Vanderbilt Kennedy Center for Research on Human Development



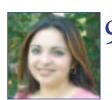
4 Expert on Toxins and Brain Development



6 Family Choices, Early Intervention



8 Best Buddies, Friendships



Reaching to Latino Families

Discovery



Benjamin Dykens-Hodapp

Puzzles and Music— Insights from Prader-Willi Syndrome

magine two representations of a castle, one made of furniture cushions in a living room and another made of a child's building blocks. Each is a construct of a whole created by linking parts. Just as a child builds a castle, researchers Elisabeth Dykens, Ph.D., and Robert Hodapp, Ph.D., construct a conceptual whole of a genetic syndrome from its parts, looking at the links among genetics, biology, and behavior—with the goal of developing better treatments. Like castles, each genetic syndrome has a different profile, with different strengths and weaknesses.

Over 1,000 genetic syndromes have been identified. Hodapp and Dykens have chosen to focus not on this "forest" of syndromes but on some specific "trees"—constructing "behavioral phenotypes" of a small number of syndromes. Dykens defines behavioral phenotype as "the heightened probability or likelihood that

Continued on page 2

Director's Message

Our Research Legacy Continues



Pat Levitt, Ph.D

very five years, the Vanderbilt
Kennedy Center
competes with major
research universities
nationwide for funding from the National
Institute of Child
Health and Human
Development
(NICHD) to be
supported as one of

fourteen national Mental Retardation and Developmental Disabilities Research Centers (MRDDRCs). We are proud to announce that this NICHD "center grant" to the Vanderbilt Kennedy Center has been renewed for 2004-2009.

Continued on page 3

50th Anniversary of Landmark Training Program

The Mental Retardation and Developmental Disabilities Research Training Program celebrated its 50th anniversary with a reunion for graduates, program faculty, and current students on May 21-22.

The program has graduated over 140 Ph.D.s, including 22 over the past 10 years, and has supported 18 post-doctoral fellows. Program graduates have become recognized leaders in disabilities research, education, and clinical and governmental roles at programs across the country.

Reunion events included a keynote address on the field's future by William MacLean, Ph.D., a program graduate and editor of *The American Journal on Mental Retardation*, talks by graduates, and a look back on the historic success of the program and its impact on disabilities research

Founded at Peabody College in 1954 by Lloyd Dunn, Ph.D., and the late Nicholas Hobbs, Ph.D.,



Program Directors—Front row: Craig Kennedy (1998-present), H. Carl Haywood (1968-1970), Penny Brooks (1974-1988), Tedra Walden (1998-present); Back row: William MacLean (1988-1996), Steven Warren (1988-1998); with Kennedy Center Director Pat Levitt

the mental retardation research training program was the first doctoral-level program of its kind in the United States. It was developed in response to the relative lack of scientific interest nationally in mental retardation and the *Continued on page 3*

nationwide.

Puzzles and Music from page one

people with a given syndrome will show certain behavioral or developmental features relative to those without the syndrome." Dykens and Hodapp use Prader-Willi syndrome and Williams syn-

drome as examples of this approach. "It is clear that individuals with genetic syndromes show certain strengths in functioning, as well as the well-known weaknesses that tend to be the focus of research," Dykens said.

Prader-Willi Syndrome

Prader-Willi syndrome (PWS) is a fairly common genetic disorder (1 in 15,000) that results from a genetic deletion on chromosome 15. In addition to intellectual

disabilities, a common behavioral issue is overeating, and complications of obesity are a major cause of death. The cause of this insatiable appetite is not known, but it and other biological features are thought to be related to dysfunction in the brain's hypothalamus.

In one study, Hodapp and Dykens found that youth with PWS had as well-developed an understanding of diet and its consequences as college psychology students. "But there's a disconnect between what they know and how they behave," Dykens said.

To explore this "disconnect," Dykens showed photos of unusual food combinations and contaminated food to a group with PWS, a group with intellectual disabilities of mixed etiology, and a typical control group. For example, participants looked at photos of pizza with chocolate syrup, and a glass of chocolate milk with a dirty comb in it. Relative to the comparison groups, the group with PWS endorsed eating more unusual food

combinations and contaminated food and had a limited understanding of "disgust," such as particles or germs. Based on this research, Dykens proposes to add teaching these concepts as a supplement to standard dietary interventions for persons with PWS. Dykens is collaborating with researchers at other universities to explore possible



Elisabeth Dykens, Ph.D. and Robert Hodapp, Ph.D.

biological causes of the insatiable appetite.

Anecdotal reports from parents and others suggest that children with PWS are exceptionally skilled at jigsaw puzzles. To determine if this is indeed a strength, Dykens administered standardized visual-spatial tasks and a 40-piece cardboard jigsaw puzzle, counting the number of puzzle pieces placed in 3 minutes. The performance of the PWS group far exceeded the performance of an age-matched typical group. A next step will be to investigate these visual-spatial skills and how they connect to larger visual representations and skills.

All of us experience a sense of "flow" or happiness when we are engaged in a task that is challenging, when we concentrate, have a sense of control, with clear goals and immediate feedback. "Persons with PWS seem to be 'in the flow' and happy when they are using their puzzle-making skills," Dykens observed, suggesting how building on strengths in a disorder like PWS can enhance quality of life.

Williams Syndrome

Williams syndrome (WS) is another relatively common genetic disorder (recently estimated as about 1 in 10,000 or 12,000). It results from a genetic deletion on chromosome 7 that includes the gene for elastin, a protein that is essential for connective tissues and heart valves. Insufficient elastin may be responsible for the mild to severe cardiac disease found in persons with WS.

Persons with WS have strengths in vocabulary, auditory short-term memory, facial recognition, reading emotions from faces, and in music. They have weaknesses in visual-spatial skills, motor planning, and spatial orientation.

"At the same time that persons with Williams syndrome are very social and have great empathy, they also have lots of fears," Dykens said. She compared common fears in a group with WS, a group with intellectual disabilities, and an age-matched typical control group. Approximately 90% of persons with WS show a characteristic type of fear that may interfere with their everyday functioning.

A strength in persons with WS is musicality. "We wanted to look at the relationship between music and anxiety and fears," Dykens continued. She found that persons with WS had fewer anxieties and fears when there was an increased frequency, duration, and skill in playing music, when they had siblings who played, and when they acknowledged that "down music" makes one feel sad. They behaved less aggressively with increased frequency of listening to music.

"Now we're looking at efficacy of music therapy as anxiety reducers," Dykens said, "and we plan to use brain imaging methods to look at how persons with Williams syndrome process music and sound."

Until the 1990s, research studies tended to look at intellectual disabilities as a mixed group, paying relatively little attention to the cause.

"Today we're beginning to appreciate that specific genetic disorders affect behavior differently, at many points in development," Hodapp said. "The benefits of studying behavioral phenotypes are that it helps us understand some portion of gene-brain-behavior relationships, informs typical development, guides treatment, and refines science."

Primer

Prader-Willi syndrome is a complex genetic disorder associated with either a paternally derived deletion on chromosome 15, or receiving two chromosome 15s from the mother.

Prevalence

1 of every 12-15,000 births, in both sexes and all races

Common Conditions

- Hyperphagia (marked interests in eating) beginning in preschool years
- Distinctive facial and physical features
- Infantile hypotonia, short stature
- Compulsive behaviors such as skin picking, hoarding, concerns with sameness

Developmental Concerns and Strengths

- Mild to moderate levels of cognitive delay, with relative weaknesses in attention and auditory short-term memory
- Common strengths include long-term memory, reading ability, receptive language, and visual-spatial skills, including jigsaw puzzle abilities
- Cognitive and behavioral profiles may differ across genetic subtypes

Williams syndrome is a congenital disorder characterized by a deletion of several genes on chromosome 7.

Prevalence

1 of every 20,000 births, in both sexes and all races

Common Conditions

- Impulsive and outgoing (excessively social) personality
- Poor visual-spatial skills and motor control, and intellectual disability

- Anxiety
- Other features include characteristic facial features, heart problems, feeding problems, dental and kidney abnormalities, sensitive hearing, and musculoskeletal problems

Developmental Concerns and Strengths

- Cognitive profile involving poor visual-spatial functioning and relative strengths in specific aspects of expressive language
- Mild to moderate delays in overall cognitive development
- Some individuals show marked interests in music

Resource

Dykens, E. M., Hodapp, R. M., & Finucane, B. M. Genetics and mental retardation syndromes: A new look at behavior and interventions. (Baltimore: Paul H. Brookes Publishing, 2000).

www.pwsausa.org www.williams-syndrome.org

Director's Message from page one

The center grants are among the most costeffective ways to provide cutting-edge research technology services to scientists who are doing complex, interdisciplinary research on developmental disabilities. The review panel at NICHD noted that we continue to support outstanding science at the Kennedy Center, with 72 investigators receiving over \$29 million in federal support for more than 90 projects as the beneficiaries of our core grant.

We are excited about having the opportunity to build upon our research legacy. Mental retardation and other developmental disabilities were not on the nation's agenda when President John F. Kennedy assumed office. His first step toward correcting this state of affairs was creating NICHD, in 1962, with the responsibility to investigate typical and atypical development. The Mental Retardation Research Centers emerged out of this new mission.

When President Kennedy signed the Mental Retardation Facilities and Mental Health Centers Construction Act (P.L.88-164), he said, "For the first time, parents and children will have available comprehensive facilities to diagnose and either cure or treat mental retardation. For the first time, there will be research centers capable of putting together teams of experts working in many different fields." Almost 40 years later, we understand that developmental disabilities represent far more than cognitive impairments in our most treasured national resources, our children. Collectively research supported by the network of MRDDRCs has advanced our understanding of the biological origins of developmental disabilities and has helped promote the time-honored approach of applying evidence-based interventions to improve quality of life for individuals with disabilities. The Vanderbilt Kennedy Center has been a key participant in these efforts. In short, our attempt is to achieve those scientific breakthroughs that bring "tomorrow's advances to people today."

In today's climate of big science, with the pressures of using interdisciplinary approaches to solve what may be among the most complex of problems facing our society, the development of relationships and the development of complex intellectual functions, the Kennedy Center is well-positioned at Vanderbilt to facilitate the convergence of the most relevant research approaches. The legacy of fostering such interactions began almost 40 years ago at Peabody College. Today, it might be argued that we are the model for Vanderbilt's concept of a university-wide institute that is meant to bring together individual researchers, located in different academic departments across campus, making the sum far greater than the parts could ever be. Congratulations to all of our Vanderbilt Kennedy Center faculty, staff, and trainees!

Today and into the future, Vanderbilt Kennedy Center scientists and clinicians, in partnership with families, will strive to fulfill President Kennedy's vision of scientific achievement, "to make the remote reaches of the mind accessible."

50th Anniversary from page one

realization that the field held rich, previously untapped research possibilities.

Congratulating Peabody College and the Vanderbilt Kennedy Center, NICHD director Duane Alexander, M.D., wrote, "We are proud that this training program has been so outstanding that it has been supported for 49 of those years by the National Institutes of Health, 40 of them by the NICHD. The superior training provided in this program was one of the attractive features that led to the establishment of one of the first NICHD Mental Retardation Research Centers at that location It is our hope that this grant will continue for many more years to produce trainees to join its illustrious previous alumni as leaders in the field."

Welcoming reunion participants, Kennedy Center director Pat Levitt, Ph.D., characterized 50 continuous years as "a remarkable accomplishment. Our legacy as scientists is defined by the generations of young scientists whom we train. Through training, we are a part of defining disciplines for years to come."

In his keynote address, MacLean reviewed changes in the field across the decades in areas including cognition, communication and language, behavioral phenotypes, animal models of developmental disabilities, behavioral problems, and interventions. Among productive areas of future research he identified exploiting the gene-brain-behavior equation, providing supports for persons with disabilities, translating research to practice, following persons with developmental

disabilities into new community settings such as health care centers, and asking people with developmental disabilities what they experience. A special concern is the field's current emphasis



Program director Tedra Walden (right) presented a plaque of appreciation for 30 years of service to the MR Research Training Program to Linda Dupré,

MR Research Training Program graduates Gershon Berkson ('59), Wolf Wolfensberger ('62), Joseph Spradlin ('59), and Marty Miller ('61)

on behavioral phenotypes of various genetic conditions to the exclusion of potentially preventable conditions related to mild mental retardation. "Risk factors such as poverty, fetal alcohol syndrome, and poor prenatal care play a role in the etiology of mild mental retardation," MacLean pointed out, "and we must not lose sight of this population."

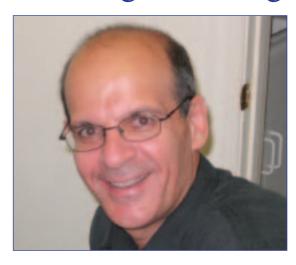
"Ongoing challenges to the field," MacLean said, "are assuring that research is relevant, translating research findings into practice that are useable and accessible, and encouraging talented young researchers to enter the field. We need to know what's effective and what's not and how to better tell the difference."

Program director Tedra Walden, Ph.D, professor of psychology and Kennedy Center investigator, described the current program. In conjunction with the Departments of Psychology and Human Development, Special Education, Hearing and Speech Sciences, and the Vanderbilt Kennedy Center, the research training program continues to work from a developmental model of mental retardation

and other developmental disabilities that emphasizes continuity between typical and atypical behavior in the developing child. This approach accommodates scientists who work from a variety of perspectives and fields. Trainees receive training on issues both in their course work, as part of special seminars, and in their research apprenticeships with program faculty members.

Walden summarized, "The program today stands on the shoulders of giants."

Leading the Vanguard of Discovery



MICHAEL ASCHNER, PH.D.

Professor of Pediatrics and Pharmacology Vanderbilt Kennedy Center Investigator

Joined Vanderbilt Kennedy Center Summer 2004

Research Interests

Transport mechanisms from the periphery into the brain, developmental neurotoxicology, role of metals in neurodegeneration, Gulf War syndrome

Principal Investigator for

- Blood-Brain Barrier Transport of Manganese, National Institute of Environmental Health Sciences
- Mechanisms of Methylmercury Induced Neuronal Toxicity, National Institute of Environmental Health Sciences
- Blood-Brain Barrier Transport of Depleted Uranium, Department of Defense

Clinical Interests

- Xenobiotic-induced disorders of the central nervous system
- Gene-environment interaction in disorders of the central nervous system
- Gulf War syndrome

National Service

- Member, International Society for the Study of Xenobiotics
- Member, American College of Toxicology
- Past President and Member, Executive Committee, International Neurotoxicology Association
- Board of Editors, Neurotoxicology, Toxicological Sciences, inSCIght, Acta Neurobiologiae Experimentalis, and The Scientific World Journal, Toxicology and Neuroscience Sections
- Chair, National Institute of Health, Alcohol and Toxicology 3 Study Section, 2002-2003

Honors

- Fellow, Academy of Toxicological Sciences, 1997
- Certificate of Merit, American Chemical Society, 2002

Selected Publications

- Aschner, M., & Costa, L. G. (Eds.). (2004). *The role of glia in neurotoxicity* (2nd ed.). Boca Raton, FL: CRC Press, Inc.
- Cranmer, J. C., Aschner, M., Bearer, C. F., Cory-Slecta, D. A., Costa L. G., DeRosa. C. T., Goldman, L. R., Kirshner, A., Rice, D. C., Slikker, W., Jr., Sonawane, B., Tilson, H. A., & Weiss, B., (Eds.). (2000). *Children's health and the environment. Neurotoxicology*, Little Rock, AR: Intox Press, Inc.

Education

B.S., 1981, University of Rochester, Rochester, NY M.S., 1983, Anatomy, University of Rochester, Rochester, NY Ph.D., 1985, Neurobiology & Anatomy, University of Rochester, Rochester, NY Postdoctoral Fellow, 1987, Environmental Health

Sciences Center, Division of Toxicology, University

Attraction to Developmental Disabilities Research

of Rochester, Rochester, NY

There is provocative evidence that environmental exposures to heavy metals, pesticides, and fungicides may play a role in the etiology or progression of neurodevelopmental disorders. Recent research has focused on the underlying biological processes critical to disease onset and the relative roles of the environment, the endogenous neurochemical milieu, and genetic factors in disease etiology and susceptibility. Along with my new colleagues at Vanderbilt University Medical Center, and the Vanderbilt Kennedy Center in particular, I hope to pursue new venues on the relative roles of each of these factors in the causation of neurodevelopmental disorders.

Reasons for Kennedy Center Membership

My wife Dr. Judy Aschner and I have relocated from Wake Forest University School of Medicine in Winston-Salem, NC, to join the faculty at Vanderbilt University Medical Center. We were impressed during our initial visits to Nashville with the research community and infrastructure at Vanderbilt and with the dedication of its faculty and staff to its patients and to research aimed at improving the understanding of and developing novel therapies for neurological disabilities. The leadership and multidisciplinary approach fostered by the Vanderbilt Kennedy Center encompassing systems biology, genetics, therapeutics, family support, and follow-up clinics, highlights the unique value of the Kennedy Center as a resource for patients, families, clinicians, and researchers alike. I have been made to feel most welcome at the Kennedy Center, and I am excited about the opportunities to collaborate with leading experts in neurobiology to further our understanding of developmental disorders.

Accolades



Randy Blakely, Ph.D.

Randy Blakely, Ph.D., received a MERIT
Award from the
National Institute of
Mental Health.
Blakely is a Kennedy
Center investigator,
Allan D. Bass professor
of pharmacology, and
director of the Center
for Molecular
Neuroscience. MERIT
awards honor

researchers who have shown superior competence and productivity over their research careers. The award provides up to 10 years of funding support. The NIMH confers only three or four of these prestigious awards annually. Blakely investigates the cholinergic system, a major neurotransmitter system of the brain and peripheral nervous system. The \$3.5 million grant will support Blakely's continued efforts to determine how the choline transporter is regulated, and whether altered choline transporter expression contributes to certain human diseases, e.g., Alzheimer's disease.

Ellen Wright Clayton,

M.D., J.D., Rosalind E. Franklin professor of genetics and health policy and Kennedy Center member, has been appointed to a new **Institute of Medicine Committee**"Genomics and the Public's Health in the 21st Century."



Ellen Wright Clayton, M.D

Edward G. Conture, Ph.D., professor of hearing and speech sciences and Kennedy Center investigator, has been appointed as a member of the **Advisory Council of the National Institute of Deafness and Other Communication Disorders** (2004-2008). He has been named editor of the *Journal of Fluency Disorders* (2004-2006).

Ronald L. Cowan, M.D., Ph.D., assistant professor of psychiatry and Kennedy Center member, was named to the **editorial board of** *Synapse* effective July 1.

Judy Garber, Ph.D., professor of psychology, was appointed American Psychological Association representative to the Center for the Advancement of Children's Mental Health at Columbia University Task Force on Developing Guidelines for Adolescent Depression in Primary Care, June-July, 2004. She has been appointed associate editor of Journal of Abnormal Child Psychology.

Research News

On the Horizon of Discovery

New Research Grants

VISUAL-SPATIAL PROCESSING IN CHILDREN WITH PRADER-WILLI AND WILLIAMS SYNDROMES: ETIOLOGY-RELATED COGNITIVE STRENGTHS AND WEAKNESSES

Georgene Troseth, Ph.D., assistant professor of psychology and human development, with Robert Hodapp, Ph.D., professor of special education, and Elisabeth Dykens, Ph.D., professor of psychology and human development

Funding: Vanderbilt Discovery grant

MUSIC AND ANXIETY IN WILLIAMS SYNDROME

Elisabeth Dykens, Ph.D., professor of psychology and human development, with John Gore, Ph.D., Chancellor's University professor of biomedical engineering and radiology, and Adam Anderson, Ph.D., associate professor of biomedical sciences and radiology and radiological sciences **Funding:** Vanderbilt Discovery grant

ADOLESCENTS WITH DOWN SYNDROME: RELATING PSYCHOLOGICAL, HEALTH, AND FAMILY FUNCTIONING

Robert Hodapp, Ph.D., professor of special education, with Robert VanDervoort, M.D., and Elisabeth Dykens, Ph.D., professor of psychology and human development

Funding: Vanderbilt Discovery grant

COGNITIVE CONTROL IN THE FIRST YEAR OF LIFE IN SIBLINGS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS

Julia Noland, Ph.D., research assistant professor of psychology and pediatrics, with Wendy Stone, Ph.D., professor of pediatrics and psychology, and Tedra Walden, Ph.D., professor of psychology **Funding:** National Alliance for Autism Research

New Research Training Grant FAMILY-CONTEXT INTERVENTIONS RESEARCH TRAINING PROGRAM

An innovative pre- and postdoctoral research training grant. Builds research capacity in the area of child and adolescent interventions research and extends to interventions that involve the family, and supports three predoctoral and five postdoctoral positions (Ph.D., M.D., Psy.D.).

Bahr Weiss, Ph.D., co-director, associate professor of psychology and human development, and co-director Steven Hollon, Ph.D.; program faculty include Bruce Compas, Ph.D., Judy Garber, Ph.D., Ann Kaiser, Ph.D., Robin McWilliam, Ph.D., Richard Shelton, M.D., Wendy Stone, Ph.D., and Joseph Wehby, Ph.D.; all are Kennedy Center members.

Funding: National Institute of Mental Health

Study Finder

amilies, and service providers working with families, now have "Study Finder," a new Internet tool used to easily find research studies that may offer intervention or in other

ways advance knowledge of development and developmental disabilities. Study Finder is for anyone interested in taking part in research, since Vanderbilt Kennedy Center research studies include children and adults, with and without disabilities.

A parent simply enters the age, diagnosis (if applicable), and gender of the potential study participant, and in turn receives a "Report" of all Vanderbilt Kennedy Center research projects that are a possible fit. The Report provides a brief description and contact information. No one at the Kennedy Center will see your Report. If you would like to get more information to decide whether to take part in the study, call the contact number on the Report.

You can find Study Finder on the Vanderbilt Kennedy Center

Web site at kc.vanderbilt.edu/studyfinder. For questions or more information, contact Teresa Turnbo, (615) 936-5118, teresa.turnbo@vanderbilt.edu



Frequently Asked Questions

What is the incidence of autism in people with Down syndrome? How would this be diagnosed?

Large-scale studies have not been conducted that pinpoint how many people with Down syndrome actually have autistic disorder. Recent estimates, based on small samples, suggest that 7% to 10% of people with Down syndrome also have autism. Earlier studies found lower rates of 1% to 2%. Similar to trends in the general population, it is unclear if the actual numbers of children with autism and Down syndrome are on the rise, or if clinicians and families are simply more attuned to the symptoms of autism than in years past.

Diagnostically, the same criteria for autism apply to people with and without Down syndrome. The three hallmark features of autism include: (1) impairments in social interaction; (2) impairments in verbal or nonverbal communication; and (3) repetitive, restricted, or stereotyped behavior. Persons with Down syndrome and autism might not want to interact or communicate with others, to share or show, have a limited range of interests, and strong needs for sameness in routine.

The diagnosis of autism in people with Down syndrome is complicated by several factors. First, some parents and professionals think that impaired social or communicative development is simply part of the Down syndrome picture. Second, persons with Down syndrome have long been noted to have a sociable, friendly, and upbeat personality. While the accuracy of this personality "stereotype" is hotly debated, clinicians and families who harbor this view may easily dismiss, overlook, or misconstrue autistic symptoms.

In this vein, when children with Down syndrome do receive an autism diagnosis, it is typically much later than children in the general population. This later age of diagnosis is a serious problem, as it means missed opportunities for family support and early intervention. The outlook for persons with autism is much improved with early diagnosis and intervention, underscoring the need for early and accurate diagnoses in children with Down syndrome as well. Parents, teachers, or caregivers who suspect autism should bring their concerns to a mental health or health professional, preferably with prior experience in autism (e.g., child psychiatrist, clinical or educational psychologist, psychiatric social worker, physician, pediatrician, speech therapist).

Elisabeth Dykens, Ph.D., Vanderbilt Kennedy Center Deputy Director of Research Program on Emotion and Mood, Professor of Psychology and Human Development



Susan Gray School for All Children Vanderbilt Kennedy Center • Peabody College

Family Choices, Quality Services

amily-centered services" is a Susan Gray School core value in serving children and families. It recognizes that families are central in caregiving and decision-making. As Dr. Susan Gray said, "Parents are a child's first teacher." Having choices among service settings is an important aspect of family-centered services. One "size" does not fit all. At the Susan Gray School, many children are served "on site," in the School's classrooms. Other children and families are served through the Outreach Program.

Four Outreach Program teachers work with care providers to promote the development of children with developmental delays who are under 3 years old. Outreach visits may take place weekly in a child's home or in a community childcare center, on a community playground, or during a community outing. Recently, children and families in SGS Outreach joined each other at the Zoo.

"The Outreach Program meets each component of our fourfold mission," said Ruth Wolery, Ph.D., Susan Gray School director. "We are *serving* children with disabilities and their families, and we are *training* families and caregivers to facilitate their child's development. The Outreach Program helps address our mission to *research* because we work on building relationships with families and children, which then



Abby's favorite teddy comforts her as she recuperates from cranial surgery.



Abby Work and Outreach teacher Kori Bailey focus on a development goal—placing objects into a container.

allows us to link researchers with potential research participants. Finally, because we work closely with

faculty and researchers in Peabody College and the Vanderbilt Kennedy Center, we are able to *demonstrate* research-to-practice recommendations for the delivery of early childhood special education."

Kori Bailey, an Outreach teacher, provides early intervention services for children both in home and at childcare centers. Here are two stories of children she works with on a weekly basis.

Outreach in the Home

At home with Abby and mom Cheri Work, Bailey poses a tough question: "Abby, would you like the ball?" Holding both a ball and a baby doll toward Abby, she watches as the 22-month-old gazes carefully at her choices. After in-depth

contemplation, Abby swats at both toys with a swing of her arms.

Each week Bailey comes to the Work's home and spends an hour "playing" with Abby—at least that's how it may seem at first glance. "Prior to each visit, I evaluate the initial broad-based goals for Abby established by her parents, and I assess her progress. Each session focuses on specific goals that we can work on," said Bailey. One of this

week's goals was to look at a named object from a group of two.

When Abby was born, her knees and hips were severely dislocated. She had corrective surgery at 6 weeks of age, and since then additional difficulties have appeared.

"We found out that her skull had fused, so she needed cranial surgery, and last summer they put in a shunt," said Abby's mom. "At 6 months, we noticed that she would look at toys but not grab at anything, so we started occupational therapy, and now, her speech hasn't developed. The doctors can't figure it out; they can't get it all put together. There is no syndrome or disorder. It is just a collection of things."

Shortly after Abby's birth, Cheri and Matthew Work were referred to the Susan Gray School by the Tennessee Early Intervention System (TEIS). Since Cheri is a stay-at-home mom, she found the School's Outreach Program a perfect supplement to Abby's occupational and physical therapies.

"Instead of enrolling Abby in the classroom program at the Susan Gray School, Kori brings school here. She gives me a lot of specific ideas of things that I can do to help Abby's development here



Abby and her mom Cheri Work enjoy reading everyday. Mrs. Work is a Peabody graduate in early childhood education.

at home," she said. "It is nice in our environment to see things that I can do differently. Abby can sit in her highchair and be fed, something that she does everyday, with Kori showing me how I can do things in a new way. We get a greater variety of things within our space."

Bailey believes the Outreach Program is most effective when parents continue to integrate the new developmental activities into their everyday

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.



Ruby Miggo and Kori Bailey enjoy water play day at Glen Leven

lives. "Cheri is doing things that she would do with Abby regardless of physical or mental challenges. She doesn't make accommodations for her. She is treated like a typical 2-year-old."

Outreach in Childcare Centers

In a playground full of children yelling and running, Ruby Miggo quietly plays with the bubbles. She rubs the bubble soap on her hands, on Bailey's knee, and finally on the hands of her classmates. Ruby continues to invent new purposes

for the bubbles, all without saying a word.

Ruby was adopted in China by Melissa and Dave Miggo when she was only 11 months old. Two months after her adoption, the Miggos were blessed with another arrival, the birth of their biological daughter Liza.

"Since the beginning, we noticed that Ruby was not developing at the same rate as Liza," said Ruby's mom. "She had a very short attention span and struggled with tasks that took more time to complete."

As Ruby continued to grow and develop physically and mentally, her speech never

followed suit. Prior to starting Outreach, few words, if any, left Ruby's mouth. "It is not a receptive problem," Bailey said. "Ruby hears what you are saying and understands. She just doesn't express herself vocally."

TEIS referred the Miggos to the Outreach Program a year ago to help Ruby get one-on-one instruction while at the childcare center she attends.

"Kori made the Outreach Program very convenient," Mrs. Miggo said. "She could work with Ruby at the childcare center or at our home. Since I work out of our home, the flexibility was a great help."

While Ruby has a speech therapist that comes to her home, Bailey visits

Glen Leven Day School each week to promote learning language across settings. As is true with many of her childcare center programs, Bailey offers advice to the childcare provider on activities that promote development throughout the course of daily routines. Since she began in the Outreach Program over a year ago, Ruby's vocabulary has increased, as well as her ability to imitate sounds.

"We are optimistic that by the age of 5 or 6, Ruby will have caught up developmentally with other children her age," said her mom. "We are lucky to have so many resources to help her on her way."



Kori Bailey encourages Ruby to sort beads. This activity encourages Ruby to maintain attention on non-preferred tasks.

SGS News

CINCO DE MAYO—Olé! Gracias!

The Susan Gray School's Fourth Annual Cinco de Mayo fundraiser benefiting the Emma Harr Fund was held May 1. Over 300 people attended the festivities, and \$25,000 was raised through ticket and auction sales. Cinco de Mayo participants enjoyed a variety of musical entertainment, good

BethAnn McLaughlin,

food, and both a silent and live auction with a wide range of items.

'Without the help of Nashville businesses, volunteers, and individuals, we simply would not be able to have our fundraiser," said BethAnn McLaughlin, Ph.D., research assistant professor of



Jenni Moscardelli and Leigh Ann Witt

Mayo is a wonderful opportunity for community members, families, friends, and multiple institutions to contribute to the common goal of helping children of all abilities."

pharmacology,

Vanderbilt Kennedy Center member, Susan

Gray School

parent, and member of the

Cinco de Mayo

tee. "Cinco de

planning commit-

Proceeds from the auction go to the Emma Harr Fund which supports supplemental speech, occupational, and physical therapy for children at the Susan Gray School. Emma Harr is a Susan Gray school alumna and niece of event founder Jenni Moscardelli who, along with her friend Leigh Ann



Kristi Neumann

Witt have co-chaired all four Cinco de Mayo Susan Gray School fundraisers.

Outreach News

Best Buddies

t is difficult to imagine having a fulfilling life without having friends. Unfortunately, friendships are often in short supply for adolescents and young adults with intellectual disabilities. That's not the case for members of Best Buddies—in Nashville and in chapters around the country and world. Best Buddies is a non-profit international

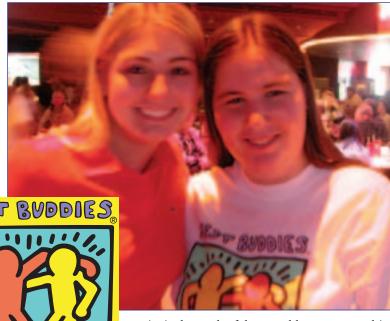
organization dedicated to enhancing

the lives of people with intellectual disabilities by providing opportunities for one-to-one friendships. The national Web site is www.bestbuddies.org.

Vanderbilt University and the Kennedy Center have a Best Buddies chapter incorporating the Nashville community. "Our Vanderbilt

chapter pairs college students with participants in the Metro Nashville Parks and Recreation Program," said Elise McMillan, J.D., Vanderbilt Kennedy Center director of community outreach and the chapter's faculty advisor. "It's wonderful to see friendships develop during the four years students are here. Some have continued even after graduation."

Vanderbilt's chapter has grown to 41 college buddies and 18 associate members in the past year. Associate members are not assigned to a buddy but



are invited to each of the monthly activities, such as bowling, parties, and Vanderbilt sporting events. Buddy pairs

call each other at least once a week and spend time together at least twice a month.

"I feel very fortunate that Best Buddies has enabled me to foster a relationship with my buddy, Bernadette. She is 24-years-old and has Down syndrome. We go to the movies, Vanderbilt sporting events, and out to dinner," said Kathryn Lawton, Vanderbilt student and Best Buddy participant. "Bernadette is a remarkable woman, and I always look forward to spending time with

> her. She has helped to make my experience at Vanderbilt University much more meaningful, and I know that our relationship will continue for years to come."

Best Buddies enriches the lives of the buddy pairs. Both partners can cultivate a meaningful relationship that they may never have had the opportunity to experience otherwise. It allows participants to discover the meaning of friendship while enhancing their individuality. The program is a way to introduce socialization opportunities to those with intellectual disabilities, and a way for college students to get more involved in making a real difference in someone's life. Best Buddies chapters are organized at several levels: middle school, high school, college, and "citizen." E-buddies (Internet friend-

ships), accessed through the national Web site, are another popular aspect of the program, promoting communication between buddies and helping to develop relationships.

For information on Vanderbilt Best Buddies, contact advisor Elise McMillan, 615-343-2540, elise.mcmillan@vanderbilt.edu.

Exhibit on National Loan

By Anne Corn, Ph.D.



Impairments: Teachers in Action, a very successful photography exhibit, is now on its travels around the nation. The exhibit showcases this exciting and meaningful career and emphasizes the need for new professionals to enter this area of special education.

The Brentwood Camera Club of Brentwood,
Tennessee, helped the Program in Visual
Disabilities in Peabody College's Department

of Special Education develop the exhibit. It premiered at the Vanderbilt Kennedy Center
November 2003-January 2004, as part of the
Vanderbilt Kennedy Center Arts Initiative. It is
now at the Iowa Braille School. In the fall, the
exhibit will move to the University of Arizona
at Tucson and then onto other universities,
schools, and organizations. Information about
local services to students with visual impairments are added at each location, and
recruitment materials are distributed for those
interested in pursuing a career in teaching
students with visual disabilities.

The exhibit showcases the work of those who educate children and adults with visual impairments. It highlights the variety of

lessons teachers provide to children of all ages with low vision and children who are functionally or totally blind. The photographs depict such lessons as teaching a preschooler to use an optical device to see at a distance and teaching Braille to a high school student. Lessons in mathematics, orientation and mobility, cooking, and electrical work are among the photographs.

Inquiries about exhibit loan should be directed to anne.corn@vanderbilt.edu, 615-322-2249.

Explorers Unlimited III Exhibit

This quilt is featured in the exhibit "Explorers Unlimited III," which is on display at the Vanderbilt Kennedy Center through September 30. Explorers Unlimited is a summer academic camp for adolescents and young adults with Down syndrome. This year's exhibit includes art created by Explorers campers, 2002-2004.



Outreach News

Reaching to Latino Families

ispanics with disabilities are a minority within a minority. Now Tennessee's Spanish-speaking families affected by a disability have a new person to call to connect them with services and support. Claudia Avila, a bilingual social worker, joined the Tennessee Disability Pathfinder staff at the Vanderbilt Kennedy Family Outreach Center in April 2004.

Avila's unique role with Tennessee Disability Pathfinder, a statewide information and referral service for individuals of all ages with disabilities, is to develop the Hispanic Disability Outreach Program around the state. This includes identifying bilingual contacts in communities, identifying agencies in Tennessee that serve the Hispanic population, and providing disability information and assistance to individuals who speak Spanish.

"I like knowing that I am making a difference in somebody's life. Many Hispanics have no idea what resources are available to them, especially when a disability is involved," Avila said.

"We are delighted to

have Claudia working in our program," said Pathfinder's program director Carole Moore-Slater. "She brings cultural awareness, social work experience, and skills in translation that are very beneficial to families."

Avila's Hispanic background is an asset to the families that she serves. She was born in Chihuahua, Mexico and moved to Midland, Texas twelve years later. At the age of nineteen, Claudia moved to Nashville to pursue her degree



laudia Avila

in social work and Spanish from Belmont University. She graduated in 2003.

"I welcome calls from Tennessee
Hispanic families," Avila said. "Often our
Latino families, especially first-generation
immigrants, are assisted by a variety of
organizations like community centers,
churches, and Spanish-language media. I
urge any group who works with this
community to contact me, so that we can
get acquainted with their resources and
they in turn can learn about our
resources. I am traveling in Tennessee, as
well, to get to know staff in organizations
serving the Latino community."

Tennessee Disability Pathfinder has telephone, internet (www.familypathfinder.org), and print resources in both English and Spanish to help connect the Tennessee disability community with service providers. Referral services are free of cost and are provided to individuals with disabilities, family members, service providers, and advocates. Contact 615-322-7830 (Nashville Español), 1-800-640-4636

(toll-free), claudia.avila@vanderbilt.edu.

Celebrating Family Outreach



Teresa Turnbo, left, helps a family collect information on Outreach Center services as social worker Carol Rabideau looks on.

On April 21, the Vanderbilt Kennedy Family Outreach Center celebrated its opening with families and Community Partners. Staff provided information on the full range of its programs, including the Lili Claire Family Outreach Program, Reading Clinic, Behavior Analysis Clinic, Arts and Disabilities, and Tennessee Disability Pathfinder.

The Family Outreach Center provides a single point of entry to services offered by the Vanderbilt Kennedy Center, Vanderbilt University, and the surrounding community, as well as ongoing support for these individuals and their families. In addition, the Center links children, adults, and family members with the latest research in diagnosis and treatment.

Thanks to the support of the Lili Claire Foundation, the services of a family social worker are available both at the main location at 1810 Edgehill Avenue, adjacent to campus, and at a satellite office in the Junior League Family Resource Center on the main floor of Vanderbilt's Monroe Carell Jr. Children's Hospital.

At the celebration, Vanderbilt Kennedy Center director Pat Levitt, Ph.D., recognized and thanked the Lili Claire Foundation and Wendy and Linda Brooks and the Brooks Family Discovery Fund for their invaluable contributions that enabled the founding of the Family Outreach Center. Levitt and Harry Jacobson, M.D., Vanderbilt vice chancellor for health affairs, presented artwork to Linda and Wendy Brooks.

Certificates of appreciation were presented to

Community Partner organizations: The Arc of Tennessee,
Autism Society of Middle
Tennessee, Cumberland
Pediatric Foundation, Down
Syndrome Association of
Middle Tennessee, Mental
Health Association of Middle
Tennessee, Metro Nashville
Public Schools, Overcomers
Ministry, Tennessee Council on
Developmental Disabilities, and
Tennessee Disability Coalition.

For information on Family Outreach Center programs, contact Teresa Turnbo at (615) 936-5118, teresa.turnbo@vanderbilt.edu.



Pat Levitt, Wendy Brooks, and Linda Brooks



The Arc of Tennessee President Ron Butler, Leadership Council Chair Barbara Gregg Phillips, The Arc Executive Director Walter Rogers, and Kennedy Center Director Pat Levitt

Spotlight

Making "The Road Less Traveled" A Good Path

MOLLIE GAVIGAN

When Mollie Gavigan was appointed to the Vanderbilt Kennedy Center Leadership Council in 2003, she was well aware of what the Kennedy Center had to offer. Her husband, Dr. William Gavigan, had served as a Leadership Council member, and their family has been touched by the Kennedy Center.

"I decided to join the Council because I believe in the Kennedy Center and I wanted to make a difference in my daughter Jeanne's life," Gavigan explained. She is a proud parent of four children, Jeanne being the youngest at 15-years-old. Jeanne was born with Down syndrome.



Jeanne Gavigan and Mollie Gavigan

"As a parent of a child with Down syndrome, you always have to be on top of your game, and I have made a conscious decision to learn about current research from the Kennedy Center," said Gavigan.

Gavigan is no stranger to special needs. Her brother had Prader-Willi syndrome, so she has always been aware of special needs education and opportunities in the Nashville community.

As Jeanne grew older, Gavigan was able to find support within the Kennedy Center. For the past

three years, Jeanne has attended Explorers Unlimited, a 4-week summer academic camp for adolescents and young adults with Down syndrome that the Vanderbilt Kennedy Center initiated in partnership with the Down Syndrome Association of Middle Tennessee. She has also participated in the Vanderbilt Kennedy Reading Clinic since its inception.

"We owe an enormous amount of thanks to the Reading Clinic—that is where Jeanne learned the majority of her reading skills. The Kennedy Center has been a valid power in Jeanne's growth. I trust the Reading Clinic and the Explorers Unlimited camp, and I know Jeanne is in good hands," explained Gavigan.

Jeanne will enter Pope John Paul II High School in Fall 2004 to join their new special needs program. "Jeanne will have the best education available, and it would not have happened without the Kennedy Center and the support of Dr. Steve Camarata—who helped ignite the new special needs program. This is absolutely the most exciting thing going on in my family's life right now."

Gavigan claims the best reward of having a child with Down syndrome is that it has changed her life for the better. "Jeanne has given a depth to my being that is very precious. She teaches me what is really important in life. I am on a road less traveled, and most of the time it is a very enjoyable path."

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

Mrs. Mary Proctor

For information about joining the Nicholas Hobbs Donor Society or making Honor or Memorial gifts, contact the Development Office, 615-343-2540.

Every effort has been made to ensure the accuracy of this report, which reflects Hobbs Society membership, and Honor and Memorial gifts May 1-July 9, 2004. 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.

Waddell & Reed Benefit Golf Tournament



Laurie Sisk and Pat Levitt

The Vanderbilt Kennedy Center was the beneficiary of this year's annual Waddell & Reed Financial Services Charity Golf Tournament on May 21. This was the second year that the Kennedy Center and Waddell & Reed collaborated on this special event. Joined by celebrity entertainer Ty Herndon, the tournament was held at the renowned Vanderbilt Legends Golf Club in Franklin. More than 120 golfers took part in the event, doubling participation from last year.

Golfers enjoyed prizes, cold beverages, lunch, and executive goody bags. All golfers had the opportunity to win \$20,000 or a Hummer H2, generously provided by Crest Cadillac of Nashville, in the Hole-in-One contest.

The WB 58 "Dubba Dubba" Twins also met with golfers as they took part in the putting contest.

"Corporate sponsors not only bring financial resources to the golf tournament, but they are well-known members of the community," said Laurie Sisk, member of the Vanderbilt Kennedy Center Leadership Council and a Waddell & Reed associate. "It was great having them support our cause and increase awareness of the great things happening at the Vanderbilt Kennedy Center."

Leadership Council members Judy Claverie and Ruth Johnson were also there to welcome golfers.

The Vanderbilt Kennedy Center expresses its deep appreciation to the Waddell & Reed Golf Committee: Laurie Sisk, Patrick Stites, Chad Richards, Brandon Edwards, and Dobbs Frank.



Leadership Council members Judy Claverie, Laurie Sisk, and Ruth Johnson

Circle of Peace

CHILDREN are the focus of the sixth annual Vanderbilt Kennedy Center Leadership Dinner on October 21 at Loews Vanderbilt Hotel. Chaired by Ann Eaden, Vice President of Beaman Automotive, and active community leader, the dinner will honor the members of the Vanderbilt Kennedy Center's Nicholas Hobbs Donor Society.

"Come Play" is the theme for the evening focusing on the universal importance of play as the center of life and learning for children. Inspiration for this year's event was based on the Vanderbilt Kennedy Center's "Come Play" sculpture honoring the late Dr. Nicholas Hobbs,

co-founder of the Center and pioneer in the field of child psychology.

The dinner promises to be a celebration of children with a performance by the W.O. Smith Children's Choir, children introducing the speakers and taking part in events throughout the evening, and centerpieces of children at



'Circle of Peace' sculpture by Gary Lee Price at Vanderbilt's Monroe Carell Jr. Children's Hospital.

play sculpted in bronze by internationally renowned sculptor Gary Lee Price.

"Price is the sculptor of 'Circle of Peace,' which is prominently displayed in front of Vanderbilt's Monroe Carell Jr. Children's Hospital. My husband and I have purchased several of his smaller works over the years, so he responded in this generous way when we made a request for his work to be used as centerpieces for this special event," said Mrs. Eaden.

"Several features have been added to the Leadership Dinner to create visibility and community interest in the Vanderbilt Kennedy Center," explained Barbara Gregg Phillips, Chair of the Vanderbilt Kennedy Center Leadership Council, "one of which is offering the purchase of corporate tables which will be filled by people who have not before heard about the fantastic research and services of the Vanderbilt Kennedy Center."

Additional members of the Vanderbilt Kennedy Center Leadership Council assisting in planning are Ann Bernard, Linda

Brooks, Judy Claverie, Annette Eskind, Carol Henderson, and Laurie Sisk, with the professional support of Elise McMillan and Tim Stafford.

For more information on attending this event, sponsoring a corporate table, or becoming a member of the Hobbs Society, please contact the Kennedy Center at 615-343-2540.

Leadership Council of Vanderbilt Kennedy Center

Mrs. Barbara Gregg Phillips, Chair

Mrs. Honey Alexander

Mrs. Madge Bass

Mrs. Ann Bernard

Mrs. Barbara Bovender

Mrs. Linda Brooks

Mrs. Cathy Brown

Mrs. Becky Chickey

Mrs. Judy Claverie

Mrs. Molly Edmondson

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The Honorable Andrew Shookhoff

Ms. Laurie Lee Sisk

Mr. Richard and Mrs. Rhonda Small

Ms. Beth Tannenbaum

Ex-Officio Members:

Dr. Pat Levitt

Mrs. Elise McMillan

Mr. Tim Stafford

Hold the Date

"Come Play" **Vanderbilt Kennedy Center Leadership Dinner**

October 21, 2004 **Loews Vanderbilt Hotel**

Contact Elise McMillan, 615-343-2540



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 and vanaerbiit Kenneay 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

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Kendal Broadie, Ph.D., Deputy Director of Developmental Neurobiology and Plasticity Research Program

Stephen Camarata, Ph.D., Deputy Director of Communication and Learning Research Program

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Art Director: Melanie Bridges, B.F.A.
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Vanderbilt Kennedy Center for Research on Human Development

Fall 2004 Calendar of Events

Unless otherwise noted, events are free and open to the public. Events are subject to change. Please check the calendar on the Vanderbilt Kennedy Center Web site kc.vanderbilt.edu or call 615-322-8240. For disability-related training and other events statewide and nationally see www.disabilitytrainingtn.org.

September

JULY-SEPTEMBER

Arts and Disabilities Exhibit Explorers Unlimited III

Art in various mediums created 2002-2004 by campers of Explorers Unlimited, a summer academic camp for adolescents and young adults with Down syndrome

Co-Sponsor Down Syndrome Association of Middle Tennessee

Monday-Friday 7:30 a.m.-5:30 p.m. Lobby Kennedy Center/MRL Building

SEPTEMBER 1

Developmental Disabilities Grand Rounds Towards Unraveling the Complex Genetics of Autism

James Sutcliffe, Ph.D., Assistant Professor of Molecular Physiology & Biophysics and Vanderbilt Kennedy Center Investigator Light breakfast provided

Co-Sponsor Center for Child Development, Pediatrics

Wednesday 8 a.m.

Room 241 Kennedy Center/MRL Building

SEPTEMBER 9

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

Richard Woodcock, Ed.D., Visiting Professor of Hearing & Speech Sciences and Vanderbilt Kennedy Center Visiting Scholar Thursday 4 p.m.

Room 241 Kennedy Center/MRL Building

October

OCTOBER 13

Developmental Disabilities Grand Rounds Face-Selective Fusiform Activation in Asperger Syndrome: A Matter of Tuning to the Right (Spatial) Frequency

Kim Curby, Psychology Doctoral Student Light breakfast provided

Co-Sponsor Center for Child Development, Pediatrics

Wednesday 8 a.m.

Room 241 Kennedy Center/MRL Building



OCTOBER 15-DECEMBER 31

Arts and Disabilities Exhibit Creative Expressions X

Co-sponsor Nashville Mayor's Advisory
Committee for People with Disabilities
Artists will be recognized at a Saturday,
October 23 reception at the Nashville Main
Library held in conjunction with a conference.
Information teresa.turnbo@vanderbilt.edu
615-936-5118

Monday-Friday 7:30 a.m.-5:30 p.m. Lobby Kennedy Center/MRL Building

OCTOBER 21

"Come Play"—Vanderbilt Kennedy Center Leadership Dinner

By invitation. Honoring leadership volunteers and members of the Nicholas Hobbs Donor Society.
Information Elise McMillan
615-343-2450
Thursday 7 p.m.
Loews Vanderbilt Hotel

November

NOVEMBER 3

Developmental Disabilities Grand Rounds Etiology and Treatment of Reading Disabilities/Dyslexia

Donald Compton, Ph.D., Assistant Professor of Special Education and Vanderbilt Kennedy Center Investigator

Light breakfast provided

Co-Sponsor Center for Child Development, Pediatrics

Wednesday 8 a.m.

Room 241 Kennedy Center/MRL Building

NOVEMBER 10

Graduate Neuroscience Seminar Series Drosophila as a Model System for Understanding and Treating Mental Retardation: Bioinformatics and Experimental Approaches

Linda Restifo, M.D., Ph.D., Associate Professor of Neurobiology and Neurology, University of Arizona

Co-Sponsor Vanderbilt Brain Institute Wednesday 4 p.m.

Room 1220 Medical Research Building III First Floor Lecture Hall



V

Vanderbilt Kennedy Center for Research on Human Development



DECEMBER 1

Developmental Disabilities Grand Rounds Behavioral Symptoms and Differential Sensitivity to Psychostimulants in a Mouse Model of Attention Deficit/Hyperactivity Disorder

Michael McDonald, Ph.D., Assistant Professor of Pharmacology and Vanderbilt Kennedy Center Investigator Light breakfast provided

Co-Sponsor Center for Child Development, Pediatrics

Wednesday 8 a.m.

Room 241 Kennedy Center/MRL Building

DECEMBER 2

Lectures on Development and Developmental Disabilities

Molecular Mechanisms that Control Synapse Stability Versus Disassembly

Graeme Davis, Ph.D., Assistant Professor of Biochemistry & Biophysics, University of California at San Francisco Thursday 4 p.m.

Room 241 Kennedy Center/MRL Building

Sibshops

A Vanderbilt Kennedy Family Outreach Center program for siblings of children with disabilities, grouped by ages 7-12, 13-17 years, college-age. Games, friends, discussions. Advance registration required. Information teresa.turnbo@vanderbilt.edu 615-936-5118

Dates and locations to be announced

Autism Society

Autism Society of Middle Tennessee Events

For information and registration, contact ASMT 615-385-2077

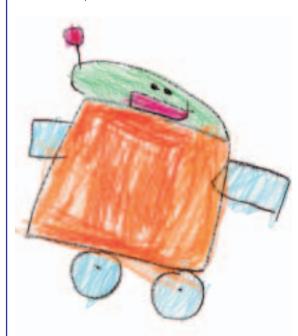
SEPTEMBER 16, NOVEMBER 18 Autism Orientation

Registration required. Thursday 6:30-8:30 p.m. Vanderbilt Bill Wilkerson Center

SEPTEMBER 25

Conference—Complementary and Alternative Medicine for Children with Autism

To register visit www.autismmidtenn.org or call 615-385-2077 Saturday 9 a.m. – 4 p.m. University School of Nashville



Down Syndrome

Down Syndrome Association of Middle Tennessee

For information, contact DSAMT dsamt@bellsouth.net 615-386-9002

NOVEMBER 5-6

Fired Up! For Down Syndrome Third Statewide Conference

Friday-Saturday, Franklin, TN Keynote speaker: Julie R. Korenberg, M.D., Ph.D., Cedars-Sinai Medical Center, UCLA For health care professionals, educators, advocates, family members, self-advocates, and other community professionals

Take Part in Research

The following are new projects supported by the Vanderbilt Kennedy Center that are currently seeking participants. For a complete list of all projects seeking participants, please visit the Center's Web site—see kc.vanderbilt.edu/kennedy/community/ takingpart.html

Social Communicative Effects of Language Intervention

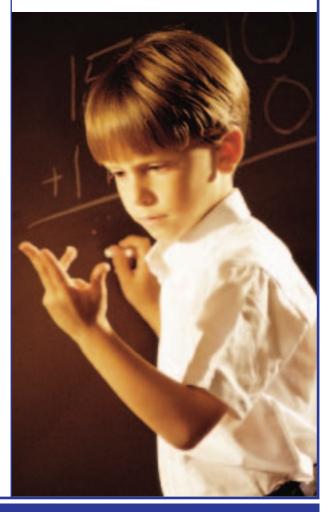
(children ages 2-5 with significant delays in language and development; parent or caregiver participation is required)
Ann Kaiser, Ph.D. and Terry Hancock Ph.D.
Kelly Windsor
615-322-8160

Treatment-Resistant Depression

(depressed adults over 18 who haven't responded to antidepressants) Richard Shelton, M.D. Stephanie Addington, Barbee Smith 343-9669

Helping Children Overcome Math Disability

(third-grade students with math difficulties) Lynn Fuchs, Ph.D. Erin Caffrey 615-322-8291



Number 6 Fall 2004