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## Discovery

### Expanding Perspectives of Young Scientists

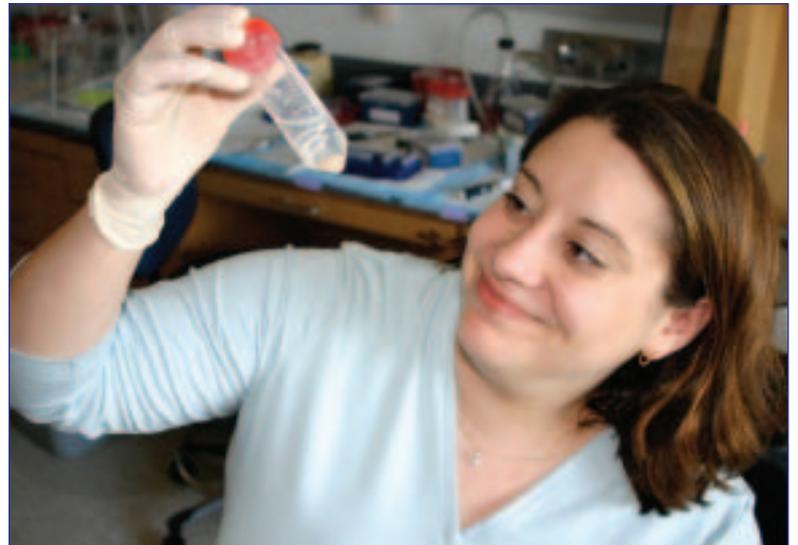
Michelle Jacobs is a biologist studying genetics, behavior, and development. Brad Folley is a clinical psychologist using the tools of neurobiology to explore psychosis and creativity. They're the future of science—researchers with expertise across fields of knowledge, able to ask scientific questions from new perspectives, prepared to use a wide variety of methods to answer questions about development and disabilities.

In the past, doctoral and postdoctoral training typically meant becoming highly specialized within a single area. Researchers from different fields often found it difficult to discuss research together, let alone conduct research together.

Today we understand that biology and behavior are continuously shaping development. Never has it been more important for scientists not just to bridge disciplines but to collaborate. At the Vanderbilt Kennedy Center, young researchers are being prepared for this new world of interdisciplinary science.

As an undergraduate at Case Western Reserve University, Michelle Jacobs majored in biology and psychology but had opportunities to do genetics research. This interest, especially the genetics of autism, led her to Vanderbilt's Neuroscience Graduate Program.

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Michelle Jacobs, doctoral candidate

### Brain Research and Blindness Rehabilitation

By David F. Salisbury



Nick Guidice, University of Minnesota

It was an unusual gathering of two kinds of people: those who are interested in persons who are blind because of what blindness can tell them about the nature of the brain and those who are interested in the brain because of what it can tell them about the nature of blindness and how to help people adapt to it.

Nearly 50 experts from a variety of fields including basic brain research, special education and rehabilitation came to Nashville from around the nation and world to discuss recent advances in the basic understanding of how the brain handles spatial information and how this new knowledge can inform efforts to train and assist individuals who have lost their sight.

The workshop "Blindness, Brain Plasticity, and Spatial Function," held March 11-14, was co-sponsored by the Vanderbilt Kennedy Center and organized by a group of Vanderbilt researchers: John Rieser, Ph.D., professor of psychology and human development; Daniel Ashmead, Ph.D., associate professor of hearing and speech sciences and

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### Director's Message

#### Training Future Generations



Pat Levitt, Ph.D.

People are generally uncomfortable in venturing beyond their area of expertise in any profession. Yet, the modern study of human development and brain function demands that our efforts include experimental approaches from multiple disciplines.

How do we approach this quandary? While established scientists may be more conservative in exploring beyond their normal boundaries, their students and research fellows can bring a youthful exuberance to

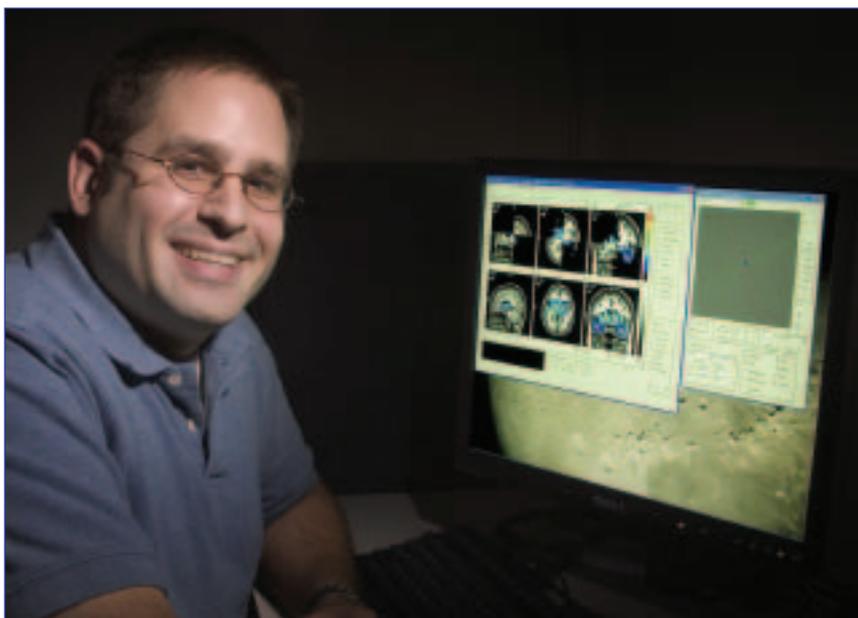
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## Expanding Perspectives

from page one

“I chose Vanderbilt because of the interdisciplinary first-year program where we’re exposed to different fields,” Jacobs said. She’s working in the lab of Ronald Emeson, Ph.D., Joel G. Hardman associate professor of pharmacology, associate professor of molecular physiology and biophysics, and Kennedy Center investigator.

Jacobs’s research is on the serotonin 2C receptor. One of the brain’s most important neurotransmitters, serotonin is linked to a wide variety of processes—mood, appetite, sleep, sexual behavior, anxiety. Jacobs explained that at least 15 different kinds of serotonin receptors are known. The 2C receptor is found only in the brain and has been



Brad Folley, doctoral candidate

implicated in obesity, depression, schizophrenia, sleep disorders, and perhaps aggression and obsessive-compulsive disorder.

“The 2C receptor undergoes a process known as RNA editing, so one gene can produce up to 24 different receptor proteins,” Jacobs explained. “Each of these proteins varies in how it signals in neurons in response to serotonin. I study one of these protein isoforms, the nonedited isoform, which has been shown in Dr. Emeson’s lab to have greatest signaling via certain intracellular pathways. We’ve taken the 2C gene and modified it so that only the nonedited isoform can be expressed, and now we’re creating a mutant mouse model that only expresses this single isoform.”

Jacobs lists a few of the questions that will follow. Are all 24 2C receptor proteins necessary for normal behavior or is the one with the greatest activity sufficient? Since lack of the receptor is known to cause obesity, will leanness result? Since mice lacking the 2C receptor abuse cocaine, will sole expression of this isoform be protective for substance abuse?

Jacobs acknowledges it is a bit unusual for neuroscientists to do what she is doing, combining neuroscience, genetics, behavior, and development in an encompassing program. The expert advice of her thesis committee members is crucial to her

obtaining the training she needs; one committee member assists her with developmental aspects, another with behavior and brain-specific areas, another with serotonin expertise.

At the University of Maryland, Brad Folley majored in psychology and biology/zoology and minored in art history, foreshadowing his research on creativity. His first job was in a National Institutes of Health lab investigating the effects of medications on cognition in such disorders as schizophrenia and bipolar disorder using brain imaging methods. That was followed by imaging research at Johns Hopkins University Medical School working with children with neurogenetic and neurobehavioral disorders.

“I fell in love with functional neuroanatomy and imaging as a research tool,” Folley said. He sought a program that would combine training in severe mental disorders and imaging. He selected

Vanderbilt’s clinical psychology program and last year entered the Developmental Psychopathology Research Training Program. His advisor is Sohee Park, Ph.D., associate professor of psychology and Kennedy Center investigator.

Folley is investigating the behavioral and neurobiological correlates of creativity in persons with schizophrenia, persons with no history of psychotic disorder, and “schizotypes,” extremely creative

persons who have schizophrenia-like traits but are not psychotic. His research methods include near infrared optical tomography, to investigate activity in the cortex during creative tasks, and diffusion tensor imaging, which tracks white matter (connections between the cell bodies, or grey matter).

“The frontal lobes have been thought to be the site of creative thinking. We’re finding that it’s a network of prefrontal cortex, anterior cingulate, and hippocampus—areas involved in generating new thoughts, cognitive inhibition, and semantic networks.”

The hypothesis is that creative thinkers not only have behavioral correlates of putting ideas together, lower inhibition, and greater network priming, but they also have innate, intrinsic processes in the brain that facilitate connections.

Folley works with clinical psychologists, radiologists, and cognitive neuroscientists. “It’s a well-rounded education and research experience, facilitated by all this interdisciplinary activity,” he said.

Although Folley and Jacobs approach scientific questions from different disciplines, both are motivated by concern for persons. The point of research, including molecular research, as Jacobs sees it, is “to help someone and improve their quality of life.” ●

## Primer

### VANDERBILT RESEARCH TRAINING PROGRAMS

Vanderbilt Kennedy Center researchers serve as faculty in these training programs.

#### Developmental Disabilities Research Training Program

- Predoctoral trainees pursue programs in psychology or special education
- Postdoctoral fellowships offered
- Web: [kc.vanderbilt.edu/kennedy/researchers/devdis.html](http://kc.vanderbilt.edu/kennedy/researchers/devdis.html)
- Supported by National Institute of Child Health and Human Development

#### Developmental Psychopathology Research Training Program

- Predoctoral trainees from psychology, psychiatry, pediatrics, and education
- Postdoctoral fellowships offered
- Web: [kc.vanderbilt.edu/kennedy/researchers/devpsych.html](http://kc.vanderbilt.edu/kennedy/researchers/devpsych.html)
- Supported by National Institute of Mental Health

#### Training Program in Neurogenomics

- Postdoctoral training in human and model system genetics, molecular biology, biochemistry and proteomics applied to questions of neural development, plasticity, and disease
- Ph.D. and M.D. fellows drawn from both basic science and clinical departments
- Web: [www.mc.vanderbilt.edu/vumc/centers/neuro/](http://www.mc.vanderbilt.edu/vumc/centers/neuro/)
- Supported by National Institute of Mental Health

#### Vanderbilt Kennedy Postdoctoral Fellows

- Postdoctoral fellowships offered in areas including neuroscience, neurogenetics, behavior, and education
- Web: [kc.vanderbilt.edu/kennedy/researchers/researchassociates.html](http://kc.vanderbilt.edu/kennedy/researchers/researchassociates.html)
- Supported by Vanderbilt Kennedy Center

#### Vanderbilt Neuroscience Graduate Program

- Offers predoctoral trainees choice between integrative/cognitive track or molecular/cellular track
- Web: [braininstitute.vanderbilt.edu](http://braininstitute.vanderbilt.edu)
- Supported by National Institute of Mental Health

#### Vision Research Training

- Predoctoral trainees pursue programs in psychology, neuroscience, cell biology, pharmacology, or electrical engineering
- Postdoctoral fellowships offered
- Web: [vision-research.vanderbilt.edu/pages/vtpg.html](http://vision-research.vanderbilt.edu/pages/vtpg.html)
- Supported by National Eye Institute ●

## Director's Message from page one

multidisciplinary research that is infectious. We rely on our trainees to push us beyond our own generational boundaries, which makes the research programs of the Vanderbilt Kennedy Center so exciting and unique.

If you want to effect change long-term, invest in youth. The transfer of knowledge from one generation of scientists to the next guarantees that science moves forward and builds on the wisdom of the past. Kennedy Center investigators serve as mentors in a variety of National Institutes of Health-funded predoctoral and postdoctoral research training programs (see "Primer" for list) across the Vanderbilt campus. Last year, we initiated a new Kennedy Center Postdoctoral Training Program, in which outstanding candidates from graduate programs around the country compete for a limited number of positions. These fully funded positions encourage the best and brightest to continue on a career path of investigating the mysteries of developmental disabilities.

Although the Vanderbilt Kennedy Center is most heavily invested in predoctoral and postdoctoral training, we know that the commitment to become a scientist grows out of formational early educational experiences. We must be creative in cultivating an early interest in science. Consequently, many Kennedy Center faculty members provide research experiences for undergraduates and high school students. Investigators and their trainees also take part in community educational events like Vanderbilt's Brainstorm and Brain Bee.

Still another essential part of our commitment to education and training is to transfer research into practice. For example, in the Britt Henderson Training Series for Educators, over the course of an academic year, Vanderbilt Kennedy Center researchers teach school teams of general and special educators how to apply innovative research-based instructional methods and behavior management strategies to improve student learning in their own classrooms, as well as to gather data to determine whether strategies are effective and present that data to colleagues. This training model is extending to Metropolitan Nashville Public Schools through the efforts of our leadership in the Vanderbilt Kennedy Reading Clinic.

It is a unique and exciting time to be a student in the field of disability research and treatment. Today's students have the advantage of intellectual "free agency," the ability to embrace a myriad of scientific points of view and, ultimately, to create something uniquely their own.

Vanderbilt Kennedy Center investigators are committed to training a new generation of scientists who will be fluent in multiple disciplines and who will be the leaders of tomorrow in solving the mysteries of typical and atypical development. ●

## Brain Research and Blindness Rehabilitation from page one

psychology; Anne Corn, Ed.D., professor of special education and ophthalmology and visual sciences; Ford Ebner, Ph.D., professor of psychology and cell and developmental biology; Peter Melzer, Ph.D., research assistant professor of psychology; and Robert Wall, Ph.D., research assistant professor of hearing and speech sciences. Rieser, Ashmead, Corn, Ebner, and Wall are also Vanderbilt Kennedy Center investigators.

"There's been a wonderful convergence between our understanding of spatial sense and what we need to understand at a basic level," commented Michael Oberdorfer, a program manager at the National Eye Institute (NEI) that provided major support for the meeting. This convergence involves insights from visual neuroscience, cognitive studies, and rehabilitation research, he continued. "Bringing together these fields is where we need to be."

Much of the basic research presented had to do with the brain's ability to reprogram itself in response to injury and other major changes in



Michael May, Sendoro Group, and Michael Oberdorfer, National Eye Institute

processing auditory and tactile input.

In addition, Alvaro Pascual-Leone, director of the Laboratory of Magnetic Brain Stimulation at the Harvard Medical Center, provided new evidence that the brain's visual centers are not limited to processing visual information, but process a certain amount of auditory and touch information as well.

Recent advances in brain research have heightened the expectations of rehabilitation workers that all this new information should help them do a better job treating and training people with impaired vision. However, few of the basic studies have provided clinicians with the answers they seek.

As research moves from the laboratory to the clinic and is coded into various regulations, the impact on human lives and expenditure of public funds can become enormous.

The public demand for instantaneous answers can be a real problem, said one participant, because it puts researchers under pressure and may lead some of them to over generalize from their research.

Wendy Sapp of Florida State University pointed out another reason for caution: "The fact that the brain changes in response to what we are doing means that we want those changes to be adaptive rather than maladaptive."

Yet Michael May, one of the participants with visual impairments, argued that "A potential solution is better than no solution." He is the founder of Sendoro Group, a company that produces Global Positioning Systems-based navigation means for blind persons.

A necessary first step toward creating an effective link is establishing communication between the basic researchers, clinicians, and rehabilitation experts. There was general agreement among the participants that this workshop was a good first step, and they expressed interest in setting up some kind of electronic network to continue the collaboration in the future. A book based on conference proceedings will be published. ●



Aries Ardit, Lighthouse International

sensory input. Twenty years ago, scientists thought that the circuitry in the adult brain was basically fixed and so could not respond much to injury. Research since then, however, has found that the brain is much more dynamic than experts had thought. They have found evidence that different groups of neurons are continually competing with each other, with those that are used the most growing and making new connections and those that are used less shrinking and losing connections. One implication is that the brain has a remarkable ability to respond to major changes in sensory input. Following loss of vision, for example, a number of studies have now shown that large areas of the visual cortex can be converted from processing visual input to

# Leading the Vanguard of Discovery

**ANN KAISER, PH.D.**

Professor of Special Education and Psychology & Human Development  
Vanderbilt Kennedy Center  
Deputy Director of Research Program on Families

**Joined Vanderbilt Kennedy Center 1982**

**Research Interests**

Early language acquisition and intervention, early childhood special education, parenting, siblings and family issues, and prevention of problem behavior in young children at risk

**Principal Investigator for**

- Preventing Problems in Children's Social Behavior, National Institute of Mental Health
- Doctoral Leadership Training in Early Childhood Special Education, U. S. Department of Education
- Building Social Communication Skills During Peer Interactions, Administration for Children and Families
- Sibling Assessment, Support and Intervention (co-investigator), U. S. Department of Education

**Clinical Interests**

Training for parents of young children with language delays and problem behavior

**National Service**

- Member, Child and Adolescent Prevention Research Panel, National Institute of Mental Health
- Member, National Advisory Panel on Head Start National Reporting System
- Member, Standing Review Panel, Institute for Educational Sciences
- Board of Editors, *American Journal on Mental Retardation*, *Journal of Early Intervention*, *Topics in Early Childhood Special Education*, and *Journal of the Association for Persons with Severe Handicaps*

**Honors**

- Educator of the Year, National Association of Retarded Citizens, 1989
- Harvie Branscomb Distinguished Professor, Vanderbilt University, 2001

**Publications**

- *Teaching parents new skills to support their young children's development*, with Hancock, T. B. (*Infants and Young Children*, Summer 2003).
- *The effects of trainer-implemented enhanced milieu teaching on the social communication of children who have autism*, with Hancock, T. B. (*Topics in Early Childhood*



DANA JOHNSON

*Special Education*, Spring 2002).

- *Improving the social communication skills of at-risk preschool children in a play context*, with Craig-Unkefer, L. A. (*Topics in Early Childhood Special Education*, Spring 2002).

**Education**

B.S. Kansas State University, Manhattan  
M.A. University of Kansas, Lawrence  
Ph.D. University of Kansas, Lawrence  
Postdoctoral Fellow, NIH, Department of Human Development, University of Kansas and Kansas Neurological Institute

**Attraction to Developmental Disabilities Research**

My interests in language and communication by young children with developmental disabilities began when I was a postdoctoral fellow conducting a study of children with developmental disabilities in a residential treatment center; at the same time, I was taking advanced courses in linguistics and child language. The combination of observing how these children and youth communicated, or did not communicate, and learning about theories of language acquisition prompted me to start a series of studies on early language intervention in natural environments. I am still interested in effective early interventions that can be delivered in natural environments to promote the best possible outcomes for children with disabilities and their families.

**Reasons for Kennedy Center Membership**

I came to Vanderbilt in large part because of the research support and opportunities the Kennedy Center offered. I saw membership as a wonderful way to be involved in developmental disabilities research nationally, to have access to colleagues with similar interests, and to conduct my research in a context where it would be valued and supported. Over the years, the Kennedy Center has provided many practical supports like space for my projects and assistance with producing and managing grants. As director of the Research Program on Families, I am thrilled to have the opportunity to build a new initiative that reflects my interests and an important focus for developmental disabilities research. ●

## Research News

# On the Horizon of Discovery

## New Grants Led by Kennedy Center Investigators

**IMPROVED IMAGING OF BRAIN WHITE MATTER**

Aims to develop and evaluate new tools for noninvasive analysis of white matter fiber bundles in the brain.

Adam Anderson, Ph.D., associate professor of biomedical engineering and radiology and radiological sciences

**Funding:** National Institute for Biomedical Imaging and Bioengineering

**GENETIC ANALYSIS OF OLIGODENDROCYTE SPECIFICATION**

The goal is to use transgenic zebrafish to investigate mechanisms that specify a common population of neural precursor cells for motor neuron and oligodendrocyte fates and to screen for mutations that disrupt oligodendrocyte specification.

Bruce Appel, Ph.D., assistant professor of biological sciences

**Funding:** National Institute of Neurological Disorders and Stroke

**NATIONAL CENTER ON PROGRESS MONITORING**

A new national center to promote progress monitoring of students in elementary schools across the country.

Doug Fuchs, Ph.D., Lynn Fuchs, Ph.D., Nicholas Hobbs Chair in special education and human development and professors of special education, in collaboration with researchers at the American Institute for Research

**Funding:** U. S. Department of Education

**UNDERSTANDING/PREVENTING MATH PROBLEM-SOLVING DISABILITIES**

To understand the variables that underlie math problem-solving disability and to identify effective preventative programs to reduce the incidence of math problem-solving disability.

Lynn Fuchs, Ph.D., Nicholas Hobbs Chair in special education and human development and professor of special education

**Funding:** National Institute of Child Health and Human Development

**DEVELOPMENTAL COGNITIVE APPROACHES TO MATH PROCESSES**

(Parent project: Cognitive, Instructional, and Neuroimaging Factors in Math, Jack Fletcher, PI, U. Texas Houston)

*Continued on page 5*

## New Grants from page four

Uses a developmental cognitive approach to understand core mathematical and cognitive processes related to math disabilities.

Doug Fuchs, Ph.D., Nicholas Hobbs Chair in special education and human development and professor of special education

**Funding:** National Institute of Child Health and Human Development

### REMIEDIATING STUDENTS' MATHEMATICS DISABILITIES

(Parent project: Cognitive, Instructional, and Neuroimaging Factors in Math, Jack Fletcher, PI, U. Texas Houston)

Focuses on math disability as a function of disability subtype: math disability alone vs. math disability with reading disability. Will study the underlying cognitive processes and neural activity, as revealed by functional Magnetic Resonance Imaging, associated with these subtypes of disability. Will seek to remediate the math disability and examine how brain functioning changes with remediation.

Lynn Fuchs, Ph.D., Nicholas Hobbs Chair in special education and human development and professor of special education

**Funding:** National Institute of Child Health and Human Development

### IDENTIFYING AND PROMOTING OUTCOMES FOR STUDENTS WITH DISABILITIES IN MATHEMATICAL PROBLEM-SOLVING

To understand the effects of using a multi-tiered

model to identify students with math problem-solving disability on student outcomes and patterns of disability.

Lynn Fuchs, Ph.D., Doug Fuchs, Ph.D., Nicholas Hobbs Chair in special education and human development and professors of special education

**Funding:** U. S. Department of Education

### COMMUNITY INCLUSION PROJECT (CIP)

Many people with dual diagnoses display challenging behavior that interferes with typical functioning. CIP provides comprehensive health, educational, and behavioral assessments to identify causes of behavioral challenges and provides long-term training and follow-up in home, work, and community settings. A variety of Vanderbilt resources provide expertise.

Craig Kennedy, Ph.D., associate professor of special education and pediatrics

**Funding:** Tennessee Council on Developmental Disabilities, Tennessee Department of Mental Health and Developmental Disabilities, Tennessee Division of Mental Retardation Services

### SLEEP IN CHILDREN WITH AUTISM

Compares sleep patterns in children with autism and typically developing children.

Beth Malow, Ph.D., associate professor of neurology

**Funding:** Vanderbilt Discovery grant and Vanderbilt General Clinical Research Center

### ADAPTION TO LONG CHAIN FATTY ACID OXIDATION DEFICIENCY

Fatty acid oxidation is critical for typical development, particularly organ systems that are

highly oxidative, such as the liver and brain.

This research program has wide-reaching implications for understanding complex metabolic disorders that involve defects in multiple organ systems, including the brain.

Arnold Strauss, Ph.D., James C. Overall professor of pediatrics and chair of the Department, and professor of molecular physiology and biophysics

**Funding:** National Heart, Lung, and Blood Institute

### ERP AND BEHAVIOR PREDICTORS OF LANGUAGE INTERVENTION

Addresses whether speech processing (as measured by event related potentials and behavioral tests) predicts children's differential response to one of two language interventions on the grammatical development of children with specific language impairment.

Paul Yoder, Ph.D., professor of special education

**Funding:** National Institute on Deafness and Communication Disorders

### EEG POWER AND GROWTH IN JOINT ATTENTION IN CHILDREN WITH AUTISM SPECTRUM DISORDERS AND THEIR SIBLINGS

Examines the relationship between the natural electrical rhythms of children's brains as measured by an electroencephalogram (EEG) and their interest in and willingness to initiate social interactions.

Paul Yoder, Ph.D., professor of special education

**Funding:** Vanderbilt Kennedy Center Nicholas Hobbs Society Discovery grant ●

## Accolades



Doug Fuchs, Ph.D., and Lynn Fuchs, Ph.D.

Among all articles cited in *Exceptional Children*, *The Journal of Special Education*, and *Remedial and Special Education* from 1990 to 1996 inclusive, a 1994 article by **Doug Fuchs**, Ph.D., and **Lynn Fuchs**, Ph.D., published in *Exceptional Children* ("The Inclusive Schools Movement and the Radicalization of Special Education Reform"), was **cited most often**, according to a University of Florida scholar writing in a recent issue of *Remedial and Special Education*. The Fuchs's article was also among the top 10 most frequently cited articles in the three journals from 1960-1996 and was described as an emerging classic in

the special education literature. Doug Fuchs and Lynn Fuchs hold the Nicholas Hobbs Chair in special education and human development, and are professors of special education and Kennedy Center investigators.

**Steven Gabbe**, M.D., dean of the Vanderbilt School of Medicine and Kennedy Center member, was elected **president-elect of the Society for Gynecological Investigators**, a premier scientific



Steven Gabbe, M.D.

organization in obstetrics and gynecology with national and international representation. He will serve as SGI's president in 2005.

**Isabel Gauthier**, Ph.D., assistant professor of psychology and Kennedy

Center investigator, received the 2003 American Psychological Association **Distinguished Scientific Award for Early Career Contribution to Psychology** in the area of behavioral/cognitive neuroscience.

**John Gore**, Ph.D., Chancellor's University professor of biomedical engineering and radiology,



John Gore, Ph.D.

director of the Institute of Imaging Science, and Kennedy Center investigator, was awarded the Gold Medal of the International Society of Magnetic Resonance Imaging in Medicine, the highest honor from the leading organization in the field.

**Jonathan Haines**, Ph.D., T. H. Morgan professor of human genetics, professor of molecular physiology and biophysics and a Kennedy Center investigator, is a member of a team led by Duke University Medical Center researchers that identified a gene that influences when, but not if, people develop Alzheimer's and Parkinson's diseases. It is the first time a single gene has linked the two nerve-related disorders.

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# Susan Gray School for All Children

## Vanderbilt Kennedy Center • Peabody College

### Training the Next Generation



Peabody master's degree class in early childhood special education meets in Susan Gray School.

Since the 1970s, the Susan Gray School for Children has provided leadership in early childhood education and special education through the involvement of innovative Peabody instructors and Kennedy Center researchers. A central reason for the School's success is its mission to create a learning environment that supports teacher and researcher training while enhancing developmental outcomes for all young children.

Ruth Wolery, Ph.D., Susan Gray School director, believes that close ties between the School and Peabody's Department of Special Education is crucial to the School's effectiveness in its training mission. "The Department of Special Education has been ranked first nationally for the second year in a row. The people we are training are the next generation of educators for young children with disabilities and leaders in the field."

#### Early Childhood Special Education Master's Program

Four lead teachers in the Susan Gray School are enrolled in Peabody master's program in early childhood special education. Involved with the day-to-day aspect of teaching and caring for the children at the School, these teachers are able to apply in their classrooms up-to-date knowledge in the master's program about new curricula and child development. Teachers share this knowledge by mentoring co-teachers and providing guidance

while constructing new lesson plans.

"We have had a lot of training grants here, but never one that met every week in the School," said Ann Kaiser, Ph.D., professor of special education and psychology and Vanderbilt Kennedy Center deputy director of family research. "But what it really signifies is bringing our master's training grant back in contact with students and families, thinking about how a thesis could be about practice, and how best practice could be generated by working one-on-one with kids and families and classrooms and training teachers—and thinking about problems and service delivery as both science and practice and something really important to do."

Yolanda Mara, master lead teacher, believes her hands-on experience will better prepare her for future classroom situations. "Through my special education classes and working here at the School, there has been a strong emphasis on research," said Mara. "Now I wouldn't be intimidated if I had a child with a rare disorder. I know that I can go to the library, find some research, and do what is best for the child."

Graduate students may come from outside the Vanderbilt campus to complete course work in the Susan Gray School. Michelle Bryant, a graduate student from Tennessee State University and Circus Star classroom lead teacher, finds working at the School important in more ways than fulfilling academic credit. "One of the most rewarding

aspects personally is having the opportunity to work with children and families of different nationalities, backgrounds, or special needs," said Bryant. "I feel like I am prepared to handle any type of situation that might arise because of my training here at the Susan Gray School."

#### Community Outreach

Sharing the practices of the Susan Gray School takes place not just on campus but also in the community. Several teachers provide training through the Outreach Program, working with care providers at a child's home or child care center. Each Outreach teacher has at least a bachelor's degree, and most are pursuing graduate degrees.

Outreach teachers spend one hour once or twice a week with a parent or care provider of a child between birth and age three with a developmental delay or disability. The Outreach teacher leads a discussion of various options and goals for early childhood education that can take place in the home or child care centers, while training the care giver to implement activities. "One of the things that Outreach teachers do when they are in community programs is share expertise so those teachers are better equipped to provide high-quality services for young children with disabilities in an inclusive environment," said Wolery.

#### Practica

To acquire a general knowledge of development and developmental disabilities, undergraduate and graduate students in the fields of special education, early childhood education, teaching and learning, nursing, psychiatry, speech, physical, and occupational therapy, and other related areas are offered academic credit through various practica programs. Requirements for classes in a variety of disciplines include time spent throughout the semester working with the children at the Susan Gray School or in other early education programs.

"If they are in a class learning about general special needs, they typically spend between 20 and 25 hours a semester here just learning about being around children with special needs," said Michelle Wyatt, M.Ed., Susan Gray School assistant director. While some students are observers, other students in practica are given more responsibilities in the classroom and serve as "another set of hands" for the lead teacher. Students having contact with children are closely supervised.

*Continued on page 7*

*The Susan Gray School provides inclusive education for young children with and without disabilities and support for their families. Its fourfold mission is providing high-quality service, supporting research, contributing to the training of future teachers and researchers, and demonstrating recommended practices as a national model. It is a program of the Vanderbilt Kennedy Center and Peabody College.*



Emma Fricke, student teacher

**General Observation**

Susan Gray School classrooms offer a model site for observing techniques of developmentally appropriate practices for toddlers and preschoolers as well as how to use recommended practices in toddler and preschool classrooms that include

children with and without disabilities. For freshman and sophomore undergraduates, some teachers require observation of children to help open the minds of students to what child development entails first-hand.

Students from the cognitive development class led by Georgene Troseth, Ph.D., use the Susan Gray School as an observation center for developing projects with topics ranging from composition of play groups to gender differences. “The students will learn something about the forethought that goes into designing and implementing a research project, and hopefully will learn about the behavior of young children as well,” said Troseth, assistant professor of psychology and human development and Kennedy Center member.

Bethany Rittle-Johnson, Ph.D., has her students observe two different age groups around a central topic like motor or language development. “Students write a paper linking their observations to ideas we are learning in class,” said Rittle-Johnson, assistant professor of psychology and human development and Kennedy Center member. From observation booths, students watch the children interact with the teachers to help relate the topics they are learning about in class to the implementation of recommended educational practices.

“Every day now in the School you can see our wonderful students collecting data and running studies and talking to each other about kids and trying to problem solve about how you train teachers in the middle of what is a really hard job,” Kaiser said. ●



Miranda Dickens, intern in early childhood education, Appalachian State University, Boone, North Carolina

**SGS News**

**PARENT COMMITTEE AT WORK**

The School’s Parent Committee has arranged for two monthly extracurricular enrichment programs—Joel Reese, “The Singing Cowboy,” and Music in Motion. Both provide excellent opportunities for children with and without disabilities to experience music and movement activities. A monthly bake sale (first Thursday) helps support these programs. The Committee also is producing a monthly newsletter to keep parents informed.

**STAFF LEADERSHIP CHANGES**

Michelle Wyatt, M.Ed., has been appointed assistant director and is working with director Ruth Wolery, Ph.D., in providing oversight of services. Master lead teachers are providing guidance and support to teachers to ensure educational quality. They are Bri Matern, for Toddlers and Twos program, Yolanda Mara for Preschool program, and Annie Adler for Outreach; all have or are working on master’s degrees in Peabody College’s program in early childhood special education.

**TEACHING THROUGH ART**

Susan Gray School children completed another year of the Ready, Set, Van Gogh program. Coordinated by Susan Eaton, Ph.D., funded by the Louis Draughton Foundation, the six-week program had students taking part in visual arts and musical drama as well as a field trip to the Frist Center for the Visual Arts.

The project began with teachers reading storybooks about Van Gogh. With help from Frist Center art educators, children created art as well as music and choreography for a skit inspired by Van Gogh’s art. This musical drama was videotaped and will be used for teacher training in arts education for preschool children with and without disabilities.

Arts education nurtures interest in nonverbal communication while developing thinking and social skills. Also, those involved in training and implementing the project are able to see the quality programming that can be done with this adapted arts curriculum.

The Ready, Set, Van Gogh project was initiated in 2002 as a collaboration among Dr. Eaton, local artist Deborah Yoder, and the staff of the Susan Gray School, based on earlier work by Deborah Yoder. ●

# Art Through the Eyes of Autism



*Shapes and Lines*

*Inibong Udofia*

**A**rt can be life enhancing, powerful, and an amazing creative experience for both the artist and the art-goers.

“Art Through the Eyes of Autism II” is an exhibit by Tennessee artists with autism spectrum disorders organized by the Autism Society of

Middle Tennessee (ASMT) in collaboration with the Vanderbilt Kennedy Center. The exhibit began April 12 and continues through June 30 on display at the Vanderbilt Kennedy Center.

“Adapting Arts for Persons with Special Needs” was the topic of a panel discussion held at the Kennedy Center on April 29. Leisa Hammett of ASMT was moderator. Panelists were Renee Somers, an art therapist and special education teacher for the

Metropolitan Nashville Public Schools; Lon Nuell, professor of art and art education director for Middle Tennessee State University; and Pat Sanders, mother of Robert Sanders, a writer and photographer with Asperger’s syndrome. Artists were honored at a reception following the panel.

Professor Nuell explained, “Visual art is one of the most natural communication devices for young children and for children with disabilities. It is a way of expressing, thinking, and responding no matter what condition the brain is in.”

The Autism Society of Middle Tennessee promotes lifelong access and opportunity for all individuals within the autism spectrum and their families, to be fully included, participating members of their communities through advocacy, public awareness, education and research related to autism.

The exhibit and panel, the second such collaboration between ASMT and the Vanderbilt Kennedy Center, helped to commemorate April as Autism Awareness Month.

“Art Through the Eyes of Autism II” is one of a series of exhibits by or about people with disabilities displayed at the Vanderbilt Kennedy Center and in the community. The Center invites organizations and businesses who are interested in displaying an exhibit organized by the Center to contact us. We also invite suggestions for future exhibits. Contact [elise.mcmillan@vanderbilt.edu](mailto:elise.mcmillan@vanderbilt.edu), 615-343-2540. ●

## Outreach News

### We’re Growing Family Outreach Center Welcomes New Staff



*Teresa Turnbo*

**F**amilies now have additional experienced resources for support with the addition of a program coordinator and social worker to the Vanderbilt Kennedy Family Outreach Center. Founded in September 2003 with support from the **Lili Claire Foundation**,

the Center provides persons with disabilities and their families with a single point of entry into the many research-based services and supports of the Vanderbilt Kennedy Center, as well as the wealth of resources at Vanderbilt University and in the community.

**Teresa Turnbo** joined the Family Outreach Center in January 2004 as program coordinator, after nearly three years of working with Kennedy Center investigator Wendy Stone at Vanderbilt’s TRIAD program (Treatment and Research Institute on Autism Spectrum Disorders).

The first person whom families meet when they walk into the Family Outreach Center is Turnbo,

and she considers herself the “official people greeter.” As a parent of a child with disabilities, she has first-hand knowledge of the importance of letting families know what is available to them and where to find it. She uses this knowledge as part of her job with the Family Outreach Center.

Turnbo goes into the community and tells people about the numerous opportunities and research programs that are being done at the Vanderbilt Kennedy Center and the Family Outreach Center and answers questions that families might have. Turnbo claims that this is the best part of her job. “It’s not so much that I am consumed with my child’s disability, it is that I have been through the different stages and the different fears. I know what these families are experiencing, and I feel I have something to give back.”

**Carol Rabideau**, a social worker with many years

of experience in the Nashville area, will lead Center efforts in reaching out to family with members with disabilities. She provides social work services and support to families who have a member with a disability or developmental or behavioral concerns. She joined the Vanderbilt Kennedy Center in April 2004.

Rabideau has offices in both the Vanderbilt



*Carol Rabideau*

Kennedy Family Outreach Center and in the Junior League Family Resource Center of the new Monroe Carell, Jr. Children’s Hospital at Vanderbilt. “We want to become more visible to families who can benefit from our resources, and our presence in the Children’s Hospital allows us to do so,” explains Rabideau. “I have had so much respect for the

Kennedy Center for so many years. I am so happy to be a part of the Center—it is a very exciting place for research and for service to families.”

**Contact**

Teresa Turnbo (615) 936-5118

Carol Rabideau (615) 936-5122 ●

## Leadership Council News

**R**eading research and the services of the Vanderbilt Kennedy Reading Clinic were the focus of the quarterly Leadership Council luncheon on March 24. Doug Fuchs, Ph.D., director of the Vanderbilt Kennedy Reading Clinic, and Caresa Young, Clinic coordinator, spoke to the group about the Clinic and why early reading help is so important for students and our community. Below are some excerpts from their presentation.

### READING—FROM RESEARCH TO PRACTICE

#### The Problem

- 1 in 5 children has difficulty learning to read
- 5-7% of the population has a reading disability
- 70-80% of students with specific learning disabilities in special education have deficits in reading
- 75% of poor readers in 3rd grade remain poor readers in 9th grade
- effective instruction in K-1 leads to significantly fewer problems in 3rd grade
- 80-90% of school-age children with poor reading skills have poor phonological processing (ability to distinguish sounds of letters and letter combinations)

#### Best Practices in Teaching Reading

- A National Reading Panel of experts was convened by Congress in 1997 to determine best ways to teach children to read; Doug Fuchs, Ph.D., and Lynn Fuchs, Ph.D., co-directors of the Vanderbilt Kennedy Reading Clinic, were Panel members.
- Findings: five reading components are essential for reading success:
  - phonemic awareness
  - phonics/decoding/spelling
  - fluency
  - vocabulary
  - comprehension

#### Vanderbilt Kennedy Reading Clinic Model

- provides intensive, individualized, 1-to-1 tutoring
- uses research-based methods to formulate initial remediation plan
- each student's lesson plan is built around five building blocks of reading (see above)
- provides continuous evaluation using Curriculum-Based Measurement to ensure success; CBM is a research-validated method for monitoring progress

#### The Reading Clinic's Future

- expand into community-based sites
- make training in reading development and research-based instruction available to teachers in public school systems

Contact Vanderbilt Kennedy Reading Clinic  
caresa.l.young@vanderbilt.edu  
615-936-5123 ●



The Honorable Andrew Shookoff speaking with Vanderbilt Kennedy Reading Clinic director Doug Fuchs.

### Accolades *from page five*

**Pat Levitt**, Ph.D., director of the Vanderbilt Kennedy Center and professor of pharmacology, Fellow of the **American Association for the Advancement of Science**, was elected Member-at-Large to the Association's Section Committee on Neuroscience through 2008.

Two Vanderbilt Kennedy Center investigators received **2003 Mentor-Based Fellowships** awarded by the **National Alliance for Autism Research (NAAR)**. **Wendy Stone**, Ph.D., professor of pediatrics, received a NAAR Postdoctoral Fellowship for **Lynnette Henderson**, Ph.D., to



Wendy Stone, Ph.D.

develop a downward age extension of the Stone's Screening Tool for Autism in Two-Year-Olds (STAT). Stone was among seven recipients selected internationally. **James Sutcliffe**, Ph.D., assistant professor of molecular physiology & biophysics, received a NAAR Predoctoral Fellowship for **Jacob McCauley** to conduct a genetic analysis of serotonergic and GABA-ergic genes in autism; six predoctoral fellowships were awarded internationally.

**Erik Emeric** and **Michael Remple**, graduate students enrolled through the integrative and cognitive Ph.D. program, are the 2003 recipients of the **Fine Science Tools Travel Award**

**Scholarship**. Emeric, who works in the laboratory of **Jeffrey Schall**, Ph.D., Ingram professor of neuroscience, professor of psychology, and Kennedy Center investigator, will report new findings on the organization of the cerebral cortex. Remple, who works in the laboratory of **Jon Kaas**, Ph.D., Centennial professor of psychology, professor of cell and developmental biology, and Kennedy Center investigator, will report new findings on the organization of the cerebral cortex.

## Spotlight

# Committed to Outreach

### LUCILE HOUSEWORTH

“I had driven by the Kennedy Center a thousand times,” said Lucile Houseworth, Vanderbilt Kennedy Center Leadership Council member, “and never knew what it was until my daughter Kelsey attended the Susan Gray School in 1995.”

Then two-year-old Kelsey was part of an exchange between the Vanderbilt Child Care Center and the Susan Gray School that provided an inclusive early education experience for children with and without disabilities. “That was my first personal experience with the School and Kennedy Center, and it was very positive,” Houseworth said.

Having more people in the community know about the Center’s research and programs is the goal of the Leadership Council’s new Outreach Committee, which Houseworth and Dr. Karen Putnam are co-chairing.

Barbara Gregg Phillips, chair of the Leadership Council, invited Houseworth to join the Council. It was an easy decision because of all the ties that came together. Houseworth knew and respected Gregg,



Lucile Houseworth

and she discovered she knew other Council members like Putnam, their family pediatrician. Houseworth and husband Mark Magnuson have been affiliated with Vanderbilt for almost two decades. He is assistant vice chancellor for research, professor of molecular physiology and biophysics, and professor of medicine. Their

daughter Kelsey was born at Vanderbilt Children’s Hospital. Like other SunTrust executives, she has volunteered her time and talents in numerous community activities, some of those at Vanderbilt.

“In the meantime, we discovered that our daughter, who’s now 11 and attends University School of Nashville, has certain language-based learning differences. So I became even more personally interested in the research going on and in how the Kennedy Center can be a resource to families with those kinds of challenges and many others.”

When volunteering, Houseworth said, “I always try to choose things that are close to my heart. I was on the Council of the Girl Scouts of Cumberland Valley for six years, and I did that

because I had a daughter and I think that the Girl Scouts is a great organization. And I feel the same passion for the Kennedy Center.”

Houseworth likes that she’s been asked to truly contribute, not just attend meetings. “Being really involved is the kind of role I like to have. I was interested in outreach because much of my career at SunTrust has been spent in marketing. When I learned that Karen Putnam was the chair of the Outreach Committee, I felt that we would be a great match. She’s our personal pediatrician, and I have been a fan of hers since the day Kelsey was born. She brings the professional experience of a physician and the personal perspective of parenting a child with a disability. Combined with my communications and marketing experience, we make a great team.”

The Outreach Committee is focusing on ways to generate greater community knowledge of and interest in the Kennedy Center.

Understanding the importance of research also motivates Houseworth. “Because my husband is a research scientist, I’ve lived with the research enterprise on the home front for almost 20 years. Research will help us to really understand important issues in child development. To me it’s a matter of not just the present but the future. There’s research going on that will help so many people and their families, now and in the years ahead.” ●

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### Vanderbilt Kennedy Center Honor and Memorial Gifts

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### In honor of Tabitha Tuders Establishing Tabitha Tuders Vanderbilt Kennedy Reading Clinic Scholarships

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For information about joining the Nicholas Hobbs Donor Society or making Honor or Memorial gifts, contact the Development Office at 615-322-8235.

Every effort has been made to ensure the accuracy of this report. If an error has been made, we offer our sincerest apology and ask that you bring it to our attention by contacting the Development Office. ●

## “Giving to the Future” The Vanderbilt Endowment and the Vanderbilt Kennedy Center



Jinguan Wu, 17, a student at Oak Ridge High School, is connected to a sensor set in the Vanderbilt Kennedy Center EEG laboratory by research coordinator Susan Williams. Wu was this year's winner of the Tennessee Brain Bee, a competition like a spelling bee that tests knowledge of brain facts. The purchase of the original equipment for the Center's EEG laboratory was made possible by a private gift. Pilot studies using this technology led to federally funded research projects. Gifts that support innovative pilot studies and research infrastructure are vital to the future of this Center's cutting-edge research on developmental disabilities.

One way to make a lasting contribution to the Vanderbilt Kennedy Center for Research on Human Development is by making a gift to endowment. The Vanderbilt endowment is a permanent fund made up of gifts to the University that are pooled and invested in a highly diversified portfolio. Only earnings on the investment are spent, while the original gifts are preserved as principal in perpetuity. Gifts to the endowment most often are special gifts in significant sums, made to establish or support specific programs, scholarships, or faculty chairs or professorships.

When giving to endowment, most donors designate a specific use for the investment income their gifts generate. Approximately 80 percent of Vanderbilt's endowment income is designated by donors to support specific purposes.

The Vanderbilt Kennedy Center is embarking upon a broadly based effort to advance research, training, outreach, and intervention activities to help children and adults with developmental disorders and their families. Director Pat Levitt, Ph.D., and his colleagues have developed an aggressive strategic plan to bring together the wide array of scientists, clinicians, educators, families, and community leaders whose efforts will be critical to realizing our vision for the Vanderbilt Kennedy Center. Significant philanthropic support is required to achieve this vision.

Endowments for *faculty professorships* will allow the Vanderbilt Kennedy Center and academic departments to recruit and retain “the best and the

brightest.” The Center's director and departmental chairs and search committees are recruiting faculty in areas that will allow the Center and the University to make even greater scientific contributions and provide opportunities to increase our national and international prominence in the field of human development research. *Endowed chairs* for top performing current faculty help to ensure their longevity at our institution. Endowment for *fellowships and scholarships* enables us to train the most gifted members of the next generation of neuroscientists and specialists in the field of developmental disabilities.

The pursuit of scientific knowledge with creativity and purpose is a core value of the Vanderbilt Kennedy Center. Endowments will enhance the ability of the *Test and Technology Development Center* to promote the activities of Center faculty who are developing new basic and clinical research and assessment tools as part of their ongoing efforts. These new tools may be as diverse as tests for assessing certain cognitive skills in children to computer software for automated observation of behaviors. Endowments also support innovative pilot studies and research infrastructure for the Center's major research programs in *Communication and Learning*, *Developmental Neurobiology and Plasticity*, *Mood and Emotion*, and *Family Research*. These investments in cutting-edge research provide opportunities for developing nationally competitive and funded research programs.

Translating knowledge into practice is a core value of the Vanderbilt Kennedy Center. Endowments are being sought for the *Vanderbilt Kennedy Reading Clinic*, to make state-of-the-art reading interventions available to young struggling readers without regard to economic barriers; for the *Vanderbilt Kennedy Behavior Analysis Clinic*, to ensure that challenging behaviors of children and adults are treated effectively so that they can be part of their families, schools, and communities. By endowing *Education and Training Programs*, you can help equip professionals with the very latest tools and information. This is a powerful way of translating state of the art to state of the practice in schools and clinics throughout Tennessee and beyond.

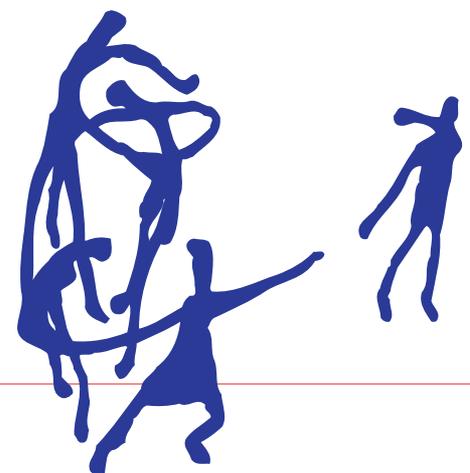
Endowment gifts frequently take the form of cash or securities. In some cases gifts to endowment are planned gifts, which require consideration of the most appropriate gift vehicle (e.g., trusts, gift annuities, bequests), potential tax benefits, and long-term estate plans. Vanderbilt's planned giving professionals are happy to work with donors to determine a charitable giving strategy that meets their financial goals and circumstances.

For additional information on giving opportunities, contact the Vanderbilt Kennedy Center Development Office, 615-322-8235. ●

### Hold the Date

## Vanderbilt Kennedy Center Leadership Dinner October 21, 2004

Contact Elise McMillan, 615-343-2540  
elise.mcmillan@vanderbilt.edu

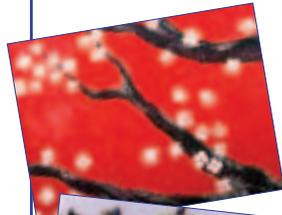


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## Tribute Cards and Note Cards



**T**ribute cards featuring original work by artists with disabilities are an excellent way to make a gift to the Vanderbilt Kennedy Center in memory or honor of an individual. The Development Office will mail a card to honor/memorial recipient or donors can complete the card. Tribute cards are available for a suggested \$25 contribution.

Blank gift cards featuring this year's selection of art by persons with disabilities are available in packages of eight for a suggested \$10 contribution to the Center.

Contact 615-322-8235 or [kc@vanderbilt.edu](mailto:kc@vanderbilt.edu) to request tribute or art note cards. ●



*Discovery is a quarterly publication of the Vanderbilt Kennedy Center for Research on Human Development designed to educate our friends and the community, from Nashville to the nation.*

*The Vanderbilt Kennedy Center is committed to improving the quality of life of persons with disorders of thinking, learning, perception, communication, mood and emotion caused by disruption of typical development. The Center is a university-wide research, training, diagnosis, and treatment institute; and a National Institute of Child Health and Human Development designated National Mental Retardation and Developmental Disabilities Research Center.*

ON THE WEB: [kc.vanderbilt.edu](http://kc.vanderbilt.edu)  
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## July-December 2004 Calendar of Events

Most Fall 2004 events are to be scheduled and will be announced in the Fall 2004 issue of *Discovery*. Unless otherwise noted, events are free and open to the public. Events are subject to change. Please check the calendar on our web site [kc.vanderbilt.edu](http://kc.vanderbilt.edu) or call (615) 322-8240. For disability-related training and other events statewide and nationally see [www.disabilitytrainingtn.org](http://www.disabilitytrainingtn.org).

### Camp

**JULY 5-30**

#### Explorers Unlimited Camp

Co-sponsored with Down Syndrome Association of Middle Tennessee  
Arts education programming by the Frist Center for The Visual Arts  
For 12- to 22-year-olds with Down syndrome. Provides academic enrichment program in reading, math, and social awareness.  
University School of Nashville  
Information Sheila Moore  
[dasmt@bellsouth.net](mailto:dasmt@bellsouth.net) 615-386-9002

### Arts Exhibits

**AUGUST 15-SEPTEMBER 30**

#### Explorers Unlimited

Co-sponsored by Down Syndrome Association of Middle Tennessee and Frist Center for Visual Arts  
Monday-Friday 7:30 a.m.-5:30 p.m.  
Lobby of Vanderbilt Kennedy Center/MRL Building

**OCTOBER 11-DECEMBER 31**

#### Arts and Disabilities Exhibits Creative Expressions X

Co-sponsored by Nashville Mayor's Advisory Committee for People with Disabilities  
Monday-Friday 7:30 a.m.-5:30 p.m.  
Lobby of Vanderbilt Kennedy Center/MRL Building

### Outreach

#### Vanderbilt Kennedy Reading Clinic

Fall Session begins early September, extends 12 weeks  
Registration accepted now, first-come, first-serve, space limited  
Some scholarship assistance available  
Please contact [caresa.l.young@vanderbilt.edu](mailto:caresa.l.young@vanderbilt.edu)  
615-936-5123



#### Sibshop

For siblings of children with disabilities  
Two groups: 7-12 years, adolescents  
Games, friends, discussions  
Meets monthly, Saturday morning  
Please contact [teresa.turnbo@vanderbilt.edu](mailto:teresa.turnbo@vanderbilt.edu)  
615-936-5118

#### Ninth Annual Britt Henderson Training Series for Educators

**Designing a Positive Behavior Support Plan to Better Serve All Students**  
A workshop series for area public and private elementary schools  
Please contact [teresa.turnbo@vanderbilt.edu](mailto:teresa.turnbo@vanderbilt.edu)  
615-936-5118

### Conferences

**June 30**

#### Conference on Dual Diagnosis

Presented by Community Inclusion Project, Vanderbilt Kennedy Behavior Analysis Clinic  
For psychiatrists, agency providers, behavior analysts, and primary care physicians  
Wednesday 8 a.m.-1 p.m. Room 241  
Vanderbilt Kennedy Center/MRL Building  
Contact Melissa Rogers, 615-322-8185  
[bac@vanderbilt.edu](mailto:bac@vanderbilt.edu)

### Research

**TYPICALLY FIRST WEDNESDAY OF MONTH  
SEPTEMBER-MAY**

#### Grand Rounds

Presentations by Vanderbilt Kennedy Center researchers  
Co-sponsored by Vanderbilt Center for Child Development  
Wednesday 8 a.m.  
Susan Gray School Conference Room 112  
Kennedy Center/MRL Building

**SEPTEMBER 9**

#### Special Distinguished Lecture Fifty Plus Years of Psychometric Advances in the Assessment of Cognitive Abilities

Richard Woodcock, Ph.D., Vanderbilt Kennedy Center Visiting Scholar  
Thursday 4 p.m.  
Room 241 Kennedy Center/MRL Building

**DECEMBER 2**

#### Lectures on Development and Developmental Disabilities

**Synaptic Formation, Growth, and Plasticity**  
Graeme Davis, Ph.D., Associate Professor of Biochemistry, University of California at San Francisco  
Thursday 4 p.m. Room 241 Vanderbilt Kennedy Center/MRL Building

### Community

**NOVEMBER 5-6**

#### Fired Up for Down Syndrome

Fall Conference of Down Syndrome Association of Middle Tennessee  
**Julie R. Korenberg**, M.D., Ph.D., Brawerman Chair of Molecular Genetics, Cedars-Sinai Medical Center (Keynote Speaker)  
Please contact Down Syndrome Association of Middle Tennessee, 615-386-9002  
[dsamt@bellsouth.net](mailto:dsamt@bellsouth.net)  
Friday-Saturday all-day  
Clear View Baptist Church, Franklin



## Take Part in Research

### AUTISM STUDIES

#### Adult Sleep in Autism

(persons with autism 18+ years)  
Mark Harvey, Ph.D. 615-322-8177

#### Early Social Development in Autism

(children with autism or PDD-NOS 24-42 months and younger siblings of children with autism or PDD-NOS 12-24 months)  
Wendy Stone, Ph.D.  
Lynnette Henderson, Ph.D. 615-936-0265

#### EEG Power and Growth in Joint Attention in Children with ASD and Their Siblings

(children with autism of PDD-NOS 24-60 months and younger siblings of children with autism or PDD-NOS 12-18 months)  
Paul Yoder, Ph.D.  
Tina Patterson, M.Ed. 615-322-8276

#### Genetic Studies in Autism and Related Disorders

(persons with ASD 4-22 years)  
James Sutcliffe, Ph.D.  
Genea Crockett 615-343-5855

#### Imitation in Autism

(children with autism 24 to 47 months, must live locally)  
Wendy Stone, Ph.D.  
Amy Swanson 615-936-0265

#### Sleep in Children with Autism

(children with autism or PDD-NOS 4-10 years)  
Beth Malow, M.D.  
Lynnette Henderson, Ph.D. 615-936-0448

#### Symbol Use in Young Children with Autism

(children with autism 2 to 5 years)  
Georgene Troseth, Ph.D. 615-322-1522

### COMMUNICATION STUDIES

#### Child Language Intervention Program (CLIP)

(children with language delays 18 months-6 years)  
Stephen Camarata, Ph.D. 615-936-5125

#### Childhood Stuttering

(children with stuttering 3-5 years)  
Edward Conture, Ph.D.  
Judy Warren 615-936-5103

#### Emotion Recognition in Children with Profound Hearing Loss

(4-12 years and profound hearing loss)  
Anne Marie Tharpe, Ph.D. 615-936-5109

#### Emotion Regulation, Child Speech Disfluencies

(children with stuttering, 3-5 years)  
Tedra Walden, Ph.D. 615-322-8141

#### Intervention Studies in Children with Minimal to Mild Hearing Loss

(6-12 years, hearing loss)  
Anne Marie Tharpe, Ph.D. 615-936-5109

### TAG Project **NEW**

(children ages 2-5 with specific expressive language delay)  
Paul Yoder, Ph.D.  
Elizabeth Gardner 615-343-1725

#### Talk, Talk, Talk: The Emergence of Language

(typically developing children 12-16 months, 2.5 to 4 years)  
Megan Saylor, Ph.D. 615-343-8721

### DISABILITIES STUDIES

#### Behavior and Development in Persons with Prader-Willi Syndrome

(children and adults with PWS)  
Elisabeth Dykens, Ph.D.  
Elizabeth Roof 615-343-3330

#### Circadian Clock Gene Polymorphisms and Shift Work

(persons with sleep problems, especially early or late onset of sleep, and/or difficulty in adapting to shift work and/or jet lag)  
Douglas McMahon, Ph.D.  
Carl Johnson, Ph.D. 615-322-2384

#### Cognitive Re-Development in Adults with Traumatic Brain Injuries

(adults with severe TBI that occurred at least 2 years ago, no limit on time or age)  
H. Carl Haywood, Ph.D. 615-383-8349

### Down Syndrome Project **NEW**

(children with Down syndrome, ages 4 to 8 years-11 months, difficulty with speech intelligibility)  
Stephen Camarata Ph.D.  
Mary Camarata. M.S. 615-936-5130

#### Environmental and Neurobiological Causes of Aggression and Self-Injury

(persons with developmental disabilities)  
Michael May 615-400-1303

#### Environmental Control of Tardive Dyskinesia

(persons with developmental disabilities and atypical involuntary movements)  
Maria Valdovinos, Ph.D. 615-343-0686

#### Genetic Studies of ADHD

(4-16 years with family history of ADD/ADHD)  
Steve Couch, M.D.  
Jeannie Glenn 615-343-2010

#### Linking Health Care and Functional Behavioral Assessments

(persons with developmental disabilities 5 to 22 years)  
Craig Kennedy, Ph.D. 615-322-8178

#### Musical Interests in Persons with Williams Syndrome

(children and adults with Williams syndrome)  
Elisabeth Dykens, Ph.D.  
Elizabeth Roof 615-343-3330

#### Sleep and Developmental Disabilities

(persons with developmental disabilities 18-50 years)  
Mark Harvey, Ph.D. 615-322-8177

### INFANT AND YOUNG CHILDREN STUDIES

#### Infant Cognition Lab

(typically developing, 3 to 12 months)  
Sue Hespos, Ph.D. 615-343-7973

#### Improving Engagement Project

(preschool teachers)  
Robin McWilliam, Ph.D.  
Amy Casey 615-936-3986

#### Use of Symbols: Words, Pictures, Video Images

(typically developing, 2 to 3.5 years)  
Georgene Troseth, Ph.D. 615-322-1522  
Megan Saylor, Ph.D. 615-322-5567

### MENTAL HEALTH STUDIES

#### Causes and Treatment of Depression

(persons 18 years+ with depression or healthy individuals with no mental health diagnosis)  
Ronald Salomon, M.D. 615-343-9664

#### Development in Children of Parents with and without Depression

(children 7-17 years and their parents)  
Judy Garber, Ph.D. 615-343-8714

#### Mother/Daughter Communication about Breast Cancer Risk

(family history of breast cancer; mothers, any age, daughters ages 11 to 30)  
Bruce Compas, Ph.D.  
Kymberley Bennett, Ph.D. 615-343-4742

#### Prevention of Depression in At-Risk Adolescents

(adolescent offspring, ages 13-17, of parents who have had depression).  
Judy Garber, Ph.D. 615-343-4141 or 615-343-8714

#### Prevention of Recurrence in Depression with Drugs and Cognitive Therapy

(persons 18 yrs and above with depression)  
Steven D. Hollon, Ph.D.  
Margaret Lovett, M.Ed. 343-9667

#### Studies of Perception, Memory, Creativity

(relatives of patients diagnosed with bipolar or schizophrenia disorder, ages 18-55; people with schizophrenia or bipolar disorder, ages 18-55; people with no history of mental illness in themselves or their family, ages 25-55)  
Sohee Park, Ph.D.  
Mikisha Doop 615-322-3435

#### Stress and Coping in Mothers and Daughters

(mothers with daughters ages 10 to 14; women who have experienced depression and women who have not)  
Bruce Compas, Ph.D.  
Kristen Reeslund 615-322-8290

#### Teens Achieving Mastery over Stress **NEW**

(teens ages 13-17)  
Judy Garber, Ph.D. 615-343-4141

### VISION STUDIES

#### Alphabetic Braille and Contracted Braille

(children ages 4-Pre-K/kindergarten with light perception only or no light perception, English as primary language, potential to read Braille)  
Anne Corn, Ed.D. 615-322-2249