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#### META TAGS

April Benasich, professor of neuroscience and director of the Infancy Studies Laboratory at Rutgers–Newark’s Center for Molecular and Behavioral Neuroscience, is learning how the brains of young children—even babies just 2 to 4 months old—process sounds and acquire language.

#### KEYWORDS

neuroscience, infants, cognitive development, Rutgers, Rutgers-Newark, Infancy Studies Laboratory, Center for Molecular and Behavioral Neuroscience

TITLE FOR JUMP-PAGE BANNER Groundbreaking Neuroscience Research

TITLE: LEVEL 1 HEADER Little Brains, Big Ideas

#### INTRO TEXT

The babies may be small, but the ideas are big.

April Benasich, professor of neuroscience and director of the Infancy Studies Laboratory[\[http://babylab.rutgers.edu\]](http://babylab.rutgers.edu) at Rutgers–Newark’s Center for Molecular and Behavioral Neuroscience, is learning how the brains of young children—even babies just 2 to 4 months old—process sounds and acquire language. Ultimately, these studies could lead to innovative techniques for recognizing potential learning problems early in a child’s development and crafting remediation tools to correct language processing difficulties even before babies start to talk.

SUBHEAD: LEVEL 2 HEADER A Welcoming Environment

#### BODY TEXT

This is brain science, but it’s not just any type of brain science. Step into the Infancy Studies Laboratory, and you’ll see brightly colored toys and video screens with playful ducks and “Sesame Street” characters. It’s a welcoming place, with the lab relying on volunteers—parents, that is—who bring their children to participate in long-term studies.

[RUTGERS TODAY VIDEO: Please insert video here.]

SUBHEAD: LEVEL 2 HEADER Groundbreaking Data

At the Infancy Studies Laboratory, researchers study the brains of children over a period of years, which allows the lab to gather groundbreaking data about how children acquire language at an age of astonishing brain development. The lab’s “prospective longitudinal studies” involve tracking the same children as their brains develop and they learn to talk.

“We have a group of children who are turning 7, 8, and 9,” says Benasich, “and we have been following them since they were 6 months of age.”

By seeing them when they’re bundles of cuddly, nonverbal cuteness, and now when they’re walking and talking gymnasts and soccer players, Benasich can transform her data capturing infant brain activity into meaningful conclusions about the way early patterns of brain activity can predict the risk for later learning problems.

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CALL-OUT A mix of undergraduates, graduate students, research assistants, and postdoctoral fellows work in the lab, assisting Benasich and colleagues on research studies.

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#### BODY TEXT

In one particularly notable finding[\[http://news.rutgers.edu/medrel/news-releases/2008/04/rutgers-research-imp-20080409\]](http://news.rutgers.edu/medrel/news-releases/2008/04/rutgers-research-imp-20080409), Benasich and her lab determined that how efficiently a baby processes differences between rapidly occurring sounds is a key predictor of future language problems.

That’s right: Potential learning difficulties for school-age children—with early reading skills, say—can be predicted in babies before they are even 1 year old.

Where will these findings lead? Eventually, Benasich envisions developing techniques—or even an interactive toy—to help the brain develop more efficiently during infancy and to ameliorate language learning disorders. The idea would be to “gently guide the baby’s brain toward a more optimal strategy of attending to what’s important in the sound environment,” and that may “either prevent a child from having a learning disorder at all or ameliorate it.”

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#### SIDEBAR SPOTLIGHT

TITLE Participate!

TEXT Yes, your baby can participate in Rutgers research.

Parents and children volunteer their time for studies at the lab, engaging in a pleasant—and fun—learning experience, even as they are furthering scientific research to benefit future generations.

The Infancy Studies Laboratory is looking right now for babies aged 3 to 11 months, children with autism between the ages of 4 and 8, and children without autism between

the ages of 3 and 7. [Learn more](http://babylab.rutgers.edu/Babylab_Info_for_Parents.html)[[http://babylab.rutgers.edu/Babylab\\_Info\\_for\\_Parents.html](http://babylab.rutgers.edu/Babylab_Info_for_Parents.html)].

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#### FYI BOX

TITLE April Benasich on the Science Network

TEXT Tune into the Science Network for an in-depth, 90-minute interview with April Benasich. [View the video](http://thesciencenetwork.org/programs/ultimate-block-party-the-arts-and-sciences-of-play/april-benasich-1)[<http://thesciencenetwork.org/programs/ultimate-block-party-the-arts-and-sciences-of-play/april-benasich-1>].

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#### SIDEBAR SPOTLIGHT

TITLE Collaboration, from Harvard to Finland and Beyond

TEXT This is a particularly prolific year for April Benasich and the Infancy Studies Laboratory, with a number of studies being published in journals such as *Clinical Neurophysiology* and *NeuroImage*.

Benasich collaborates with an eclectic mix of researchers from around the United States, and the world, including scientists at Harvard Medical School, the University of California–San Diego, and the Salk Institute, as well as universities and institutes in Germany, Italy, France, Finland and elsewhere. [Learn more](http://tdlc.ucsd.edu/research/highlights/rh-benasich-2010.html)[<http://tdlc.ucsd.edu/research/highlights/rh-benasich-2010.html>].

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#### SIDEBAR SPOTLIGHT

TITLE Neuroscience and Rutgers–Newark

TEXT What is the role of sleep in forming memories? Could a better understanding of how fear operates in the brain lead to improved treatment for anxiety disorders?

These are just some of the questions being studied at Rutgers–Newark’s Center for Molecular and Behavioral Neuroscience. Founded 25 years ago, the center is composed of scientists and research centers at the forefront of studying the human brain. [Learn more](http://www.newark.rutgers.edu/neuroscience/) [<http://www.newark.rutgers.edu/neuroscience/>].

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#### RELATED

Infancy Studies Laboratory  
<http://babylab.rutgers.edu>

Center for Molecular and Behavioral Neuroscience  
<http://www.cmbn.rutgers.edu/>

Behavioral and Neural Science Graduate Program  
<http://bns.rutgers.edu>

Graduate School–Newark  
<http://gsn.newark.rutgers.edu/>

Rutgers–Newark Neuroscientists on PBS’s “Brain Fitness for Kids”  
<http://news.rutgers.edu/medrel/news-releases/2009/06/rutgers-university-n-20090602/>

National Science Foundation Award for fMRI Research  
<http://news.rutgers.edu/medrel/newark/newark-2010/1-820-000-from-natio-20101027/>