Leadership Education in Neurodevelopmental and Related Disabilities

Training Our Future Leaders in the Maternal and Child Health Field
Leadership Education in Neurodevelopmental and Related Disabilities (LEND) programs were developed by the Health Resources and Services Administration’s (HRSA) Maternal and Child Health Bureau (MCHB) to achieve a vision for the 21st century for, “An America where all children and families are healthy and thriving, and have a fair shot at reaching their fullest potential.”

LENDs Have a Real-World Impact on the Lives of Children and Families

There are at least 3.8 million children with developmental disabilities, including autism spectrum disorders, in the United States. It is increasingly difficult for people with disabilities to obtain appropriate medical treatment because of the limited number of health care providers, the way that many health care professionals were trained, and other outdated elements of the health care system that fail to meet their needs. LEND Programs are exceptionally qualified to address many of today’s health care shortages through the interdisciplinary training of health care professionals.

LEND Programs have a real-world impact in the lives of children and families with disabilities by:

- Influencing positive attitudes toward children with disabilities;
- Helping pioneer interdisciplinary, inclusive, and integrated systems of care;
- Providing community linkages between scientific discovery and practice;
- Fostering family- and person-centered care;
- Developing new service models and approaches for care;
- Collaborating with state and local agencies;
- Conducting research; and
- Affecting public policy for children with developmental disabilities and their families.

LENDs Train Future Leaders in Maternal and Child Health

Interdisciplinary Leadership Training

Interdisciplinary training is the hallmark of LEND Programs. Faculty and trainees represent 14 core academic disciplines as described in the chart at right. Many LENDs have additional disciplines, including assistive technology, rehabilitation, law, and psychiatry. All LENDs include parents and families of people with special health care needs as paid staff, faculty, consultants, and/or trainees.

LEND programs operate within a university system, many as part of a University Center for Excellence in Developmental Disabilities (UCEDD) or other larger entity, and are commonly affiliated with local university hospitals and/or health care centers. This collaboration provides the programs with expert faculty, facilities, and other resources necessary to provide exceptional interdisciplinary training and services.

LEND curricula encompass education at the master’s, doctoral, and postdoctoral levels, with an emphasis on developing a knowledge and experience base in:

1. Neurodevelopmental and related disabilities, including autism;
2. Family-centered, culturally competent care; and
3. Interdisciplinary and leadership skills.

Traineeships include classroom coursework, leadership development, clinical skill building, mentoring, research, and community outreach through clinics, consultations, and the provision of continuing education and technical assistance.

Trainee Core Disciplines

- Audiology ................... 4%
- Family ........................ 2%
- Genetics ...................... 1%
- Nursing ...................... 3%
- Nutrition .................... 4%
- Occupational Therapy ...... 5%
- Pediatrics / Medicine ...... 23%
- Pediatric Dentistry .......... 2%
- Physical Therapy ............ 4%
- Psychology .................. 16%
- Self-Advocate ............... 4%
- Social Work ................. 5%
- Special Education ........... 4%
- Speech-Language Pathology . 7%
- Other ....................... 4%
The diverse faculty of the LEND Programs are nationally recognized leaders in their fields

Trainees
LEND trainees are the top students in their field who show promise to become leaders in teaching, research, clinical practice, and/or administration and policymaking. Graduates are expected to ultimately affect the nation’s maternal and child health, and leadership training is woven throughout every facet of the LEND Program. Many trainees have directly credited their LEND training to their later career successes. Of the over 3,000 trainees graduating from the program each year, former LEND trainees include:

- The Director of a state Part C Program;
- A faculty member at a leading state medical school who co-developed a major tool used in outcomes research;
- The Health Policy Staffer for a leading member of the United States Senate; and
- Many LEND Directors, leaders of national and international organizations, state and local agencies; chairs of health-related academic departments in major universities and hospitals; and other influential leadership positions.

In whatever way their leadership is manifested, LEND graduates are uniquely qualified to address the needs of children with special health care needs and their families through clinical services, program administration, and policy development.

Faculty
The diverse faculty of the LEND Programs are nationally recognized leaders in their fields and this collective expertise is what makes LENDs successful. Their research and publications have been disseminated worldwide. In their respective disciplines, these faculty members:

- Mentor students in exemplary MCH public health practice;
- Advance the field through research;
- Provide exemplary clinical services to children and families;
- Develop curricula for interdisciplinary leadership education; and
- Provide continuing education on the latest research and practice to professionals currently in the field.

Achievements
As a network, LENDs develop and promote best practices, produce exceptional clinicians and leaders in a variety of disciplines, and further systems change through:

- Interdisciplinary training;
- Leadership skill development;
- Promotion of cultural competence;
- Community outreach and continuing education;
- Policy development;
- Translation of research to practice;
- Provision of technical assistance;
- Collaborative processes; and
- Resource development and dissemination.

Recent Year-end LEND Network Highlights

- Provided continuing education to over 220,000 individuals, including health care professionals and paraprofessionals, family members and caregivers, legislators, and individuals with disabilities.
- Trained nearly 2,900 long-term and intermediate LEND trainees.
- Provided more than 166,000 individuals with special health care needs and disabilities with clinical or community-based services.
- Developed more than 3,600 products and publications about developmental disabilities, including autism.

LENDs are Fundamental to MCHB’s Mission
HRSA’s Maternal and Child Health Bureau (formerly the Children’s Bureau) began its efforts in the 1950’s to identify and treat children with disabilities. Since their inception in the 1960’s, LENDs have long held a crucial role in assuring exemplary assessment and treatment by training leaders in health fields and providing interdisciplinary care. In the 1980s, LEND projects were funded under Title V of the Social Security Act and administered through MCHB’s Division of MCH Workforce Development. Since 2006, both the LEND and Developmental Behavioral Pediatrics training programs have been funded under the Autism Collaboration, Accountability, Research, Education and Supports—or Autism CARES—Act.

LEND Programs Form a National Network
There are 52 LENDs across the country. Collectively, they form a national network that shares information and resources and maximizes their impact. They work together to address national issues of importance to children with special health care needs and their families, exchange best practices, and develop shared products.

- LENDs have the same overall mission, yet each of the programs has a unique focus and develops individual strengths.
- LENDs come together regionally to address issues specific to their location.
- LENDs also work together nationally to address common concerns, exchange best practices, and develop shared products.

Through their membership in the Association of University Centers on Disabilities (AUCD), LENDs are an integral part of national and international efforts to improve the lives of persons with disabilities and their communities.
About Developmental Disabilities and Autism Spectrum Disorders

What is a Developmental Disability?

Developmental disabilities are a diverse group of severe chronic conditions that are due to mental and/or physical impairments. People with developmental disabilities have challenges with major life activities such as language, mobility, learning, and independent living. Developmental disabilities may be apparent anytime from birth up to 22 years of age and are usually lifelong.

Over 6 million individuals in the US have developmental disabilities. A developmental disability, according to the Developmental Disabilities Assistance and Bill of Rights Act, is defined as a severe, chronic disability which:

- Originates at birth or during childhood;
- Is expected to continue indefinitely; and
- Substantially restricts the individual's functioning in several major life activities.

Examples of developmental disabilities include:

- Autism spectrum disorders
- Behavior disorders
- Brain injury
- Cerebral palsy
- Spina bifida

People with developmental disabilities benefit from comprehensive, long-term supports. With such services, people with disabilities are able to be more active, productive, and independent.

There are many social, environmental and physical causes of developmental disabilities, although for many a definitive cause is still a scientific challenge yet to be discovered.

Common factors causing developmental disabilities include:

- Brain injury or infection before, during or after birth;
- Growth or nutrition problems;
- Abnormalities of chromosomes and genes;
- Babies born long before their expected birth date;
- Poor diet or health care;
- Drug misuse during pregnancy, including alcohol intake and smoking; and
- Child abuse, which can also have a severe effect on a child’s socio-emotional development.

LEND trainees are prepared to provide skillful assessment and treatment of developmental disabilities and to engage in the research necessary to demonstrate that their practices are effective.

What is Autism Spectrum Disorder?

According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), Autism Spectrum Disorder (ASD) is a developmental disability characterized by:

- Differences in social communication and social interaction across multiple contexts (e.g. social-emotional reciprocity, nonverbal communicative behaviors, understanding relationships); and
- Restricted, repetitive patterns of behavior, interests, or activities (e.g. repetitive motor movements, inflexible adherence to routines, hyper- or hypo-reactivity to sensory input).

The Centers for Disease Control and Prevention (CDC) reports that about 1 in 59 children has been identified as having ASD; it occurs in all racial, ethnic, and socioeconomic groups and is more than four times more likely to occur in boys than girls. It is a lifelong condition that may be diagnosed before the age of three. People with ASD have a wide range of cognitive abilities and support needs, hence the need for individualized approaches to care. While many people with ASD share some of the same symptoms, they differ greatly in terms of age of onset, severity, and appearance.

As many as 1 in 59 children may have Autism Spectrum Disorder

The rapid growth of the number of children with ASD and other related developmental disabilities is a concern for families, health care professionals, educators, and policy makers.

Early intervention has been demonstrated to greatly improve the development of children with disabilities, and LEND training prepares professionals in evidenced-based practices for the identification, assessment and treatment of children. LEND trainees receive extensive specialized training that focuses on autism and other developmental disorders. This training is critical in addressing the need of children with disabilities and their families.

As a result of the Autism Collaboration, Accountability, Research, Education and Supports, or CARES, Act, formerly known as the Combating Autism Act, HRSA’s MCHB has been able to both supplement current LEND programs to expand their training efforts in the field of autism as well as fund additional LEND programs in states that did not have one. These additional resources have increased the number of interdisciplinary professionals who are able to identify, assess, diagnose, and serve children with autism spectrum disorders and other developmental disabilities. Much more needs to be done, but this legislation has helped LEND programs better address the challenge of the increased numbers of children with autism.

Collaboration with Others

LENDs work with local, state, national, and international groups to address issues of concern for people with disabilities, their families, and public health officials. Their involvement with the groups below provides avenues for critical collaborations in the field.

Members of the LEND Network are Leaders in the Field of Autism and Developmental Disabilities

LENDs have over 50 years of experience in conducting research, providing community education and outreach, and addressing the social, behavioral, and medical concerns for families with autism and other disabilities. Many LEND faculty and former trainees are nationally and internationally recognized experts in autism and other disabilities, and they continue to work with current trainees to broaden the field of knowledge and services available. In the past year, faculty and staff at LEND programs:

- Conducted over 105,500 interdisciplinary diagnostic evaluations to confirm or rule out autism or other developmental disabilities;
- Provided over 3,400 technical assistance and consultative sessions to state and local organizations; and
- Published over 510 different autism-specific products, including refereed journal articles, books, book chapters, and public awareness materials.

Over 6 million individuals in the US have developmental disabilities.
LEND Programs

Alabama — Civilian International Research Center
University of Alabama at Birmingham
Birmingham, AL, (205) 934-5471
www.uaex.edu/civirac

Alaska — Center for Human Development
University of Alaska Anchorage
Anchorage, AK, (907) 272-8270
www.askauchd.org

Arizona — AZ LEND
The University of Arizona, Tucson, AZ
(520) 926-7801 | http://az lend.peds.arizona.edu

Arkansas — Partners for Inclusive Communities
University of Arkansas at Fayetteville
Little Rock, AR
(501) 301-1100 | www.tablaupartsark.com

California — CA LEND
Children’s Hospital Los Angeles
University of Southern California
Los Angeles, CA, (323) 355-2300
www.uscocid.org

California — The Northern CA LEND Project
University California Davis, MIND Institute
Sacramento, CA, (916) 703-9094
www.ucdmc.ucdavis.edu/mindinstitute/education/LEND

California — UC LEND
UCLA-UCSF, Los Angeles, CA
(310) 825-5797 | www.uc-ucsf.org

Colorado — JFK Partners
University of Colorado Denver
Aurora, CO
(303) 724-5266 | www.jfkpartners.org

Connecticut — UConn Center for Excellence in Developmental Disabilities
University of Connecticut, Farmington, CT
(860) 679-1240 | www.uconn-cdd.org

Delaware — Center for Disabilities Studies
University of Delaware
Newark, DE, (302) 831-6974
www.udel.edu/cds

Florida — Mailman Center for Child Development
University of Miami Miller School of Medicine
Miami, FL, (305) 243-6801
http://miami.colorado.edu

Georgia — Center for Leadership in Disability
Georgia State University, Atlanta, GA
(404) 413-1281 | www.cld-gsu.org

Hawaii — Hawaii LEND Program
John A. Burns School of Medicine
University of Hawaii at Manoa
Honolulu, HI, (808) 369-1240
http://blog.hawaii.edu/mchlend/

Illinois — University of Illinois LEND
University of Illinois at Chicago
Chicago, IL, (312) 996-8905
www.illinoislend.org

Indiana — Riley Child Development Center
Indiana University, Indianapolis, IN
(317) 944-9416 | http://pediatrics.iu.edu/sections-and-faculty/child-development/

Iowa — Iowa LEND Program
Center for Disabilities and Development
Iowa City, IA, (319) 353-8869
https://iuhsc.org/ucidd/iowa-leadership-education-neurodevelopmental-and-related-disabilities-project

Kansas — Center for Child Health and Development
University of Kansas Medical Center
Kansas City, KS
(913) 588-5000 | www.kumc.edu/cchd/

Louisiana — Louisiana UCDDERS
Louisiana State University Health Sciences Center
New Orleans, LA
(504) 556-7585 | www.hsc.bhs.us

Maine — The Maine LEND Program
University of New England, Portland, ME
(207) 221-4067 | www.une.edu/LEND

Maryland — Kennedy Krieger Institute
The Johns Hopkins University, Baltimore, MD
(410) 934-4000 | www.kennedykrieger.org

Massachusetts — Eunice Kennedy Shriver Center
University of Massachusetts Medical School
Charlestown, MA, (774) 455-5433
www.umassmed.edu/shriver

Massachusetts — Institute for Community Inclusion
Children’s Hospital Boston, Boston, MA
(617) 355-6606 | www.childrenshospital.org/cici

Michigan — Developmental Disabilities Institute
Wayne State University, Detroit, MI
(313) 577-2564 | http://ddi.wayne.edu

Minnesota — MN LEND
Institute on Community Integration
University of Minnesota, Minneapolis, MN
(612) 301-3438 | http://ilend.umn.edu

Missouri — TIPS for Kids
University of Missouri-Columbia
Columbia, MO
(573) 882-0579 | www.tips4kids.org

Nebraska — Munroe-Meyer Institute for Genetics and Rehabilitation
University of Nebraska Medical Center
Omaha, NE, (402) 559-6430
www.unmc.edu/mmri

New Hampshire — Children’s Seashore House
The Children’s Hospital of Philadelphia
University of Pennsylvania School of Medicine
Philadelphia, PA, (215) 596-7466
http://daycp.com/CHOP-LEND

New Hampshire — LEND Center of Pittsburgh
University of Pittsburgh, Children’s Hospital
Pittsburgh, PA
(412) 692-6538 | www.lend.pitt.edu

Rhode Island — Rhode Island LEND
Rhode Island Hospital
Providence, RI, (401) 444-4003
www.lifespan.org

South Carolina — SC LEND
Medical University of South Carolina
Charleston, SC, (843) 876-1511
www.musc.edu/sc lend

South Dakota — Center for Disabilities
Sanford School of Medicine of the University of South Dakota
Sioux Falls, SD
(605) 357-1439 | www.usd.edu/cd/sdlend

Tennessee — Bridging Center for Developmental Disabilities
University of Tennessee Health Science Center
Memphis, TN
(901) 448-6511 | www.uthsc.edu/bscd

Tennessee — Vanderbilt LEND
Vanderbilt University, Nashville, TN
(615) 322-1300
http://csh.vanderbilt.edu/site/LEND

Texas — LEND Center
University of Texas Health Science Center
Houston, TX
(713) 500-3637 | www.LoneStarLEND.org

Utah — Utah Regional LEND
University of Utah, Salt Lake City, UT
(801) 585-1017 | www.urelend.org

Vermont — VT LEND
University of Vermont, Burlington, VT
(802) 656-2024 | www.uvm.edu/medicine/vt lend

Virginia — Partnership for People with Disabilities
Virginia Commonwealth University
Richmond, VA, (804) 828-0073
www.vcu.edu/partnerships/vpdf

Washington — University of Washington LEND
Center on Human Development and Disability
University of Washington
Seattle, WA, (206) 685-1350
http://depts.washington.edu/lemd

West Virginia — Center for Excellence in Disabilities
West Virginia University, Morgantown, WV
(304) 293-4682 | www.cedwvu.org

Wisconsin — Weisman Center
University of Wisconsin-Madison
Madison, WI, (608) 263-1656
www.waisman.wisc.edu/leichlend/