

## Autism Research May Be Used as Screen

A Kansas University professor has contributed to research that could lead to technology that could screen for autism-related disorders.

The research showed that preverbal vocalizations of very young children with autism differ from those of typically developing children.

The technology involves a small recording device — called a Language Environment Analysis (LENA) system — that sorts child vocalizations from other sounds, said Steve Warren, professor of applied behavioral science and vice provost for research and graduate studies at KU.

He is one of the authors of a study published in the July 19-23 online edition of the journal Proceedings of the National Academy of Sciences.



*Para educator Marilyn Bailey, back, helps Chandler Adolph move through various yoga poses during an outing of the Free State Summer Autism Program at Dance Hues dance studio on Wednesday, July 14, 2010.*

“I think it’s obviously an exciting development, because it’s a very different way of looking for developmental disability,”

Warren said.

Warren called the new research a “proof of concept” study that will require more in-depth testing to determine how useful the technology will be in diagnosing or screening for autism.

In the coming years, Warren said he anticipated that many more studies would be done using the LENA technology, opening the door for research into clinical applications, research and screenings.

“It’ll be five or 10 years at least before we really know if this is a game-changer for autism,” he said.

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## Hundreds of Kids Have Benefited from Language Program

The Kansas University Language Acquisition Preschool (LAP) will celebrate 25 years of service on Saturday. Its theme: “Once a LAPer always a LAPer.”

LAP is a licensed program that serves children with speech and language impairments and learning English as a second language, as well as children with typical language development. Since its opening in 1985, LAP has served 538 children.

Around 18 students ages 3 to 5 participate in a program of three hours a day, four days a week with curriculum developed by LAP instructors.

Dr. Betty Bunce, director of the program, said the curriculum was based on a balance of teacher lead and student choice activities. Unlike other programs mainly guided by teacher input, Bunce said, the LAP program embeds literacy into everyday activities to give children the opportunity to make their own choices.

“By giving them the choice of what to do, you’re building on their interests and giving them the motivation to learn,” Bunce said. “We want the children to re-invent knowledge and make it their own, and in doing so become problem-solvers.”

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The idea that children with autism display different vocalizations than normally developing children isn't new, Warren said. Some parents of children with autism have pointed out that their children were displaying different vocal characteristics, Warren said, and studies have been conducted on the issue before.

But what held back the science was the lack of measuring technology. In the past, researchers would need to painstakingly transcribe hours of tape-recorded conversations.

Using the LENA technology, the authors of the study were able to examine 3.1 million different child utterances from 1,486 all-day recordings of 232 children. Parents willing to participate in the study placed the device on the child's clothing, and conducted the recordings themselves.

Many children who develop autism don't show these kinds of developmental speech patterns, Warren said, so he said he guessed that any potential screening would be able to identify autism in some children, but not in others.

*This article was written by Andy Hyland and printed in the Lawrence Journal-World on July 20, 2010.*

## BNCD INVESTIGATOR HIGHLIGHT

Dr. Susan Kemper is a participating faculty member in the Gerontology Doctoral Program as well as in the Child Language Doctoral program in addition to that in Cognitive Psychology. Dr. Kemper's research interests cover the life span, focusing on the role of working memory in language processing by young and older adults and language acquisition by children. Her research, "The Language Across the Lifespan Project" addresses how aging affects the processing of spoken and written language and includes comparative studies of healthy older adults and adults with Alzheimer's disease. The research ranges from studies of how older adults' memory affects their speech to studies of how to enhance older adults' comprehension through "elderspeak," a set of special speech modifications designed for older adults. Recently, Dr. Kemper has established a eye tracking laboratory for age-comparative studies of reading and visual information processing. Along with other researchers, she examined early language abilities as a predictor of late-life cognitive impairment and Alzheimer's disease. Dr. Kemper's research has been supported by a series of grants from the National

Institute on Aging, including a Research Career Development Award. She received the 2004 Master Mentor Award from the Retirement Research Foundation and the American Psychological Association, Division 20 (Adult Development), based on nominations from her doctoral and post-doctoral students.



Susan Kemper, Ph.D.

## Information for Older Adults

### Free Memory Screening

Date: August 13, 2010

Time: 1:00 p.m.-3:00 p.m.

Location: Landon Center on Aging, Room 270

The KU Alzheimer & Memory Program will be conducting a free, confidential memory screen for older adults. The results will be yours to keep and to take to your doctor. Additional information and educational materials will also be available. Please call in advance to reserve a time for your screening.

To schedule,

call: (913) 588-0555 or

e-mail: [KUAMP@kumc.edu](mailto:KUAMP@kumc.edu)

### Research participants needed:

Parkinson's disease patients between the ages of 40 and 70 years.

**Purpose:** To study the relation between rigidity (lip stiffness) and speech.

### Procedure

Speech testing will occur in two phases; first without your PD medications at approximately 8AM, and again at 10AM after you have taken your PD medications. During the testing, you will be asked to pronounce some simple syllables and read 2 sentences while we record your lip and jaw movements. This study will last approximately 3 hours. You will receive **\$40** for participating in this study.

**Contact:** Shin Ying Chu,  
Phone: 785-979-3665  
Email: [shinying@ku.edu](mailto:shinying@ku.edu)

## BNCD Children's Research

### The KU Infant and Early Cognition Laboratories are looking for infants (0-18 months) to participate in studies!!

**Description:** Currently, we are studying factors that influence infants' attention. We are also interested to know how babies learn to tell the difference between different numbers.

**Participants:** Infants between 0-18 months.

**Time Commitment:** Most of our studies require a one-time visit to one of our labs (we have labs in Overland Park and Lawrence). The visit will take about 30 minutes.

**Benefits:** While there is no direct benefit to parents or infants, knowledge gained from these studies will help to advance our understanding of child development.

**For more information,** contact Caitlin Brez, Ph.D.

**Contact Information:** [babylab@ku.edu](mailto:babylab@ku.edu)  
(913) 897-8590 (Overland Park lab)  
(785) 312-5345 (Lawrence lab)

\*\*Check us out on Facebook: KU Infant and Early Cognition Laboratories\*\*

### Do you have trouble understanding your child's speech? Does your child have difficulty learning new words?

**The purpose** of this research project is to examine word learning by preschool children with language or speech sound delays. We want to determine how the organization of words and sounds affects children's ability to learn new words and to develop effective vocabulary teaching strategies.

**Ages:** 4-5 year old children with (1) language delays or (2) speech sound delays

**Time commitment:** 5 weekly sessions lasting 45- to 60-minutes. Sessions will be scheduled at your convenience in a suitable location (e.g., your home, nearby library, KU campus)

**Benefits:** free speech-language evaluation with report; small prizes for your child; compensation for travel expenses

If you want to know more about this study,  
**Contact:** Word & Sound Learning Lab; 785-864-4873; [wrldrng@mail.ku.edu](mailto:wrldrng@mail.ku.edu)  
**Website:** [www.ku.edu/~wrldrng](http://www.ku.edu/~wrldrng)

### Does your child speak both Korean and English?

**The purpose** of this research project is to examine how the organization of words and sounds in single versus multi-language learners influences sound processing.

**Ages:** 4-5 year old preschool children who speak both Korean and English.

**Time commitment:** 6 weekly sessions lasting 45- to 60-minutes. Sessions will be scheduled at your convenience.

**Benefits:** Free speech-language evaluation with report.

**Contact:** Su Yeon Lee; 785-550-8997; [suyeon@ku.edu](mailto:suyeon@ku.edu)

*(KU language Acquisition Lab, Continued from page 1)*



Kansas University Graduate student Katie Pierson, left, works with preschoolers on painting during the first day of summer classes Wednesday at the Dole Center. KU's Language Acquisition Preschool is marking 25 years of service.

The heart of the LAP style of learning is the idea of dramatic plays. Each day the children are given different scenarios to participate in. One day they might be on a pirate ship, the next day on a baseball diamond. The plays help the children learn how to make decisions, ask questions, act in different roles and use a variety of vocabulary and sentence structure, among other things.

Besides serving children, the program has provided training for nearly 400 undergraduate and graduate KU students in speech language pathology, special education, human development and many others areas of study.

Katie Pierson, a second-year graduate student in speech pathology who has helped with the school for two years, said one of the most rewarding parts to the program is seeing the children develop their skills firsthand.

"It's wonderful to see the kids progress and move on and know that you've made an impact," Pierson said.

Bunce said the variety of services, whether to children, university students, teachers or researchers, makes the program so important.

"We give the children opportunities to grow and succeed that they might not have otherwise had in other preschool programs," Bunce said.

*This article was written by Aleese Kopf and printed in the Lawrence Journal-World on June 11, 2010.*





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#### **About This Newsletter:**

The BNCD newsletter is designed to keep you informed about the ongoing research projects that are being conducted by BNCD researchers at the University of Kansas. Participants who have been part of recent research projects conducted by BNCD researchers, parents who have expressed interest in participating in future research, and individuals from organizations such as schools and daycare centers that have an interest in BNCD studies will receive this newsletter from time to time to keep them up-to-date about the research activities at the BNCD. If you do not wish to receive future newsletters, please call or e-mail the BNCD to have your name removed from our list. Research at the BNCD is supported in part by grant number 5 P30 DC05803 from the National Institute on Deafness and other Communication Disorders (NIDCD) at the University of Kansas.

## 2009 Notable Children's Videos

- A Box Full of Kittens.*** 17min. Nutmeg Media, DVD. 1-877-262-3690. Ages 3-7.
- Bugs! Bugs! Bugs!*** 8min. Weston Woods Studios, DVD. Ages 2-6.
- Do Unto Otters: A Book About Manners.*** 10min. Weston Woods Studios, DVD. Ages 4-8.
- Grandfather's Journey.*** 10min. Weston Woods Studios, DVD. Ages 5-10.
- Hannah's Story.*** 29min. National Film Board of Canada, DVD. Ages 8 and up.
- Madam President.*** 9min. Weston Woods Studios. DVD. Ages 6-10.
- March On! The Day My Brother Martin Changed the World.*** 20min. Weston Woods Studios, DVD. Ages 8 and up.
- The True Story of the Three Little Pigs.*** 8min. Weston Woods Studios. DVD. Ages 3-8.
- What Do You Do with a Tail Like This?*** 8min. Weston Woods Studios. DVD. Ages 4-8.
- You're All My Favorites.*** 10min. Candlewick Press, DVD. 1-800-733-3000. Ages 2-6.