WHO

Investigators, research and administrative staff, graduate and post-doctoral students

The LSI brings together 120 scientists who are affiliated with 20 academic departments to study human development from its genetic origins through the final stages of life. These investigators are supported by 350 research and administrative staff members, including 70 graduate research assistants.

The Institute has two affiliated multidisciplinary graduate/doctoral programs, the Child Language Doctoral Program and the Gerontology Graduate and Doctoral programs, as well as several post-doctoral training programs.

WHAT

Research, training, technical assistance, direct services, and leadership

The Life Span Institute’s 12 centers have more than 110 programs and projects active at any one time that constitute basic and applied research, training, direct services, consultation, and technical assistance.

Research informs everything that the Institute does and ranges from groundbreaking studies in cellular and molecular biology of the early stages of development to designing schoolwide models to improve classroom behavior and learning.

Last year, 3,708 nursing, allied health, medical students, and residents and 47,326 service providers, practitioners, individuals, and families learned more about disabilities and development through Institute training and 6,705 Kansans benefited from LSI-affiliated direct services and technical assistance.

WHEN

History

The Schiefelbusch Institute for Life Span Studies was established in 1990 when the distinguished 67-year-old Kansas Bureau of Child Research was joined with the Gerontology Center and other newer research groups to form one of the premier research institutes on human and community development, disabilities, and aging in the world. The Bureau was directed for 35 years by Richard L. Schiefelbusch for whom the Institute is named.

The Institute has had two directors, Stephen R. Schroeder, who retired in 2001, and presently, Steven F. Warren.

WHERE

Administrative and Research Locations

The Institute's central office is in the Robert Dole Human Development Center at the University of Kansas in Lawrence with components at the John T. Stewart Children's Center and Malott Hall, in Kansas City at the Juniper Gardens Children's Project and the University of Kansas Medical Center's Ralph L. Smith Research Center, and at the Life Span Institute in Parsons.

Much of the work of the Institute is accomplished in and directly benefits underserved Kansas City neighborhoods and rural Kansas counties.

Several projects are collaborations with researchers in other parts of the state, region, country, and world and are regional, national, or international in scope.

HOW

Funding

The Life Span Institute attracts more combined federal, state, and private dollars than any other designated research center at the University of Kansas, drawing $19.5 million in sponsored project support in FY 2003-04. Each state dollar brought in ten external dollars this fiscal year.
Collaboration. It sounds so nice. In fact it can be of the most challenging of all human endeavors. It requires the ability to compromise, to communicate clearly, to be a team player, to share, to work for the common good, and more. Throughout much of the history of science, collaborations were relatively rare. A scientist could spend his or her whole career as a lone wolf hidden in a lab, surrounded perhaps by students and staff, but rarely if ever truly working with a peer, particularly from another discipline. But the world is changing. Now researchers must increasingly possess the social and intellectual skills to be effective and successful collaborators.

Why is this happening? The answer in a nutshell is that most of the easy problems in both the behavioral and the biological sciences have been solved. Now the important problems that drive knowledge forward are increasingly found at the intersection of many disciplines. For example, we know that most intellectual disabilities have their impact on development and behavior through an interaction of genes and environment played out in the context of the brain over time. To fully understand and effectively treat most of these disorders requires the evolution of a bio-behavioral science that incorporates a very wide range of disciplinary knowledge from fields as conceptually different as biology, computer science, engineering, developmental and behavioral psychology, speech and hearing science, education, and more.

At the Life Span Institute we have known for a long time that our mission—to develop research-based solutions for the challenges of human and community development, disabilities, and aging—can only be achieved by problem-driven collaborations across many disciplines. This report provides a range of examples of collaborations LSI scientists currently engage in. These involve all sorts of creative combinations of talent and interest harnessed not because it’s fun to collaborate (it’s often very hard work), but because further progress on the big problems we collectively face demands nothing less.

Steven F. Warren, Director
The Schiefelbusch Institute for Life Span Studies

The Centers

Intellectual disabilities, the aging brain, how we learn to talk and think, the independence of individuals with physical disabilities in society—these are among the big themes that drive the work of the affiliated Centers of the Schiefelbusch Institute for Life Span Studies.

Each Center draws together a distinct group of researchers from diverse fields and backgrounds with a common interest in investigating specific problems of human development, disabilities, and aging. Together the Centers represent a broad range of approaches to human problems from preconception to the end of life.

While scientific innovation requires specialization, it also increasingly demands collaboration. The Life Span Institute provides the infrastructure that supports this through project development and management; administrative and technical support; research design and measurement; data storage and analysis, and dissemination.

Center descriptions begin on page 12.
Child neglect, the largest category of child maltreatment, is one of the most common yet understudied threats to the normal development and well-being of children. In 2002 an estimated 2.6 million referrals concerning the welfare of approximately 4.5 million children were made to U.S. Child Protection Service agencies.

Researchers and social service agencies alike have been disappointed more often than not in trying to break the cycle of child neglect, particularly among very young, unmarried mothers.

But some approaches have been successful and these are the basis for a comprehensive national intervention study, Preventing Child Neglect in High-Risk Mothers. It is the first such project designed as an experiment, with a carefully selected control group and rigorous measurements of all relevant variables, such as standardized tests of child language and cognitive development.

KU's Mental Retardation and Developmental Disabilities Research Center and Juniper Gardens Children's Project along with the University of Notre Dame, Georgetown University, and the University of Texas Health Science Center, were awarded $8.5 million by the National Institute of Child Health and Human Development for the five-year study.

Steven Warren, director of KU's Life Span Institute and Judith Carta, Life Span senior scientist, direct the Kansas City site study that will follow 100 single teenaged mothers from pregnancy to when their children are three years old. Kathleen Baggett, assistant scientist, coordinates the study.

A total of 400 women are being recruited in Kansas City, Houston, Washington, D.C., and South Bend, Indiana.

Warren and Carta's work has shown how critical early interaction between a child and parent is to the child's cognitive development.

"We know that child neglect harms children, families, communities and societies," Carta said, "but we need to know more about which approaches and what kinds of support will measurably prevent child neglect in high-risk families as well as enhance overall child development."

The Kansas City mothers will be divided randomly into two groups. Both will get services and support, but one group will receive intensive direct intervention in a comprehensive parenting training program.

As just one example, mothers will be taught to recognize their infants' cries or bids for attention and to respond in a warm and sensitive manner. As the child matures, the mother will be taught methods of enhancing vocabulary development.

"In short," Carta said, "our goals are to develop sensitive and responsive parents, who are aware of the importance of language, cognitive, and social interactions."

Carta predicts that mothers who go through the more intense program will be less likely to engage in child maltreatment and to need social or educational assistance down the road.

The intervention program, if successful, will be translated into print and video materials that can be used by a wide variety of professionals working to prevent the incidence of child neglect.
National collaborations target inherited disorder

In 1991, scientists identified a single gene on a “fragile” site of a characteristically long-armed X chromosome as responsible for the most common inheritable cause of mental retardation, Fragile X syndrome (FXS). Two new major collaborative studies assure KU a prominent role in this fast-breaking area of research.

Steven Warren, Life Span Institute director, is leading both projects at KU that are collaborations with the University of North Carolina at Chapel Hill, renowned for Fragile X research.

KU has joined North Carolina as its research partner in a five-year $6 million National Institute of Child Health and Human Development (NICHD) grant that establishes a designated national Fragile X research center focusing on how families adapt to having a child with FXS.

Warren, along with KU Associate Research Professor Nancy Brady, has shown how crucial parenting style is to children’s language development—particularly for children with developmental disabilities.

“Children with FXS can be more irritable, hyperactive, and impulsive compared to typically developing children,” Warren explained, “Even parents who are warm and responsive may find these behaviors challenging at times.”

The second collaborative project, which includes the University of California at Davis, is a three-year NICHD grant to plan a multistate screening of one million newborns for FXS.

Although it is the most common inherited cause of mental retardation, no one knows exactly how common. Finding out the true prevalence of the single-gene disorder is the first order of business.

FXS affects a single gene on what is termed a “fragile site” on the X chromosome and occurs in both males and females, but in males more frequently and severely.

Children with FXS, unlike those with Down syndrome, do not have obvious identifying physical features as infants. As children with FXS get older, doctors may confuse their developmental or behavioral symptoms with other disorders until genetic tests are performed. Most children are not diagnosed until they are nearly three years of age.

Consequently little is known about the early development of children with FXS. Some children miss out on early treatment and therapies, and families may have more than one child with FXS without knowing that they are at risk.

According to Warren, the researchers who are planning the FXS universal screening are pioneering new directions in health policy.

“Currently, only disorders that can be treated are routinely screened for,” he said, “but the rapid advances in genetics are pushing us as a society to consider the ethical, legal, and technical implications of knowing more about our individual genomes as early as possible.”
Language disorder draws international effort

What determines when and how we learn language?

This question underpins an ambitious research collaboration directed by Mabel Rice, Fred and Virginia Merrill Distinguished Professor of Advanced Studies and director of three of the Life Span Institute’s 12 centers.

Twins and Singletons with Specific Language Impairment, a five-year $3 million National Institutes of Health study is teasing out evidence on the genetic-environmental interplay of language development and disorders.

The collaboration spans the globe, with scientific partners in Kansas, Nebraska, Britain, and Australia, including Co-Directors Professor Stephen Zubrick and Associate Professor Kate Taylor of Curtin University of Technology in Perth, Australia.

Ostensibly, the study focuses on Specific Language Impairment (SLI), a language disorder for which Rice and Kenneth Wexler of the Massachusetts Institute of Technology identified a “grammatical marker” and developed the first diagnostic test.

But at a more fundamental level, Rice says, the study is about the nature of the human mind and how language unfolds as part of that intellectual apparatus.

That SLI grammatical marker, the misuse of some verb forms, was gleaned in part from years of testing northeast Kansas kids and their families. The disorder seemed to run in families and was more common in twins. Rice suspected that SLI had a genetic basis and she wanted to look for it.

She needed a large group of children similar to the Kansas children ethnically and socio-economically, but whose birth and health histories were known and more accessible to researchers. Most importantly, she needed twins, lots of twins.

This is where Australia comes in. Perth is demographically practically identical to Kansas City, health records are readily available, and Rice’s colleagues at Curtin University had directed large population studies. And then there was the Western Australia Twin Registry, a gold mine for researchers since it is a record of all multiple births in that part of Australia.

Now Rice and colleagues have 1,879 single-born children whose health and development is known to compare to 720 twin pairs whose development will be measured from ages 2 to 6 years.

Rice’s colleagues will take DNA samples from all the children to continue the search for a genetic basis for SLI. However, Rice cautions, “No one is assuming that this is going to be a single gene that could be replaced in some kind of gene therapy.”

But if the SLI grammatical marker turns out to be more prevalent in identical twins than fraternal twins or single-born children, it will be strong circumstantial evidence for a genetic cause of the disorder.

Rice expects the twin study to help scientists design better ways to treat language impairments by focusing on those parts of the language system that are not inherited.

Further, the study will reveal much more about the language development of all children since the researchers will be collecting very fine-grained information about how and when children’s grammar abilities develop and the environmental variables that may come into play.

Finally, Rice says, the twin study will help us know that children with language impairments like SLI are no less smart, motivated, or socially sensitive. “We know better than that now,” she says, “and this will help us better specify what’s going on.”

A study of Australian twins continues a search begun in Kansas for the source of a language disorder.

Courtesy The West Australian
First things first: building communication with children who have deaf-blindness

Life Span Institute researchers have begun to explore a sort of final frontier this year with the hope of communicating with the children who live there.

These children, who have varying degrees of vision and hearing losses and suspected cognitive disabilities, often have little or no communication—no way to control their world, according to Research Assistant Professor Susan Bashinski.

Bashinski and Co-Director Nancy Brady, associate research professor, along with Project Coordinator Joan Houghton, are the research team that will adapt and test a communication strategy for children with deaf-blindness and cognitive disabilities called Prelinguistic Milieu Teaching (PMT) with a five-year $1.25 million Department of Education grant.

PMT was originally developed to improve the communication of children with cognitive disabilities by Life Span Institute Director Steven Warren and Vanderbilt University Professor Paul Yoder in the early 1990s.

PMT teaches a child to communicate with nonsymbolic vocalizations and gestures such as touching, pointing or reaching toward objects. Body movements can also be used to refer to activities with certain actions, such as swinging.

“Physical therapists would never try to teach a child how to walk if she or he hadn’t sat up yet,” Brady pointed out, “but speech clinicians often try to teach a child with deaf-blindness and cognitive disabilities to communicate using braille or sign language even if they aren’t intentionally gesturing.”

In PMT, the adult follows the child’s lead in an activity that a child enjoys, such as rocking on a toy horse, then looks for cues that the child wants to continue the activity, such as a rocking gesture, Brady explained. “Eventually the child may learn to request the activity by producing a gesture, perhaps combined with a vocalization.”

The adapted PMT will incorporate cues that have been found to be effective for children with deaf-blindness, such as hand-under-hand support and touch and object cues.

After the children have developed a repertoire of nonsymbolic gestures and vocalizations, the researchers will introduce more symbolic communication.

“We might give a child a card with a piece of backpack strap on it that could be used to signal that it was time to go home,” Bashinski explains. “Such textural and object cues are critical for children with deaf-blindness.”

Deaf-blindness is rare, with only about 12,000 children and youth affected nationwide, and in Kansas, about 134 between the ages of birth through 21. Children who have both deaf-blindness and cognitive disabilities are even more rare, and are among those most in need of research-validated treatments, according to Brady.

“Families and therapists are desperate to communicate with these children,” says Brady, “so if the adapted PMT is effective, we expect it to be adopted quickly.”
Scientist Steve Fowler can’t do everything, and that has frustrated him ever since he began his career.

“The only thing aversive about graduate school was the requirement that you narrow yourself down,” he mused.

Instead, Fowler, KU professor of pharmacology and toxicology, senior scientist at the Life Span Institute, and co-director of the Biobehavioral Measurement Core of the Mental Retardation and Developmental Disability Research Center, became the consummate collaborator.

“Steve Fowler is at the nexus of biological and behavioral research at KU,” said Life Span Institute Director Steven Warren. “He is everywhere, generously contributing his expertise and time to the success of others’ research while successfully pursuing his own.”

Fowler, who has authored more than 100 publications, said he began to unleash his many interests when he came to KU in 1994, crediting the university’s ethic of supporting collaboration. “I was kind of like a kid in a cookie jar, finding out what other people did and getting involved.”

Fowler has currently narrowed himself down—to computing, electronics, behavioral analysis, behavioral pharmacology and behavioral genetics—all of which he engages to build instruments that look at phenomena that have never been looked at before.

As one example, his Force Plate Actometer, for which he has been awarded a patent and a National Institutes of Health Small Business Innovation Research Program grant, can precisely discern and characterize subtle movement in laboratory rats and mice.

Fowler’s Actometer may help Robert White find a breakthrough therapy for Duchenne muscular dystrophy (DMD), a devastating progressive muscle wasting disease. White is the director of the Molecular Genetics Research Laboratory at Kansas City’s Children’s Mercy Hospital.

The Actometer showed that mice that were genetically altered to replicate DMD, and then received gene therapy to partially restore healthy muscle, moved like normal mice.

Fowler is best known for measuring the effects of antipsychotic drugs, but his current collaborations include research into alcohol and cocaine addiction; Alzheimer’s disease, Lesch-Nyhan syndrome, a form of mental retardation; aging; neurodegenerative diseases, and a possible new source of stem cell-like cells.

Fowler may have found a way to do everything after all. “After we humans satisfy basic needs, we need a sense of purpose. For me, that is working on problems that have real importance and helping others with similar goals.”
Organizing baby’s brain: a breakthrough technology

Babies who are born prematurely are often in grave danger. They may not be able to suck, swallow, or breathe on their own. Some “premies” suffer strokes or hemorrhage during or shortly after birth.

All of them may benefit from a unique device developed at the University of Kansas called the Actifier invented by University of Kansas Speech-Language-Hearing Professor Steven Barlow with University of Colorado Assistant Professor Donald Finan.

Barlow describes the Actifier as a pacifier that becomes an active diagnostic and habilitative device once it is plugged into a rolling cribside laboratory. It is currently being tested on 390 babies at neonatal intensive care units at Stormont-Vail Regional Health Center in Topeka and the KU Medical Center in Kansas City.

For Barlow, a neuroscientist and director of the Communication Neuroscience Laboratories, the Actifier is the culmination of more than 15 years of collaboration with physicians, engineers, and physiologists to produce a technology that would both measure and treat threats to infants’ brain development. The University has applied for a patent on the device.

A $2 million National Institutes of Health study supports basic research and clinical trials of the Actifier in the neonatal intensive care units to diagnose and correct infants’ sucking problems and to explore underlying nerve and brain processes.

A baby’s ability to suck is about more than getting nourishment. This motor behavior generates sensory flow that nurtures the brain to form and strengthen nerve connections and pathways.

Barlow and others believe that reinforcing such model patterns of nerve activation strengthens new connections in the developing brain.

A gentle pulsing of a motor behind the nipple stimulates nerve endings in the soft tissues of the baby’s lip that transmit signals to the circuits in the brain that coordinate and time muscle contractions.

The Actifier returns information on the connectivity of brain stem circuits and other parts of the brain. It also tells physicians and nurses how the baby is responding when it is sucking, including its motor organization, suck pressure and frequency, and muscle reflexes, all in real time on the device’s instruments.

The Actifier becomes a habilitative device when it gives the baby model suck patterns to imitate through the movement of the nipple. Barlow and others believe that reinforcing such model patterns of nerve activation strengthens new connections in the developing brain.

Barlow said physicians are particularly excited about the Actifier’s potential to help two groups of babies in the study: those with respiratory distress syndrome (RDS) and those who have vascular strokes, or intra-ventricular hemorrhage (IVH).

Babies with RDS need to learn to suck after they get off ventilators, or they may not thrive and develop as expected. Doctors need better functional measures of IVH in babies as well as a way to retrain stroke-damaged brains.

By 2007, Barlow hopes to have some diagnostic and treatment guidelines for these babies and other premies with feeding disorders.

“The Actifier should help those babies be more proficient feeders and get their sensorimotor systems organized.”

The babies will continue to be tested on the Actifier at regular intervals until their second birthdays. At that time, Barlow will turn them over to KU Professor of Psychology John Colombo, an expert at testing the intelligence of very young children. If Barlow is right, these children may have IQs 10 to 15 points higher than their counterparts who were not treated with the Actifier.
Some 1,250 Northeast Kansas elementary school children will lunge and leap around their classrooms for the next three years—and that’s just what Joe Donnelly wants them to do.

Donnelly, director of the Center for Physical Activity and Weight Management, believes that children who exercise while they learn—for just 100 minutes a week—will be leaner and learn more than their peers who don’t.

It’s called PAAC, for Physical Activity Across the Curriculum, a five-year study of 2,500 Kansas elementary school children funded by a $3 million National Institutes of Health grant.

The program is simplicity itself: no equipment, gymnasium, or time away from academics is required, since children learn math, science, spelling, and other subjects in motion for about ten minutes twice a day. Some examples:

• When students solve for x in Algebra Aerobics, they answer in jumping jacks or squats.

• In States of Matter kids pretend to be floating molecules that rush together to be a solid or whirl apart when they become a gas.

• Children lunge or leap frog whenever they think a new syllable begins in Syllable Split.

According to Donnelly, more than 25 percent of American children are overweight or obese and this tracks into adulthood. If a child is still overweight or obese as an adolescent, the odds are 28 to 1 that he or she will be an overweight or obese adult and a prime candidate for type 2 diabetes.

Donnelly will find out if PAAC works in 2006 by comparing the body mass index and standardized academic achievement test scores of 1,250 children who exercise in class with 1,250 control group children in Lawrence, Topeka, and Kansas City schools.

A smaller group of 460 children will be studied more closely to see how the classroom exercise program affects blood lipids, glucose, insulin, and blood pressure—as well as more about how exercise benefits learning, a relatively new area of investigation.

“There is increasing evidence that learning through movement appeals to diverse learning styles and results in a more alert and focused student,” Donnelly said.

If PAAC proves to prevent obesity and improve learning, it could be a simple but powerful antidote to the obesity epidemic, particularly since many schools are eliminating physical education classes or sports programs.

And the obesity epidemic, Donnelly warns, “is an epidemic our country simply cannot afford.”
Financial

From FY 2003 to FY 2004, external awards remained constant at $19.5 million — tying the highest amount in Life Span Institute (LSI) history. In addition, LSI received a one-time, dual award for nearly $11 million as described below. More than 40 of our 110 awards were new this past year, demonstrating continued versatility and vitality while maintaining our status as the largest designated research center at the University of Kansas in terms of combined federal, state, and private dollars.

The National Institutes of Health and the U.S. Department of Education remain the leading funding sources at $8.1 million and $6.3 million respectively. With the addition of $1.2 million in Health and Human Services Department funding, federal awards account for 80 percent of the Institute’s overall external funding.

In addition to the funds listed above, the Assistive Technology for Kansans project received the largest one-time award in the history of the LSI, nearly $11 million. The award greatly expanded the ability of the Kansas Assistive Technology Cooperative, established in 2000, to make low-cost loans for assistive technology to Kansans with disabilities by stabilizing the cooperative’s flexible loan program. The Telework program authorized loans to support working by distance as an employment option for Kansans with disabilities. The U.S. Department of Education provided $8.3 million, while the Kansas Governor’s office provided matching funds of $2.6 million.

The Life Span Institute continues to leverage external funding at an increasing rate. In 1990, every dollar the state of Kansas invested in the Institute yielded more than $3 in external awards. In 2004, every dollar the state of Kansas invested in the Life Span Institute yielded nearly $10 of external awards.

* FY 2004 does not include $10.9 million in flow-through funds for the Kansas Alternative Financing Program (KAFP) and the Kansas Telework Program (KTP) (KAFP = $7.3M U.S. Dept. of Education + $2.5M Kansas Governor = $9.8M; KTP = $1.0M U.S. Dept. of Education + $100K Kansas Governor = $1.1M)
2004 Passages

Schiefelbusch Institute for Life Span Studies inaugurates development effort

Director Steven Warren set in motion the Life Span Institute’s first development effort in the spring of 2004 when Richard Schiefelbusch, founding director, and his wife, Ruth, agreed to serve as the first co-chairs of the Friends of the Life Span Institute.

“The Friends will help shape the course of our long-term objectives,” said Warren, “serving as a sounding board for determining just what we should strive to do in the future.”

Warren anticipates that the charter group of Friends will, in turn, approach other potential Friend members and Institute supporters.

Warren said that the Institute and its affiliated centers had attracted major gifts over the years that created research centers and professorships to support disabilities and child development research and research dissemination.

“We have every reason to believe that an organized effort to tell people about what their support could mean to fund innovative research in disabilities, aging, and human and community development, will be very successful.”

Contact Steven Warren, 785 864-4295, sfwarren@ku.edu, or Dale Slusser, 785 832-7458, dslusser@kuedowment.org for more information on Friends of the LSI and other giving opportunities.

KU Work Group to be WHO collaborating center

The Work Group for Community Health and Development, directed by Stephen Fawcett and Associate Director Jerry Schultz, has been designated as an official World Health Organization collaborating center. The new center will be called the University of Kansas/WHO Collaborating Centre for Community Health and Development.

A WHO collaborating center is designated by the Director-General of the World Health Organization as part of an international collaborative network to carry out activities in support of the international agency’s mandate for international health.

The Work Group will collaborate with the Pan American Health Organization, one of WHO’s six regional offices, to expand the evidence base and build capacity for community health and development globally using the adapted resources of its Community Tool Box.

The Community Tool Box is a web site (http://ctb.ku.edu) that distills decades of the Work Group’s research and practice to take groups—from grassroots to government—through planning, implementation, and evaluation of community health and development initiatives.

Over the next four years, the Work Group will translate and adapt the existing CTB content into Spanish, Russian, Chinese, and Arabic. The Spanish-language version will be known as the Community Tool Box of the Americas.

The CTB and its cultural variations will link global users to resources that support sixteen “core competencies” including community assessment, strategic planning, advocacy, and social marketing.

Site users will also be able to call up more in-depth support for developing a strategic or evaluation plan, and read case examples that reflect culturally grounded work in areas such as infant and child health, HIV/AIDS, nutrition, reproductive health, sanitation, and water quality.

KU and the Work Group will be in select company as a WHO/PAHO Collaborating Center, joining such institutions as Yale University, Johns Hopkins University, and the U.S. Centers for Disease Control and Prevention.
The Schiefelbusch Institute for Life Span Studies (LSI) named John A. Colombo, professor of psychology, as its first associate director for cognitive neuroscience in March 2004.

Among Colombo’s charges at LSI is leading KU’s efforts to create a strong cross-disciplinary research program in cognitive neuroscience—the study of the neural processes that underlie behavior, thought, language, and learning.

“The development of a strong cognitive neuroscience program fits well within the future goals of the Life Span Institute and KU’s life sciences initiative,” said LSI Director Steven Warren. “John Colombo’s own research in this field and leadership at KU makes him an ideal choice for this important role.”

Colombo’s career exemplifies success as both a scientist and a teacher. In the last two years alone, he was elected a Fellow in both the American Psychological Association and the American Psychological Society. In the past year, he has served on a National Institutes of Health (NIH) Special Emphasis Panel on Cognition and Development and a National Science Foundation panel, and was recently selected to serve on a review panel at the Institute of Education Sciences for the U.S. Department of Education.

He also won the Chancellor’s Award for Outstanding Graduate and Professional Mentoring and Advising and the J. Michael Young Outstanding Academic Advisor Award for the Social Sciences.

He currently holds grants from the National Science Foundation (NSF), the National Institutes of Child Health and Human Development, and industry, and is a core director of LSI’s NIH-funded Center for Biobehavioral Neurosciences in Communication Disorders.

In 2004, his research on infant nutrition and cognitive development with KU Professor of Nutrition Susan Carlson showed that babies of mothers with higher levels of the nutritional compound, DHA, had advanced cognitive development. His current NSF grant studies infants’ perception of time during learning.

Colombo received a doctoral degree from the State University of New York–Buffalo in 1981 and came to KU in 1982 as a research associate and then principal investigator for the Life Span Institute. He has been a tenure-track faculty member of the College of Liberal Arts and Sciences since 1988.
Kansas Mental Retardation and Developmental Disabilities Research Center

The Kansas Mental Retardation and Developmental Disabilities Research Center (MRDDRC) is one of 14 national centers dedicated to the scientific investigation of the causes, prevention, and treatment of intellectual and developmental disabilities supported by the National Institute of Child Health and Human Development (NICHD). Research is conducted in labs, in clinics, and the community as close to 60 investigators from the biological and behavioral sciences seek solutions to the challenges of intellectual and developmental disabilities. Sixty-four research projects are organized around four themes: language, communication disorders and cognition in mental retardation; risk, intervention, and prevention in mental retardation; the neurobiology of mental retardation, and the cellular and molecular biology of early development. The need for fundamental, systematic research on disabilities is as critical now as when the NICHD research centers were established 41 years ago. The MRDDRC remains at the forefront of this national effort.

Steven F. Warren, Ph.D., Director
Peter Smith, Ph.D., Co-Director
Contact: 785 864-4295, mrdrc.ku.edu, mrdrc@ku.edu

Kansas University Center on Developmental Disabilities

More than 30 years ago, as the Institute’s research on developmental disabilities took root, efforts began to translate this research into practice through what is now known as the Kansas University Center on Developmental Disabilities (KUCDD). Virtually all of the Institute's direct service, technical assistance, and post-doctoral, pre- and in-service training are associated with KUCDD. These include clinics to diagnose and treat children with disabilities, a statewide project that provides assistive technology to people with disabilities, and training childcare providers and social workers how to support individuals with disabilities. KUCDD research has state, national, and international impact in areas like self-determination, positive behavior supports, inclusive educational practices, early childhood education, community and workplace supports, and family systems and supports.

Michael L. Wehmeyer, Ph.D., Director
Glen W. White, Ph.D., Associate Director

David P. Lindeman, Ph.D., Parsons Director
Chet D. Johnson, M.D., Kansas City Director
R. Matthew Reese, Ph.D., Kansas City Assistant Director
Wendy Parent, Ph.D., Lawrence Assistant Director
Contact: 785 864-4295, lsi.ku.edu/kucdd, kucdd@ku.edu

The Life Span Institute at Parsons

For more than 40 years, the University of Kansas has maintained research, service, and training programs housed on the campus of the Parsons State Hospital, including a major component of the Kansas University Center on Developmental Disabilities. This Institute, located in rural southeast Kansas, has an exemplary record of research in the areas of language development, vision, and cognitive disabilities. Additionally, this program has provided significant service and training across the State of Kansas particularly in the areas of assistive technology, early childhood, and training for community-based organizations and agencies.

David P. Lindeman, Ph.D., Director
Contact: 620 421-6550, ext. 1713,
www.parsons.lsi.ku.edu, Parsons@ku.edu

Juniper Gardens Children’s Project

The Juniper Gardens Children’s Project began in 1964 when citizens from the northeast Kansas City, Kansas neighborhood joined with faculty from the University of Kansas to devise solutions to specific problems in educational achievement and parenting in that low-income community. The Project has grown over the years from a small, community-based research initiative housed in the basement of a liquor store to a unique internationally recognized research center that includes multiple community sites, projects, and investigators. The Project is particularly recognized for its contributions to the development of effective approaches for accelerating learning and reducing classroom conduct problems in both special and general education. In 1996 JGCP was given the Research Award of the International Council for Exceptional Children in recognition of its outstanding research contributions.

Charles R. Greenwood, Ph.D., Director
Contact: 913 321-3143, www.jgcp.ku.edu

Beach Center on Disability

The Beach Center on Disability has a steadfast commitment to making a difference in the quality of life for persons with disabilities and their families. It is committed to listening to the priorities of families, service providers, policy makers, and researchers, incorporating those priorities into the Center’s research agenda, related training, technical assistance, dissemination and utilization activities. Primary areas of Beach Center research include the effects of public policy on the quality of life and community integration of families; the ethical, legal, and social implications of the Human Genome Project; disability policy generally; family-professional partnerships; access to the general curriculum; self-determination; assistive technology for individuals with cognitive disabilities, and positive behavioral supports in schools, homes and communities. The Beach Center was named for Ross and Marianna Beach in 1988 in honor of their significant roles in advocating for families affected by disabilities.

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Research and Training Center on Independent Living

The Research and Training Center on Independent Living (RTC/IL) was formed in 1980 to develop systematic approaches to enable people with disabilities across the lifespan to live independently, control their lives, and shape their futures. The Independent Living Core addresses advocacy, services, and interventions; the Health Promotion Core promotes health practices that reduce the risk of health problems, and the Disability Policy Core is concerned with policy issues that impede or facilitate independent living. The RTC/IL is now developing an International Disability Research Core with contacts in Vietnam, Poland, Korea, and Peru.

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Gerontontology Center
The Gerontontology Center’s affiliation with the Bureau of Child Research in 1990 paved the way for an extended research agenda of the newly formed Life Span Institute. Center researchers are interested in all areas of aging, but are distinguished by seminal research in communication and aging, long-term health care and housing alternatives, and decision making in later life. The Center coordinates an interdisciplinary graduate certificate program in gerontology for students enrolled in any master’s or doctoral program at the University as well as a multidisciplinary graduate program that offers both masters and doctoral degrees in gerontology. Center staff members also work with a wide variety of public and private agencies in developing programs for older persons and their families and assisting agencies and organizations with evaluations of programs and public policies.

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The Center for Biobehavioral Neurosciences in Communication Disorders
The Center for Biobehavioral Neurosciences in Communication Disorders (BNCD) became the Life Span Institute’s newest affiliated research center in 2002 when the National Institute on Deafness and Other Communication Disorders awarded a core grant to establish the center. The BNCD is a natural outgrowth of the Life Span Institute’s long standing focus on communication and language development and intervention. The BNCD’s research spans a wide range of issues relevant to the causes and treatment of communication disorders from infancy to old age including studies on infant attention, the decline of working memory in old age as reflected in speech, and more precise measures of hearing loss to aid cochlear implant design.

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Child Language Doctoral Program
The Child Language Doctoral Program was established in 1983 as the first specialized degree program in the emerging field of child language acquisition. The program focuses on the interdisciplinary academic preparation and research training of child language specialists. The internationally recognized faculty bring diverse approaches to the study of how children communicate and speak. The program offers students a wide choice of research tools, facilities, and field sites including the Child Language Acquisition Studies Lab that has the largest known archive of transcribed spontaneous samples from preschool children diagnosed as receptive/expressive specific language impaired. Research sites and practica are provided by the Life Span Institute, the Language Acquisition Preschool, and the clinical and research facilities of the Speech-Language-Hearing Clinic.

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Merrill Advanced Studies Center
The Merrill Advanced Studies Center, founded in 1990 with an endowment from Virginia Urban Merrill and Fred Merrill, is a catalyst for scholarship on disabilities and policies that shape university research. Merrill conferences and publications establish new directions and build collaborative projects in both science and policy. World-class experts often meet as a group for the first time at Merrill conferences and go on to develop national projects that answer key questions in science. The Center publishes books on topics relevant to developmental disabilities and makes policy papers available online and in print. The Merrill web site at merrill.ku.edu has fact sheets and discussions on science and policy for the general public.

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Work Group for Community Health and Development
The mission of the Work Group for Community Health and Development is to promote community health and development through collaborative research, teaching, and public service. Formed in 1976, its current work is in three domains: community/public health, child/youth health and development, and community development. The Work Group has assisted with state and community initiatives in many critical areas, including substance abuse, adolescent pregnancy, youth development, rural health, health promotion, child well-being, systems change, and neighborhood development in urban communities. Many years of the Group’s work has been distilled into an Internet site, the Community Tool Box at ctb.ku.edu. This site provides comprehensive technical assistance, consultation, and distance learning to connect people, ideas, and resources for promoting community health and development.

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Center for Physical Activity and Weight Management
The Center for Physical Activity and Weight Management joined the Institute in 2001 and supports research, training, and clinics for weight loss and weight maintenance. The Center is interested in the “metabolic syndrome,” abnormal values for blood lipids, glucose, insulin, and blood pressure that accompany overweight and obesity. The Center also has a major effort aimed at preventing overweight and obesity in children by increasing physical activity and reducing high fat, energy dense foods in elementary schools. The Center’s Energy Balance Laboratory features a whole-room indirect calorimeter that measures energy expenditure precisely under a variety of experimental conditions.

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