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Upcoming National Conference Bridges Neuroscience and Education

The brain is "plastic," according to recent findings in neuroscience, and that concept can help teachers and educators improve learning. Brain plasticity will be the focus of a gathering of nearly 800 educators, from across the U.S. and other countries, to be held in Massachusetts at the end of this month.

The Learning & the Brain conference was co-founded by Kenneth S. Kosik, co-director of the Neuroscience Research Institute at the University of California, Santa Barbara, and Harriman Professor of Neuroscience Research, along with Anne Rosenfeld and Kelly Williams. The 20th edition of the conference will be held in Cambridge, Mass., on April 26-29, and registration is still open. See: < <http://www.learningandthebrain.com/> >. Continuing education credits are available to participants. (*The conference fee is waived for credentialed members of the press* .)

This year's conference theme is "neuroplasticity," or how the brain changes with learning, memory, and experience. The meeting will focus on the discovery that the brain is not "hardwired" from birth, but holds a remarkable lifelong power to change. Positive or negative environments, exercise, nurturance, learning, and other experiences continue to change the brain throughout life.

These revolutionary findings point to new possibilities for "rewiring" the brain to help overcome learning disorders and to enhance memory, learning, IQ, and achievement

in all learners. "Neuroscience has the potential to transform education," said Anne Rosenfeld, conference president.

Conference participants will learn about:

- Brain-based teaching for children, adolescents and adults
- How stress and early adversity shape brains and later learning
- New insights into reading and math disorders and interventions
- Influences that change the brain and affect learning
- Cutting-edge environments, technology and insights into adult learning
- Techniques for treating mood, ADHD, stress, and learning problems
- How the brain can be retrained to improve attention and memory

- The role of brain plasticity in resilience, empathy, and teaching

While learning and the brain go together like hand and glove, it was not until 1999 that educators and neuroscientists created a gathering place to discuss new research findings with respect to the classroom and clinical practice. "This marriage between neuroscience and education is pretty new," said Kosik. "But people now see it as a discipline in its own right."

The Learning & the Brain conference evolved a decade ago when Kosik met with conference coordinators Anne Rosenfeld and Kelly Williams. Rosenfeld and Williams were referred to Kosik by the Belmont, Mass. superintendent of schools, who told them about the Saturday workshops that Kosik was holding in Belmont to teach children, parents, and teachers about the brain. He was a professor of neuroscience at Harvard University during this time.

Together Kosik, Rosenfeld, and Williams founded the national Learning & the Brain conference. The first conference, in 1999, featured a welcome video by then-first lady Hillary Clinton.

Regarding this year's conference and neuroplasticity, Kosik explained that perhaps no other topic within the vast field of neuroscience has lured more neuroscientists than the question

of how the brain changes with learning and memory. "While neuroscientists approach this topic at the level of genes, and synapses, and brain imaging, clearly the fruit of this research will impact how we can better educate our children," he said.

Kosik sums up a few of the reasons why the bridge between neuroscience and education is so important:

- Measurable benefits accrue from art and music education, from learning a second language, and from physical exercise.
- The performing arts foster the sustained attention necessary to improve performance in other areas of cognition.
- Early interventions and enrichment have long-term measurable benefits and are most beneficial when implemented from birth.
- Education offers protection against late life cognitive impairment such as Alzheimer's disease.
- Adjusting the school day to be more in accord with the sleep-wake cycles of children and young adults has been solidly shown to have measurable benefits.

"These are just a few of the concrete contributions that neuroscience has made to education," said Kosik.

This year's conference features a prestigious list of faculty members that includes prominent neuroscientists, psychiatrists, psychologists, and educators. Several of them have written important books in the field of learning and the brain.

Kurt Fischer, director of the Mind Brain and Education Program at the Harvard University Graduate School of Education, will present special remarks. Fischer said that the conference has helped pioneer connecting biology and cognitive science with educational practice and policy. He edits the award-winning new journal, *Mind, Brain and Education*, published by Blackwell. "Every conference brings together top scientists who are doing cutting-edge research with practitioners who lead the way

in connecting research to practice," said Fischer. "Neuroscience is creating powerful tools that can greatly improve education."

Conference co-sponsors are: Martinos Center for Biomedical Imaging at the Massachusetts Institute of Technology; Mind Brain and Education Program at Harvard Graduate School of Education; Comer School Development Program, Child Study Center at Yale Medical School; Dana Alliance for Brain Initiatives; Department of Speech, Language, and Hearing Sciences at Boston University; Boston University School of Education; Neuroscience Research Institute at the University of California, Santa Barbara; National Association of Secondary School Principals; and Public Information Resources, Inc.

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