

A NEWSLETTER FOR THE U.S. & CANADIAN EL SISTEMA MOVEMENT

## The Brain Benefits of Musical Training

By Eileen T. Crehan, Ph.D. Candidate, University of Vermont; James Hudziak, Director, Vermont Center for Children, Youth, and Families

Studies that work to understand the mechanisms that influence brain development are currently of much interest in the music world. With the imaging technology now available, we are able to determine more and more specifically how music affects the brain.

There are two main types of imaging studies: structural and functional. Structural studies, which incorporate tools such as structural Magnetic Resonance Imaging (sMRI), can give us information about the size and shape of different brain structures. Functional studies use tools such as fMRI, EEG, and Diffusion Tensor Imaging to provide information about how different parts of the brain communicate with each other.

We work at the Vermont Center for Children, Youth, and Families, and our research focuses on family wellness and health promotion. Our most recent study incorporated sMRI to examine how music training affects structural development in the brain. We found that factors such as how long an individual had played an instrument and how old

he or she was were correlated with increased cortical thickness in a number of brain areas, and that the rate of this developing cortical thickness increases in those receiving musical training, irrespective of IQ.

Which brain areas were affected, you may ask? Some very vital ones! Significant effects were found in the motor, premotor, supplementary motor, prefrontal and parietal cortices. These areas are utilized in motor planning, coordination, visuospatial ability, and emotion and impulse regulation. Although the research is not there yet, at some point we may be able to suggest that for a child with difficulties in these areas, music training could be a viable and effective way to promote brain development in the corresponding brain structures.

In addition to studies of brain structure, there is a wide range of investigations across the globe about the effects of music training. For instance, rhythm, an important component of music, is also critical for reading and movement. Dr. Nina Kraus of Northwestern University and her colleagues have proven that children with music training are better able than children without such training to encode linguistic information, which is a prosocial ability. Additionally, music training increases neuroplasticity in children. This means that neurons in the brain adapt to new information more

easily, and new pathways can develop, easing the processes of learning and integrating new experiences. Music training has also been shown to improve vocabulary and reading abilities.

Another focus of international research is the social interaction involved in ensemble playing. Learning to play with others and communicate via music appears to translate into other types of social interactions. In another study completed at our center, we discovered that offering music lessons to children of high-need families significantly increased recruitment and retention of those families into wellness programs. Despite the much larger time commitment required

for the music lesson group, their enrollment numbers for the wellness program were six times higher than numbers for the group not offered music lessons.

This is an important finding, since for high-risk families, levels of engagement in health promotion and prevention programs can be low. Encouraging people to engage through music that then positively influences their brain

development is a no-brainer.

Could it be that a “dose” of music could serve to fend off some of the challenging problems experienced during childhood? Given the positive long-term implications of these studies, how far away are we from recommending music training as an integral component of development?

In summary, the scientific work to date argues for the consideration of music training, playing and listening as legitimate methods to promote health in children who struggle with emotional and behavioral problems. We can hope that music instruction will be a common prescription for at-risk children in the future.

In fact, music provides a unique opportunity to effect positive development for people of all cultures and social classes; the benefits of musical training exist across genders, age, race, and socioeconomic status. Building on this research will hopefully provide the scientific justification to keep music alive and well in our communities, and will continue to illustrate what musicians and music enthusiasts have known all along: music is good for us.

To learn more about this research, read: <http://tinyurl.com/q4ygzg5>



An Atlanta Music Project violinist has a teacher look over her homework assignment prior to music classes Photo: Carlton Mackey

## FROM THE EDITOR

Dear Readers of *The Ensemble*,  
We wished you were there! We felt honored to be present at El Sistema's 40th anniversary concert in Caracas on February 8th. It was highly celebratory – we had expected that – but also profoundly moving in ways we never anticipated.

The 2200-seat Teresa Carreño theater was filled to capacity, and on the stage, which had been extended to football-field proportions, were 1500 musicians. (No, that's not a misprint.) The official program consisted of works by two revered Venezuelan composers, Inocente Carreño and Antonio Estévez, and the fourth movement of Beethoven's Ninth with “Ode to Joy” finale.

But the concert was not only about size and sound. The most extraordinary thing about it was the actual composition of the orchestra.

This became noticeable as early as the orchestra members' entrances, after the choristers had taken their places on the risers in the back. The first players to appear were tiny, maybe 8 years old; their feet swung freely when they sat down. Then the oldest players entered, people in their sixties who were the founders, with Maestro Abreu, of the original youth orchestra in 1975. Each of them sat down next to a small child.

And then came everyone else, players and conductors and directors and even office workers from the second and third and fourth Sistema generations, from all across the country. It seemed that just by watching these entrances, we were seeing the story of El Sistema unfold across time and space.

The encores brought this symbolic messaging to new heights, with the venerable nucleo director Gregory Carreño, handicapped from a decades-ago car accident, on the podium, and Dudamel playing violin -- sitting next to an 8-year-old concertmaster.

It was as though El Sistema was saying, “If you want to know our ‘basic principles,’ just look how we have put this orchestra together. Every decision we have made is a message about who we are.”

The clear and potent message was inclusion: people of all ages, from all regions, playing together, mentoring and helping one another, honoring experience and celebrating youth. Thank you, El Sistema, for this 40th birthday reminder to us all.

Tricia Tunstall

Ron Davis Alvarez of Fundamusical, when asked if he was nervous before performing in the 40th anniversary concert in Caracas: “Nervous? Why? Are you nervous before a party with your friends?”

## News Notes

*Five training opportunities:*

Juneau Alaska Music Matters (JAMM) announces a new one year Master of Arts in Teaching/K-12 certification program focusing on community-engaged teaching practices in partnership with the University of Alaska Southeast and the Juneau Symphony. MAT students will teach at JAMM sites and in Juneau music classrooms. Scholarships (apply immediately) will support the selection of an MAT student String Quartet-in-Residence. Non-scholarship applications deadline is April 1. <http://tinyurl.com/p2ao7zx>; or contact Scott Christian: [srchristian@uas.alaska.edu](mailto:srchristian@uas.alaska.edu) or Lorrie Heagy: [heagyl@gmail.com](mailto:heagyl@gmail.com)

The intensive 12-month El Sistema-inspired Master of Arts in Teaching (MAT) program (a collaboration between the Longy School of Music of Bard College and the Los Angeles Philharmonic) is now accepting applications for 2015-2016 enrollment. Housed at the YOLA at HOLA site, and working with the students, faculty and LA Phil musicians there, participants earn a master's degree as well as a California single-subject K-12 teaching credential. The program boasts a 100% placement rate following graduation. Those interested in scholarships should apply immediately: <http://tinyurl.com/nlbnp3c>

From March 14-20, OrchKids will hold the Creative Leadership Immersion project in Baltimore that has inspired participants in years past. The week enables artists to combine their teaching and performance skills, creating one piece of original music with workshop leaders and OrchKids students; this video gives a feel of last year's work: <http://player.vimeo.com/video/90676474>. For more, contact Dan Trahey: [dtrahey1@jhmi.edu](mailto:dtrahey1@jhmi.edu)

Another chance to work with Dan Trahey: he leads the MUSAID Teaching Fellowship in Belize, August 11-23 2015, working with the Sistema-inspired National Youth Orchestra of Belize, to expand teaching, coaching and performance skills. [Musaid.org/apply](http://Musaid.org/apply).

Community MusicWorks (CMW) 2015 Institute for Musicianship and Public Service (IMPS) in Providence RI is scheduled for June 11-14, and is recognized as a powerful catalyst for musicians to delve into issues of service within one of the nation's most respected programs. The four day intensive is led by CMW faculty. Apply before March 17: [www.communitymusicworks.org/imps](http://www.communitymusicworks.org/imps)

Enjoy the "Happy 40th Birthday El Sistema" video created by Seth Truby (Bravo Youth Orchestras in Portland) and friends at several nucleos. <https://vimeo.com/119809877> Also, this little film from Bravo is the first partnership between a Sistema program and an animal rescue organization. We found the partnering clever: <http://vimeo.com/112427402>

The El Sistema-inspired programs in Massachusetts recently commissioned their first piece for multi-level orchestra and choir through a local composition contest. Many high-quality submissions were received; the winner was *What We Will Be*, by Danielle Williams. It will premier on May 30th at the Third Annual Sistema Showcase held in Boston, performed by students from over ten programs. Afterwards, the winning composition and possibly other contest submissions will be available to be performed by the greater El Sistema community. If interested: [daniellewilliamsmusic@gmail.com](mailto:daniellewilliamsmusic@gmail.com)

Updated Census totals from Joe Hamm.

Students served in the U.S. Sistema movement:

- † FY2011: 3,659 students were served.
- † FY2012: 6,388 students were served.
- † FY2013: 12,727 students were served.

## Resources

Here are two useful video presentations from a Youth Development Summit in San Diego, of which the San Diego Youth Symphony was the lead organizer.

- 1) Denise Montgomery presents the Wallace Foundation's research study *Something to Say* in a 47-minute presentation about engaging "twens" (youngsters between 10 and 12 years of age) in the arts. <https://www.youtube.com/watch?v=clvjnTHEXL8>
- 2) Also find a 58-minute speech by Bill Strickland. He is one of the most important figures in our field. This is a chance to see the kind of presentation that has inspired leaders from local levels right up to the White House. <https://www.youtube.com/watch?v=UnUCuZW6rHw>

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## In School and In Sistema

*by Miki Hatcher, Artistic Director of NJSO CHAMPS; instrumental music teacher in the South Orange/Maplewood (NJ) School District*

There are some universal commonalities about training young musicians, whether this happens in school, after school, privately, or in a group. Teaching music should always be done with love and the belief that every child can learn. All children should be given the opportunity and encouraged to reach their potential every day in practice, daily life and performance. Goals need to be clear and exciting. And teachers need to have a basic understanding of each child and his/her world.

That said, different teaching settings do bring different challenges and opportunities, and it's important to be able to tailor one's teaching style to the needs of each setting and community. In my current public school position, I see students in groups of 4 to 10, one day a week for 25 minutes – yes, that includes tuning, checking charts, etc.! In this setting, understanding what motivates each child is imperative to keep the students engaged. As the year progresses and technique improves, students begin to move at their own pace. I focus primarily on working on the lesson book and the repertoire for the final concert. And I encourage independent learning, since my time with them is so limited.

When I get to NJSO CHAMPS, a Sistema-inspired program, the world changes. String pedagogy doesn't change; but the rate at which musical and personal growth takes place is incredible! Three afternoons each week, for several hours, the students receive lessons, theory and improvisation classes. They inspire each other as they learn and support one another when there are difficulties.

The intensity of the CHAMPS program means that finding the balance can be a challenge. The students can move quickly, and want to, but it's also important to take time for new skills to settle. This process – polishing pieces by working on sound, pitch and musicality – takes a different energy and focus.

Within the Sistema model, we have time and a structure to guide students as they conquer personal and musical difficulties. There is time to celebrate accomplishments. There is opportunity to have a child who feels invisible become visible through performing as part of a musical team. Watching our students develop as musicians and members of our musical community keeps us all excited and inspired. The life skills learned during this musical and personal discovery benefit and inspire the broader community.

**"To achieve great things, creative breakthroughs, you need a plan and not quite enough time."  
– Leonard Bernstein**