education must be inclusive of LGBTQ+ identities. Inclusive sexual health should entail teaching about a spectrum of sexual orientations and gender identities in age-appropriate ways. It means including discussions of sexual practices relevant to same-sex couples, explaining STI prevention beyond condom use, and acknowledging the health needs of transgender and nonbinary individuals. Preventative medical care is a dynamic field in the present day, and the younger generation should be educated on ongoing efforts and developments. Furthermore, it is beneficial to show how healthy relationships come in many forms - not just between a man and a woman. Beyond physical health, inclusive sex ed also supports mental and emotional well-being. Affirming students' identities helps reduce stigma and shame - two powerful drivers of isolation and self-harm among LGBTQ+ youth. When a young person



sees themselves represented in a lesson plan, it tells them they belong.

There are solutions in the present day, at the level of national non-profit organizations and national or local research initiatives that support and advocate for LGBTQ inclusive content in sexual health curriculum. The Sexual Information and Education Council of the United States (SIECUS) is a leader in sexuality and sexual education, publishing research, books and distributing resources to communities nationwide on health literacy and education regarding sexual health. SIECUS has worked closely with Planned Parenthood to enact change at the local, state and federal levels on how sexual health should be taught in K-12 schools.

A 2023 research study established a FLASH sexual health education curriculum, developed by a county public health department for high school students, as a means to reduce homophobia and transphobia occurring in local high schools. Inclusive content consisted of overrepresentation of LGBTQ individuals in examples and case scenarios, depicting LGBTQ identities in safe and healthy relationships, facilitating safe spaces for discussion on various aspects of one's identity (sexual orientation, gender, ability, ethnicity, etc.) and how that can influence their sexual health.

A final note regarding proposing solutions, in times of progressive beliefs and increasing advocacy, those in places of influence and position, such as medical professionals, local and government officials,

influencers, community organizations, nonprofits should utilize their platforms to mobilize support, resources and public health education towards positive sexual health outcomes for LGBTQ individuals. This can have greater results of creating safe environments in schools and communities, as bias and stigma. Now more than ever, sexual health education in North America needs to continually be reformed to be more inclusive towards individuals of LGBTQ health, for a healthier rising generation.

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Sanjana Sharma

MS, 2023 Cohort,
Hackensack Meridian School of Medicine

Sanjana is a third year medical student at Hackensack Meridian School of Medicine in New Jersey. She graduated with honors from UC San Diego with a BS in Human Biology and a minor in Global Health. As a medical student, she has leveraged her leadership, research, and community outreach experiences to launch initiatives and advocate for equitable health outcomes among underserved populations. She is passionate about using patient-centered education, culturally competent care, and interdisciplinary collaboration to empower patients and advance reproductive health justice.

UPCOMING CONFERENCE ALERT

What's Right in Health Care®

Dates: August 12–14, 2025

Location: Chicago, IL

Focus: Gathering healthcare leaders and innovators to explore trends in care delivery, AI, and business transformation.

<https://www.huronconsultinggroup.com/events/whats-right-in-health-care>

NACHC Community Health Institute & Expo

Dates: August 17–19, 2025

Location: Chicago, IL

Focus: Community health-focused conference with educational sessions and networking opportunities.

<https://www.nachc.org/conference-page/chi-expo-conference>

AHF National Conference

Dates: August 21–23, 2025

Location: New Orleans, LA

Focus: Blending passion, leadership, and inspiration in a national healthcare gathering.

<https://ahfconference.org>

RISE West

Dates: August 25–27, 2025

Location: Las Vegas, NV

Focus: Insightful sessions on managed care, risk adjustment, and quality improvement in healthcare.

<https://www.risehealth.org>

American Telemedicine Association (ATA) Annual Conference & Expo

Dates: August 30–September 1, 2025

Location: Los Angeles, California

Focus: Exploring advancements in telemedicine and connecting with industry experts.

<https://www.ata2025.org/>

NASHP Annual Conference

Dates: September 8–10, 2025

Location: San Diego, CA

Focus: State health policy leaders gather to discuss current issues and innovative solutions.

<https://www.nashp.org/annual-conference>

Morgan Stanley Global Healthcare Conference

Dates: September 8–10, 2025

Location: New York, NY

Focus: Brings together top executives and investors in the healthcare sector.

<https://www.morganstanley.com>

Baird Global Healthcare Conference

Dates: September 9–10, 2025

Location: New York, NY

Focus: Strategic exchange among leaders of public and private healthcare companies and investors.

<https://www.bairdconferences.com>

Mobile Healthcare Association Annual Conference

Dates: September 13–16, 2025

Location: Louisville, KY

Focus: Shaping the future of mobile healthcare delivery and access.

<https://mobilehca.org/events/annual-conference>

Healthcare Facilities Symposium & Expo

Dates: September 24–26, 2025

Location: San Diego, CA

Focus: Exploring innovations in healthcare facility design, planning, and construction.

<https://www.hcarefacilities.com>

HLTH USA 2025

Dates: October 19–22, 2025

Location: Las Vegas, NV

Focus: Leading event on innovations in health, AI, digital health, and care delivery.

<https://www.hlth.com/2025event>

Healthcare Design Conference + Expo

Dates: October 25–28, 2025

Location: Kansas City, MO

Focus: Design trends and product innovations that enhance the patient experience.

<https://www.hcdexpo.com>

American Heart Association (AHA) Scientific Sessions

Dates: November 8–10, 2025

Location: Dallas, TX

Focus: Cardiovascular science, clinical care, and emerging health research.

<https://www.foundationlist.org/top-healthcare-conferences>

Lifestyle Medicine Conference 2025

Dates: November 16–19, 2025

Location: Dallas/Fort Worth, TX

Focus: Exploring the impact of lifestyle medicine in preventing and reversing disease.

<https://lifestylemedicine.org/aclm-conference>

UPCOMING ISSUE

Beyond the Algorithm: Teaching Medicine in the Age of AI

The landscape of medical education is evolving at breathtaking speed. Artificial intelligence is no longer a futuristic concept—it's reshaping how we learn, teach, and deliver care. From adaptive learning platforms to diagnostic decision support, AI is already transforming the clinical and educational toolkit. But as machines become smarter, how do we ensure that the next generation of doctors stays grounded in empathy, ethics, and human connection? In our upcoming issue, NexBioHealth will explore these questions and more. We'll spotlight innovative uses of AI in training, examine its promise and pitfalls, and hear from students, educators, and clinicians on how we can prepare for this rapidly changing future—one that demands not just technological fluency, but renewed commitment to the human side of medicine.

Stay tuned for this engaging and thought-provoking issue, coming November 2025!

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