



ASSOCIATION OF UNIVERSITY CENTERS ON DISABILITIES  
RESEARCH, EDUCATION, SERVICE



# LEND

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 that,**

*"All children, youth, and families will live and thrive in healthy communities served by a quality workforce that helps assure their health and well-being."*

## 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of the limited number of health care providers, the way that many health care professionals were trained, and other outdated elements of the health care system that fail to meet their needs.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.

# LEND



LENDs provide long-term, graduate level interdisciplinary leadership training as well as interdisciplinary services and care. The purpose of the LEND training program is to improve the health of infants, children, and adolescents with or at risk for neurodevelopmental and related disabilities, including autism, and their families. This is accomplished through the training of professionals for leadership roles in the provision of health and related care, continuing education, technical assistance, research, and consultation.



## 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.

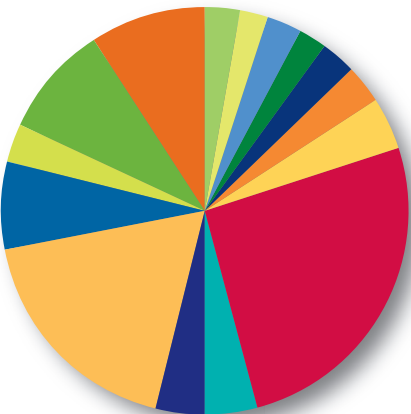
LEND programs operate within a university system, many as part of a University Center for Excellence in Developmental Disabilities (UCEDD) or other larger entity, and are commonly affiliated with local university hospitals and/or health care centers. This collaboration provides the programs with expert 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 course work, 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 . . . . .	3%
Family . . . . .	2%
Genetics . . . . .	3%
Health Administration . .	2%
Nursing . . . . .	3%
Nutrition . . . . .	3%
Occupational Therapy . .	4%
Pediatrics / Medicine . . .	26%
Pediatric Dentistry . . . .	4%
Physical Therapy . . . . .	4%
Psychology . . . . .	18%
Social Work . . . . .	7%
Special Education . . . . .	3%
Speech-Language Pathology . . . . .	9%
Other . . . . .	9%

## *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.



*"The team approach has been important for Josiah and our family. With Josiah, it was important to find care providers who understood his disabilities and knew how to help him. The interaction between professionals has been especially helpful to us to put the pieces together and to decide what services and treatments would be best for our son."*

— Monty Gurnsey, Parent





*"As a LEND trainee I not only learned the value of working with other disciplines, I also learned how to bridge the communication gaps that frequently hinder collaboration... I am a better clinician and researcher because I was a LEND trainee."*

— Amy Elliott, PhD

### Recent 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 2,500 long-term and intermediate LEND trainees.
- Provided more than 165,000 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. As a result of the Combating Autism Act of 2006, both the LEND and Developmental Behavioral Pediatrics training programs are funded under the Public Health Service 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 their families, 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
- Fetal alcohol syndrome
- Down syndrome
- Fragile X syndrome
- Intellectual disabilities

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.

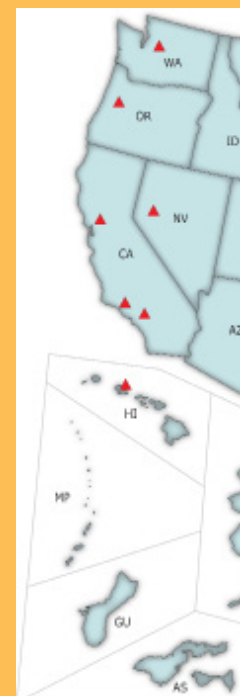
LEND trainees are prepared to provide skillful assessment and treatment of developmental disabilities and to engage in the research necessary to demonstrate that their practices are effective.

### What is Autism Spectrum Disorder?

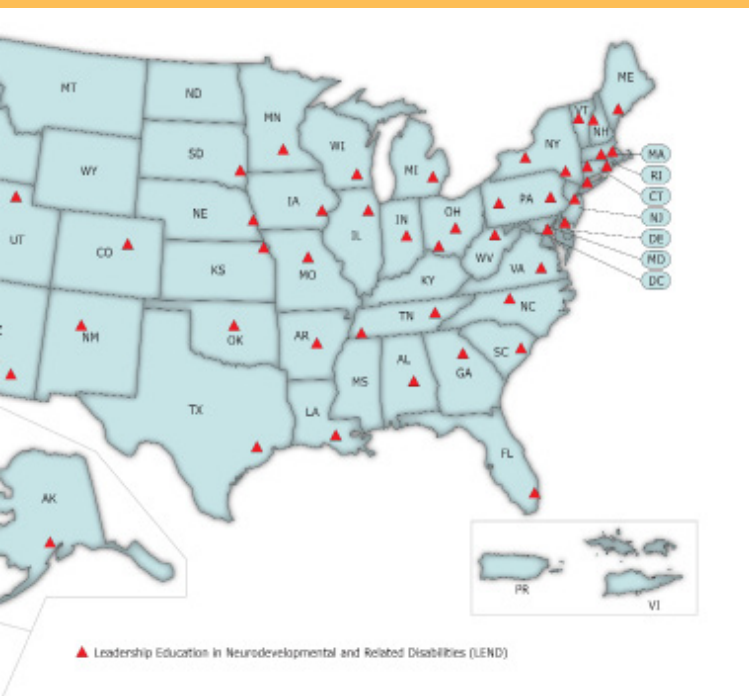
According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), Autism Spectrum Disorder (ASD) is a developmental disability characterized by:

- 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 hyporeactivity to sensory input).

The Centers for Disease Control and Prevention (CDC) reports that about 1 in 68 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. The thinking and learning abilities of people with ASDs can vary from gifted to severely challenged. While many people with ASD share some of the same symptoms, they differ greatly in terms of age of onset, severity, and appearance.



*Over 6 million individuals in the US have developmental disabilities.*



## As many as 1 in 68 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.

## 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 102,000 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.



### 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.
  - American Academy of Pediatrics
  - Association of Maternal and Child Health Programs
  - Autism NOW
  - Autism Society of America
  - Autism Speaks
  - Autism Treatment Network
  - Autistic Self Advocacy Network
  - Centers for Disease Control and Prevention's National Center on Birth Defects and Developmental Disabilities
  - Easter Seals
  - Eunice Kennedy Shriver National Institute of Child Health and Human Development
  - Family Voices
  - Health Resources and Services Administration's Maternal and Child Health Bureau
  - MCHB Interdisciplinary Training Programs, including LEAH, PPC, DBP, SPH, and others
  - Merck Foundation
  - National Center for Hearing Assessment and Management
  - National Professional Development Center on Autism Spectrum Disorders
  - Network of Autism Training and Technical Assistance Programs
  - National Center for Cultural Competence
  - National Youth Leadership Network
  - Ohio Center for Autism and Low Incidence
  - Self Advocates Becoming Empowered
  - Society for Developmental and Behavioral Pediatrics

# LEND Programs

**Alabama – Civitan International Research Center**  
University of Alabama at Birmingham  
Birmingham, AL, (205) 934-5471  
[www.uab.edu/civitanparks](http://www.uab.edu/civitanparks)

**Alaska – Center for Human Development**  
University of Alaska Anchorage  
Anchorage, AK, (907) 272-8270  
[www.alaskachd.org](http://www.alaskachd.org)

**Arizona – AZ LEND**  
The University of Arizona, Tucson, AZ  
(520) 626-7601 | <http://azlend.peds.arizona.edu>

**Arkansas – Partners for Inclusive Communities**  
University of Arkansas at Fayetteville  
Little Rock, AR  
(501) 301-1100 | [www.UofAPartners.uark.edu](http://www.UofAPartners.uark.edu)

**California – CA LEND**  
Children's Hospital Los Angeles  
University of Southern California  
Los Angeles, CA, (323) 361-2300  
[www.USCucedd.org](http://www.USCucedd.org)

**California – The Northern CA LEND Project**  
University California Davis, MIND Institute  
Sacramento, CA, (916) 703-0264  
[www.ucdmc.ucdavis.edu/mindinstitute/education/lend/](http://www.ucdmc.ucdavis.edu/mindinstitute/education/lend/)

**California – UC-LEND**  
UCLA-UCR, Los Angeles, CA  
(310) 825-5797 | [www.uc-lend.org](http://www.uc-lend.org)

**Colorado – JFK Partners**  
University of Colorado Denver  
Aurora, CO  
(303) 724-5266 | [www.jfkpartners.org](http://www.jfkpartners.org)

**Connecticut – UConn Center for Excellence in Developmental Disabilities**  
University of Connecticut, Farmington, CT  
(860) 679-1500 | [www.uconnucedd.org](http://www.uconnucedd.org)

**Delaware – Center for Disabilities Studies**  
University of Delaware  
Newark, DE, (302) 831-6974  
[www.udel.edu/cds](http://www.udel.edu/cds)

**Florida – Mailman Center for Child Development**  
University of Miami Miller School of Medicine  
Miami, FL, (305) 243-6801  
<http://mailmancenter.org>

**Georgia – Center for Leadership in Disability**  
Georgia State University, Atlanta, GA  
(404) 413-1281 | [www.cld-gsu.org](http://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](http://www.illinoislend.org)

**Indiana – Riley Child Development Center**  
Indiana University, Indianapolis, IN  
(317) 944-8167 | <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://uihc.org/ucedd/iowa-leadership-education-neurodevelopmental-and-related-disabilities-project>

**Kansas – Center for Child Health and Development**  
University of Kansas Medical Center  
Kansas City, KS  
(913) 588-5900 | [www.kumc.edu/cchd/](http://www.kumc.edu/cchd/)

**Louisiana – Louisiana UCEDDERS**  
Louisiana State University Health Sciences Center  
New Orleans, LA  
(504) 556-7585 | [www.hdc.lsuhscc.edu](http://www.hdc.lsuhscc.edu)

**Maine – The Maine LEND Program**  
University of New England, Portland, ME  
(207) 221-4587 | [www.une.edu/LEND](http://www.une.edu/LEND)

**Maryland – Kennedy Krieger Institute**  
The John Hopkins University, Baltimore, MD  
(443) 323-9400 | [www.kennedykrieger.org](http://www.kennedykrieger.org)

**Massachusetts – Eunice Kennedy Shriver Center**  
University of Massachusetts Medical School  
Charlottesville, MA, (774) 455-5433  
[www.umassmed.edu/shriver](http://www.umassmed.edu/shriver)

**Massachusetts – Institute for Community Inclusion**  
Children's Hospital Boston, Boston, MA  
(617) 355-6506 | [www.childrenshospital.org/ici](http://www.childrenshospital.org/ici)

**Michigan – Developmental Disabilities Institute**  
Wayne State University, Detroit, MI  
(313) 577-2654 | <http://ddi.wayne.edu>

**Minnesota – MN LEND**  
Institute on Community Integration  
University of Minnesota, Minneapolis, MN  
(612) 301-3438 | <http://lend.umn.edu>

**Missouri – TIPS for Kids**  
University of Missouri-Columbia  
Columbia, MO  
(573) 882-0757 | [www.Tips4kids.org](http://www.Tips4kids.org)

**Nebraska – Munroe-Meyer Institute for Genetics and Rehabilitation**  
University of Nebraska Medical Center  
Omaha, NE, (402) 559-6430  
[www.unmc.edu/mmi](http://www.unmc.edu/mmi)

**Nevada – Nevada Center for Excellence in Disabilities**  
University of Nevada, Reno, NV  
(775) 784-4921 | <http://nced.info/>

**New Hampshire – New Hampshire LEND Program**  
Dartmouth-Hitchcock Medical Center  
Children's Hospital at Dartmouth  
Lebanon, NH, (603) 650-5000  
<http://iod.unh.edu/projects/MCH-LEND.html>

**New Jersey – The Boggs Center on Developmental Disabilities**  
Rutgers Robert Wood Johnson Medical School  
New Brunswick, NJ, (732) 235-9300  
<http://rwjms.rutgers.edu/boggscenter>

**New Mexico – Center for Development and Disability**  
Albuquerque, NM (505) 272-3025  
<http://cdd.unm.edu/NMLEnd/>

**New York – Rose F. Kennedy Center LEND**  
The Teaching Hospital of Albert Einstein College of Medicine, Montefiore Medical Center, Bronx, NY  
(718) 839-7162 | [www.einstein.yu.edu](http://www.einstein.yu.edu)

**New York – Westchester Institute for Human Development**  
Center on Disability and Health, New York Medical College, Valhalla, NY  
(914) 493-8204 | [www.wihd.org](http://www.wihd.org)

**New York – Strong Center for Developmental Disabilities**  
University of Rochester  
Golisano Children's Hospital at Strong  
Rochester, NY, (585) 275-0355  
[www.urmc.rochester.edu/childrens-hospital/developmental-disabilities/fellowships/LEND](http://www.urmc.rochester.edu/childrens-hospital/developmental-disabilities/fellowships/LEND)

**North Carolina – Carolina Institute for Developmental Disabilities**  
The University of North Carolina at Chapel Hill  
Chapel Hill, NC  
(919) 966-5171 | [www.cidd.unc.edu](http://www.cidd.unc.edu)

**Ohio – LEND Program at Cincinnati Children's Hospital**  
University of Cincinnati, Cincinnati, OH  
(513) 803-3627 | [www.uclend.org](http://www.uclend.org)

**Ohio – Nisonger Center LEND**  
The Ohio State University, Columbus, OH  
(614) 688-8472 | <http://nisonger.osu.edu/LEND/>

**Oklahoma – Oklahoma LEND**  
University of Oklahoma Health Sciences Center  
Oklahoma City, OK, (405) 271-5700  
[www.oumedicine.com/body.cfm?id=1516](http://www.oumedicine.com/body.cfm?id=1516)

**Oregon – Oregon Institute on Disability and Development**  
Oregon Health & Science University  
Portland, OR, (503) 494-2734  
[www.ohsu.edu/ohsuLEND](http://www.ohsu.edu/ohsuLEND)

**Pennsylvania – Children's Seashore House**  
The Children's Hospital of Philadelphia  
University of Pennsylvania School of Medicine  
Philadelphia, PA, (215) 590-7466  
<http://doiop.com/CHOP-LEND>

**Pennsylvania – LEND Center of Pittsburgh**  
University of Pittsburgh, Children's Hospital of Pittsburgh, Pittsburgh, PA  
(412) 692-6538 | [www.lend.pitt.edu](http://www.lend.pitt.edu)

**Rhode Island – Rhode Island LEND**  
Rhode Island Hospital  
Providence, RI, (401) 444-4003  
[www.lifespan.org](http://www.lifespan.org)

**South Carolina – SC LEND**  
Medical University of South Carolina  
Charleston, SC, (843) 876-1511  
[www.musc.edu/sclend](http://www.musc.edu/sclend)

**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](http://www.usd.edu/cd/sdlend)

**Tennessee – Boling Center for Developmental Disabilities**  
University of Tennessee Health Science Center  
Memphis, TN  
(901) 448-6511 | [www.uthsc.edu/bcdd/](http://www.uthsc.edu/bcdd/)

**Tennessee – Vanderbilt LEND**  
Vanderbilt University, Nashville, TN  
(615) 936-1104  
<http://kc.vanderbilt.edu/site/lend/>

**Texas – LoneStar LEND**  
University of Texas Health Science Center at Houston, Houston, TX  
(713) 500-3637 | [www.LoneStarLEND.org](http://www.LoneStarLEND.org)

**Utah – Utah Regional LEND**  
University of Utah, Salt Lake City, UT  
(801) 585-1017 | [www.urlend.org](http://www.urlend.org)

**Vermont – VT LEND**  
University of Vermont, Burlington, VT  
(802) 656-0204 | [www.uvm.edu/medicine/vtlend](http://www.uvm.edu/medicine/vtlend)


**Virginia – Partnership for People with Disabilities**  
Virginia Commonwealth University  
Richmond, VA, (804) 828-0073  
[www.vcu.edu/partnership/valend/](http://www.vcu.edu/partnership/valend/)

**Washington – University of Washington LEND**  
Center on Human Development and Disability  
University of Washington  
Seattle, WA, (206) 685-1350  
<http://depts.washington.edu/lend>

**West Virginia – Center for Excellence in Disabilities**  
West Virginia University, Morgantown, WV  
(304) 293-4692 | [www.cedwvu.org](http://www.cedwvu.org)

**Wisconsin – Waisman Center**  
University of Wisconsin-Madison  
Madison, WI, (608) 263-1656  
[www.waisman.wisc.edu/mchlend/](http://www.waisman.wisc.edu/mchlend/)

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Executive Director: Andy Imparato

