





**Thank you and congratulations** to all those that have conducted and promoted AgrAbility Program services over the past 25 years.

*AgrAbility has led the way to enhancing economic success and wellbeing for farmers, ranchers, other agricultural workers, and their families for a quarter century. In spite of living with the effects of a wide range of disabling conditions, the program's beneficiaries have continued to contribute to American agriculture.*

*A few examples of the many AgrAbility clients include:*

- *A dairy farmer from Wisconsin with restricted mobility due to arthritis*
- *A female Christmas tree grower with a spinal cord injury from Maryland*
- *A blueberry farmer from Michigan who works from a wheelchair*
- *An African American female vegetable producer from Georgia with limited mobility*
- *An Illinois cash grain farmer who uses a modified combine to compensate for paraplegia*

*Through AgrAbility services and various forms of assistive technology, what was seemingly impossible has become possible; what was out of reach has become achievable. The program has been responsible for planting seeds of hope in the lives of tens of thousands of people across the country who refused to give up their calling to the land. With AgrAbility's help, rural communities across the country have become more physically accessible to persons with disabilities and also more welcoming to the contributions that every community member can make to the common good. Such efforts have included programs to enhance access to rural churches, libraries, fairgrounds, and businesses. AgrAbility programs have also conducted outreach to caregivers, youth involved in 4-H and FFA programs, returning veterans with disabilities, and beginning farmers.*

*Today, it is estimated that more than one million individuals engaged in agricultural production are restricted from performing essential tasks due to a physical limitation. With the average age of U.S. farmers and ranchers approaching 58, the number of those with disabilities will become even larger. The AgrAbility Program has demonstrated that it has the technical know-how to address many of the needs this population will face.*



*Again, thank you for your 25-year and continuing commitment to helping the people and communities involved in agriculture to overcome their limitations and achieve success.*

**Sonny Ramaswamy**

**Director, USDA National  
Institute of Food and Agriculture**



**T**he mission of the AgrAbility Program is to enhance quality of life for farmers, ranchers, and other agricultural workers with disabilities. For this target audience, “success” may be defined by many parameters, including: gainful employment in production agriculture or a related occupation; access to appropriate assistive technology needed for work and daily living activities; evidence-based information related to the treatment and rehabilitation of disabling conditions; and targeted support for family caregivers.



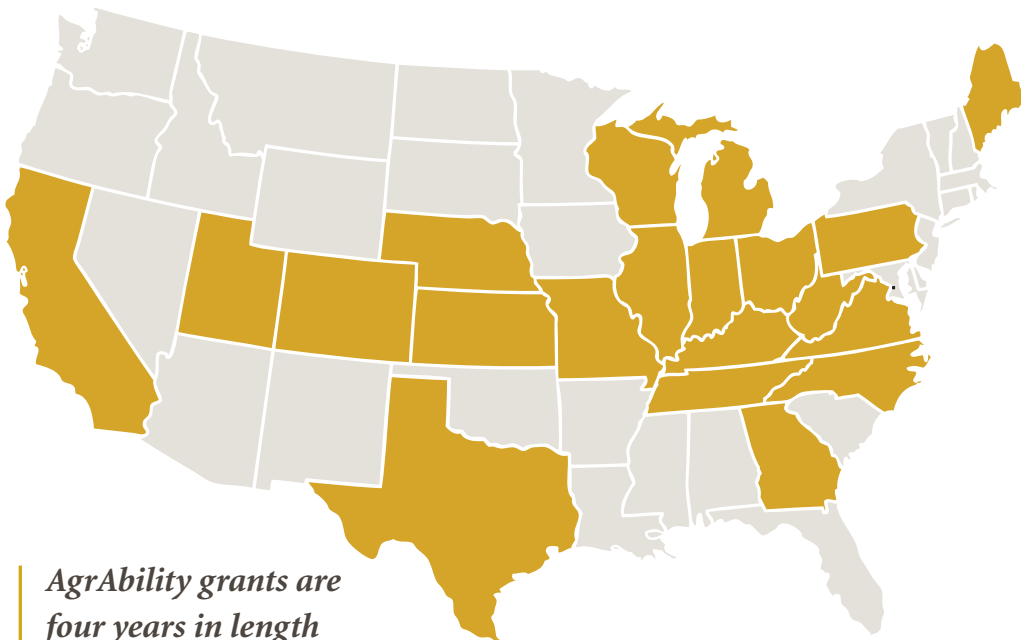


# AGRABILITY BASICS

*The Program assists workers with any type of functional limitation who are engaged in virtually any kind of agricultural operation.*

*AgrAbility was authorized in the 1990 Farm Bill and first funded through the U.S. Department of Agriculture in 1991. Known as the “Assistive Technology Program for Farmers with Disabilities,” it was modeled after similar programs in such states as Vermont, Indiana, and Iowa.*

*In its first year, USDA funded “demonstration projects” in eight states plus a National AgrAbility Project (NAP) to support them and provide limited assistance to agricultural workers in states without projects. The number of AgrAbility Projects eventually grew to 23 (covering 25 states), but due to funding reductions, there are currently 20 such projects.*



*AgrAbility grants are four years in length and are awarded competitively to 1862 or 1890 land-grant universities, which must partner with at least one nonprofit disability services organization.*

*The National AgrAbility Project grant has been held, at different times, by Purdue University and the University of Wisconsin-Madison, and their nonprofit partners have included Easterseals, Goodwill Industries, and the Arthritis Foundation-Heartland Region.*



*As AgrAbility celebrates its 25-year anniversary during 2016, we're highlighting 25 of the thousands of stories that illustrate how the program has impacted the lives of people all around the nation, and even those in other countries. You can also view these stories and related videos at [www.agrability.org/25years](http://www.agrability.org/25years).*

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## RUBY DAVIS:

### **Overcoming arthritis to promote healthy living**

“I believe if you eat better, you’re gonna be healthier. And when you’re healthier, you’re gonna want to do more. And once you get up and do, that’s gonna help you in all kinds of ways.”

So says Ruby Davis of Arlington, Georgia, who operates Ruby’s Garden, an organic garden farm that hosts a goat herd and produces vegetable crops, poultry, and eggs. Davis, a retired nurse in her mid-70s, has been limited by arthritis in her abilities to lift, open containers, and hold needed tools.

The Georgia AgrAbility team assisted Ruby with getting a “chicken tractor” – essentially a small, portable chicken coop on wheels – that she can move herself to provide fresh grass for her free-range poultry. They also helped her put up a hoop house greenhouse that enables her to keep producing vegetables after the normal growing season ends.



Ruby’s customers include a school system, a rescue mission, and several grocery stores. One of her ambitions is to travel the area and teach others how to cook healthy and economical meals.



## ERIC BECKMAN:

### **Quadriplegia didn’t keep him down**

Three generations of the Beckman family have farmed the fields of northeastern Nebraska. However, that legacy almost ended for Eric Beckman in May 2007 when he rolled his pickup truck. The trauma he sustained included a high level spinal cord injury that left him quadriplegic, with paralysis from the chest down.

However, it was not long before AgrAbility entered the picture. After being transferred to Craig Hospital in Denver, Eric was visited by a Colorado AgrAbility staff member who explained the program and available services. When he returned to Nebraska for additional rehabilitation in August, Nebraska AgrAbility began working with him.

State vocational rehabilitation (VR) agencies are key to providing assistive technologies for farmers with disabilities. However, Nebraska VR had never worked with a farmer having Eric’s level of disability. Nonetheless, his



determination convinced everyone involved that farming was still his chosen vocation. So, with VR’s help, Eric eventually acquired modifications that enabled him to operate his pickup, a power wheelchair, and a lift for accessing his farming equipment.

The day that his tractor lift was delivered was filled with joy, cheers, and tears. Eric was once again able to return to his fields. His determination, combined with essential support from his family, AgrAbility, and a host of other professionals, helped to make Eric’s dream come back to life.





## WYATT FUSS:

### **Disability can't rob this farm boy of his dreams**

Like most farm kids, nine-year-old Wyatt Fuss loves being outside, sharing in chores, and especially being around equipment. However, unlike most other youth, Wyatt has spinal cord tumors, growths on the interior lining of his spinal cord creating pressure on nerves that affect all parts of his body, including those that control breathing and swallowing. For now, the tumors are dormant, but if they begin to grow unchecked as in the past, they could literally choke him to death. Wyatt also has significantly diminished feeling in his arms and hands, which means he isn't always aware of pain from an injury. A simple task like putting on gloves is impossible without help.

Wyatt personifies the reality that disabilities can occur at any age, and AgrAbility helps farm families in any stage of life. Gloves with zippers and Velcro on the back were one solution that Michigan AgrAbility offered to help make Wyatt more independent.



There is currently no cure for Wyatt's condition. To help with research, the Fuss family started their own fundraising event – Pullin' for Kids – a farm fun day event that so far has raised nearly \$100,000. "We had to do something," Wyatt's mother Jen said. "We couldn't just sit around and cry." She added, "Having AgrAbility here to help is very comforting. It does so much more than just trying to keep us farming."

## DIRECT SERVICES

AgrAbility provides a wide variety of services (most of which are described in this publication) to clients, other professionals, and the general public, including educational activities, information/referral, and resource development. However, AgrAbility's most intensive work is known as "direct services" – visiting agriculture operations and meeting face-face with clients, their families, and professionals involved in the specific cases.

A typical site visit involves touring the client's operation, identifying barriers to productivity, and brainstorming solutions, often around the kitchen table. AgrAbility staff members must also envision future client needs, especially in cases where progressive conditions, like multiple sclerosis or rheumatoid arthritis, are involved. Often, a formal report is prepared about the site assessment, particularly if funding for equipment or modifications is being sought from the state vocational rehabilitation agency or another entity. Case management is an ongoing service and may include phone follow-up, additional visits, or referrals to other service providers, like centers for independent living. Often, injured farmers know little about social services, as they're used to relying on themselves, or they distrust "government help," or they feel lost in bureaucracy. AgrAbility's job is to guide them to a successful outcome.

Based on demographic data reports, it is estimated that AgrAbility has provided direct, on-farm services to more than 10,000 people since it began in 1991. During the past decade, AgrAbility has averaged approximately 1,300 direct-service clients nationwide per year. While client disabilities cover a broad spectrum of issues and many have incurred traumatic injuries, the data show that the most common disabling conditions are back impairments, arthritis, and other joint-related issues. Similarly, the data indicate that AgrAbility clients engage in a wide variety of agricultural enterprises, the most common being dairy, livestock, field/grain crops, hay, and vegetables.





## JOHN HANCOCK:

### Experiencing AgrAbility in all of its facets

Disability wasn't on John Hancock's radar screen as a young agricultural Extension agent in Fulton County, Kentucky. However, in the summer of 1984 at the age of 24, Hancock was involved in a motorcycle crash that left him with paraplegia.

After a period of extensive rehabilitation, John returned to work, but the course of his mission had been forever changed. In 1986, he accepted a call to work with the Breaking New Ground program at Purdue University, an early model for AgrAbility, where he learned about technologies and other accommodations for farmers with disabilities and assisted in outreach activities.

Two years later, John returned to Kentucky to share what he had learned. "People without disabilities need to become more aware of how much someone with a disability can do if he or she gets the right rehabilitation training," he said. "A farmer with a disability may do farm chores a bit differently, but what's important to remember is that he can still do them."



Soon after the USDA launched the AgrAbility Program in 1991, Kentucky won a grant to establish that state's AgrAbility Project. John began as the project's first director in 1993 and continued until injuries sidelined him in 2016.

John considers the most important part of his work to be the one-on-one assistance that he provides to farmers. "Just like I was able to return to my job, a farmer who becomes disabled can return to his farm... He may need a bit of help here and there, but for the most part he is able to grow anything from a garden to thousands of acres..."



## SHEA ROLNICK:

### New life, new hope through agriculture

Shea had an abusive childhood, living constantly in fear. As an adult, she experienced extreme anxiety and was diagnosed with PTSD. Over time, she says, "I became less and less able." However, Shea had always found comfort in animals, and they became key to her recovery. She started with six chickens and then added a small herd of dairy goats. "As my farm grew, I began to change. Being outside made me feel better."

In 2013, Maine AgrAbility visited Shea's farm. "They made several suggestions that made a huge difference in my day-to-day operations." Some implemented ideas included alternate watering methods, ergonomic redesign of the milking parlor to accommodate both her needs and the goats' varying heights, and a video surveillance system to reduce her anxiety when she isn't in the barn. Shea also

created an organized, enclosed space in her home for her farm business. "My asthma is under control and muscle spasms have almost disappeared. I continue to struggle with anxiety but I have hope, based on the vast improvements in my other health problems."

Today, Shea's farm is the center of her life, with a growing business in making and selling goat milk soap. "I am living the life that I am supposed to live. I need to farm. I need to care for animals. I need the daily physical activity that is integral in farming. This gives my life meaning and makes me feel good at the core of my being."







## MICHAEL TROST:

### **Wounds of war slow, but don't stop, beginning farmer**

On February 20, 2012, Captain Michael Trost lay face-down on a street in Robat, Afghanistan, his right thumb now missing and his legs pierced with four bullets. The shooter was a rogue Afghan officer who Michael had helped train.

It has taken more than 25 surgeries to get Michael to where he is now, and his health problems aren't over yet. However, after 32 years of military service, Michael has a new life away from the combat zone as a beginning farmer in East Tennessee. He and his wife Stephanie raise horses, donkeys, alpacas, chickens, vegetables, and hops. To help get him started, more than 100 volunteers, including other veterans, descended on their farmstead for an old-fashioned barn raising.

In 2016, Michael faced his latest battle: a below-the-knee amputation of his right leg, the result of repeated stress fractures, poor circulation, and an unsuccessful sciatic nerve transplant. However, doctors were able to use one of



his toes to reconstruct his right thumb. As a reflection of his positive spirit, Michael said prior to the operation, "I'm not losing a leg, I'm gaining a thumb."

Tennessee AgrAbility has been actively supporting Michael and his wife as they explore their new life in agriculture. They encouraged him to become a member of the Farmer Veteran Coalition and work to start a Tennessee chapter where they can be inspiring mentors to other veterans. As Stephanie says, "We are all here to serve."

## DOES AGRABILITY CHANGE LIVES?

The stories in this publication illustrate the potential for AgrAbility to help change the lives of agricultural workers with disabilities. But is this impact quantifiable and scientifically verifiable? A recent study says "yes."

Colorado State University led a nine-year study that collected data on AgrAbility customers (defined as those who had received at least one on-site visit) from 12 AgrAbility Project states. The McGill Quality of Life (QOL) survey and the AgrAbility Independent Living and Working (ILW) survey were used to measure changes in life and work quality during the time they received AgrAbility services. Their scores were later compared to those of 97 farmers/ranchers with disabilities who had never been served by AgrAbility (i.e., the no-treatment control group).

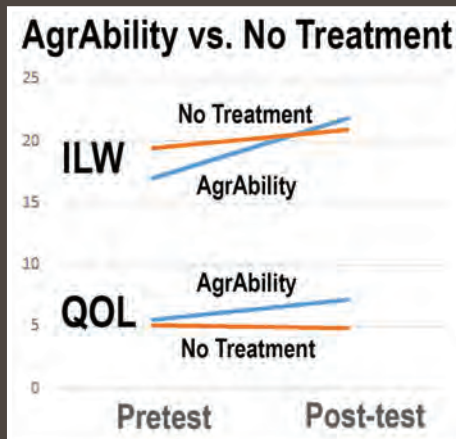
Results showed that, on average, the 199 AgrAbility customer group participants exhibited:

- Increased QOL levels of 28%, while the 97 no-treatment control group's QOL level fell by 4%
- Increased ILW levels of 29%, while the no-treatment control group increased only 8%

Among the conclusions drawn:

- QOL levels of agricultural producers who worked with the 12 state AgrAbility Projects increased by an amount that was both statistically and practically significant, while there was no statistically significant change in the QOL levels of the no-treatment control group.
- The AgrAbility group's ILW levels improved by an amount that was three times that of the no-treatment control group

From another study, it appears that AgrAbility also provides impact on financial health. Nearly 70% percent of respondents in a recent survey reported that they either "strongly agreed" or "agreed" that "...because of my involvement with AgrAbility our household income has improved."



Comprehensive  
Statistics





## **R.D. ELDER:**

### **A “hand-up” from AgrAbility helps him continue farming**

In 1983, R.D. Elder was only 19 years old when his pickup skidded on a rain-slick Illinois highway. The resulting crash caused a spinal cord injury and paralysis from the waist down. The idea of not returning to farming was never an option for R.D., but the know-how for returning was yet to be acquired.

Although his injury occurred nearly a decade before AgrAbility started, R.D. knew a fellow farmer in his county, Don Skinner, who had been paralyzed in a grain bin fall but had continued farming successfully. Visiting with Skinner gave R.D. the confidence and knowledge to construct his own version of a lift that would get him back into his tractor. Illinois AgrAbility, one of the inaugural state projects that began in 1991, was later able to help R.D. connect with Illinois Vocational Rehabilitation, which purchased for him



a commercially-manufactured lift for his tractor. This technology, and others like a utility vehicle, have enabled him to continue his successful row-crop enterprise.

“Farmers want a hand-up, not a handout. AgrAbility gives you technology resources and provides valuable information. They’re here to help and always ready to get you started,” he says.



## **MARY DUNN:**

### **Love of farming keeps her going**

Mary began full-time dairy farming in the mid-1970s, soon after returning from college to her family’s Dunndale Swiss Farms in southwestern Wisconsin. However, the pains of arthritis soon followed. Anyone familiar with dairy operations knows that the work can entail significant amounts of stooping, bending, repetitive motion, standing on hard surfaces, and walking on rough terrain. Mary’s arthritis affected her feet, knees, back, hips, and shoulders and was so severe that doctors suggested she find a new job off the farm. However, Mary’s determination kept her working through the pain.

In 1994, she got a major boost to her farming future, thanks to AgrAbility of Wisconsin. Through consultations with AgrAbility and assistance from the Wisconsin Division of Vocational Rehabilitation, she acquired essential assistive technologies to keep her in business. Among them were an



electric feed cart, an automated feeding system, extended steps and handrails for her tractors, a tracked milking system, and a utility vehicle.

Still, Mary’s trials were not over. Continued arthritis pained her to switch from dairy to beef cattle in 2010. Later, an infection resulted in the below-the-knee amputation of her right leg, and her left foot had to be fused to her leg at the ankle.

Despite these obstacles, Mary presses on in working her bull-calf operation. Her perseverance is a testimony to her love of farming, the significance of appropriate technology, and the value of AgrAbility’s ongoing assistance.





## ZANE VOLKMANN:

### **Brain injury changed his life, but not his determination**

It's hard to keep Zane Volkmann out of the saddle; even a brain injury and broken back couldn't keep him there for long. In 2012, just before his senior year in high school, the young horse trainer from New Franklin, Missouri, fell nine feet onto his head while riding at a livestock center. The impact resulted in three brain bleeds and other injuries, which kept him off horseback for six months – “the longest six months of my life,” he says.

The road to recovery wasn't easy and included such setbacks as memory loss, but Missouri AgrAbility was there to help Zane and his family from the start. After graduating from high school on schedule (and fifth in his class), he moved on to Northeastern Oklahoma A&M College, where he recently completed his third year. AgrAbility assisted Zane in obtaining funding from Missouri Vocational Rehabilitation to help defray his college expenses and worked with him on business planning for his horse training and farrier enterprises.



*Photo provided by the University of Missouri College of Agriculture, Food & Natural Resources*

“AgrAbility helps you in every aspect of your injury,” Zane says. “They drive me forward. Just because you have a brain injury, it doesn't mean you can't perform at your full potential.”

Zane is also using his traumatic experience to benefit others. Through events like University of Missouri Extension safety expos, he shares with other riders about the importance of wearing helmets while on horseback.

## SPECIAL POPULATIONS

While people with disabilities are often considered a “special population,” within the disability community there are subgroups that warrant added emphasis, often due to the need for cultural expertise in addressing their needs. For example, California AgrAbility has worked extensively with migrant/seasonal farmworkers; Minnesota AgrAbility had a focused initiative to Hmong farmers; Indiana AgrAbility conducts outreach with Old Order Anabaptists, like the Amish; and many AgrAbility Projects now have targeted services to military veterans interested in agriculture.

During the past three years, with support from USDA and organizations like the CHS Foundation and the Farmer Veteran Coalition (FVC), the National AgrAbility Project (NAP) has launched new outreach efforts toward veterans, the historically black 1890 land-grant universities, the Native American 1994 land-grant institutions, and Latino farmworkers.

To date, the National AgrAbility Project has conducted five workshops specifically for 1890 universities, training more than 200 representatives of these schools. Seventy-one representatives from 1890 universities and two from 1994 institutions participated in the AgrAbility National Training Workshop (NTW) between 2014 and 2016. The NAP has also encouraged 1890 universities to pursue AgrAbility grants, seven of which currently hold an AgrAbility Project grant or partner with their respective 1862 land-grant universities on AgrAbility Projects.

To assist veterans, AgrAbility has dedicated an entire day of training on veteran-specific topics at the 2015 and 2016 NTWs and provided travel stipends for farmer veterans to attend. In addition, partnership with the Farmer Veteran Coalition is being strengthened nationwide, as many AgrAbility staff members have been involved in FVC's conferences and are collaborating with state FVC chapters. Recently, the NAP's farmer veteran outreach coordinator was invited to provide testimony before the U.S. House Committee on Agriculture about the importance of AgrAbility and veterans in our country's food security.





## SARA CREECH:

### **Veteran finds and shares healing through agriculture**

Sara Creech served as a nurse in the Air Force from 2004-2006, including a deployment to Iraq in 2005-2006. After returning home to Florida, she struggled with PTSD, and in her words, “connecting with life again.” Sara discovered that raising vegetables was a healthy way to cope with her struggles. When her husband, who had been an Air Force pilot, was diagnosed with colon cancer, her gardening skills took on new value as they began focusing on a healthier diet.

After Sara’s husband passed away in 2011, one recurring thought was, “Go and farm.” Eventually, she purchased a farm in Indiana, where her sister lived, and started her agricultural enterprise with five chicks from a farm store. Soon, she was adding fruit trees and planting gardens. Today, her Blue Yonder Organic Farm boasts over a thousand chickens, turkeys, and ducks, plus a variety of fruits and vegetables. She has also worked with Indiana AgrAbility to improve her enterprise.



Sara relates, “I really found that getting my hands in the dirt and working with animals and seeing life come back again was just really healing and very, very powerful.” She also founded Operation Groundwork, a nonprofit dedicated to connecting other veterans with the power of agriculture to heal. “I think farming is a way to reconnect with something positive in yourself. It’s a chance to plant that seed, hatch that egg, and see new life come out of that, and it provides healing and also an opportunity to really push outside yourself.”



## MICHAEL BOLTE:

### **Progressive help for a progressive condition**

Michael, his wife Rebecca, and son Marcus raise wheat, milo, alfalfa, and soybeans, and they work a cow-calf operation in Jewell, Kansas. However, Michael has multiple sclerosis (MS). He initially contacted Kansas AgrAbility when he began experiencing trouble depressing the clutch on his tractor because of weakness in his left leg. The program connected him with Kansas Rehabilitation Services to obtain funding for a hand clutch so he could continue operating his machinery. Later, when Bolte required assistance getting into his tractors and combine, Kansas AgrAbility helped by installing a power lift that reduced from three to one the number of steps he had to climb.

As his MS has progressed, Kansas AgrAbility has continued to support Michael and his family. Most recently,

they helped him acquire a boom lift mounted on a flatbed trailer. This chair lift allows Michael to sit while getting into multiple pieces of machinery, including several tractors, a combine, and a skid-steer loader.

As his needs have evolved, so have the services Kansas AgrAbility has provided. The result: Michael has been able to continue the farming life that he’s passionate about.







## KEITH RASPBERRY:

### **AgrAbility opened his eyes to new opportunities**

Keith Raspberry is an Army veteran, retired electrician, and now a successful beginning farmer. On his Hickory Hill Farms in suburban St. Louis, he raises, processes, and markets poultry.

In addition to all the challenges of livestock production, Keith must daily face another battle: transverse myelitis, an inflammation of the spinal cord that can cause severe pain and limited mobility. Keith indicates that this condition “left him like an infant for about six months,” in that he had to relearn how to walk, talk, dress, and feed himself.

His poultry operation requires bending, stooping, and lifting to move his portable chicken coops over several acres of uneven terrain twice daily. He also has to scoop manure despite muscle aches, joint stiffness, lack of stamina, and sensitivity to heat and cold.

The Missouri AgrAbility Project has been helping Keith learn and implement more efficient and effective methods to make his job less painful. For example, AgrAbility’s



customized farmstead assessment indicated the need for mobility devices, farm implements, water lines, and fences to reduce physical barriers and the chances of secondary injuries. AgrAbility also provided opportunities for him to network with other underserved farmers through events, such as the AgrAbility National Training Workshop and Missouri’s beginning farmer/veteran conferences.

“I would say to any farmer that has not experienced AgrAbility, you need to get up, open your eyes, and take a look. AgrAbility has helped every farmer that I have spoken to tremendously... With AgrAbility, and a little will [of your own], you’ll be able to go a long way.”

## EDUCATIONAL OUTREACH

Not all of AgrAbility’s efforts are focused on direct, one-on-one services. Part of the AgrAbility mission is to educate our consumers on relevant topics and to develop capacity among professionals for meeting the needs of agricultural workers with disabilities. This may involve such things as training new AgrAbility staff members on how to conduct worksite assessments, teaching vocational rehabilitation counselors – who might be accustomed to getting clients into desk jobs – about agriculture so they can serve farmers and ranchers with disabilities, or educating farmers about niche markets, like organic produce, that might better fit their abilities.

AgrAbility’s educational efforts take many forms. Some projects conduct one-day workshops that include multiple topics (such as Colorado AgrAbility does at its annual winter workshop series) or that focus on specific issues like arthritis or caregiving. They give presentations to rehabilitation professionals and other groups on AgrAbility-related topics. Others produce webinars to reach remote audiences. The National AgrAbility Project and some state projects produce publications and other resources on topics related to disability in agriculture.

The largest of AgrAbility’s educational events is the annual National Training Workshop. This four-day conference is usually hosted by a state project and sponsored by the National AgrAbility Project. In recent years, attendance has averaged around 220, including about 50 farmers, ranchers, and caregivers who receive travel stipends raised from external sources. The agenda features plenary and breakout sessions, tours of agricultural enterprises and rehabilitation facilities, and special speakers, like Temple Grandin, renowned animal behaviorist and autism advocate.





## ED BELL:

### Adapting through fiery trials

In his own words, Ed Bell of Hagerstown, Indiana, is “a man of many hats”: family man, farmer, motivational speaker, consultant, and more. But he has also been a man of many trials, such as the incident in 1982 when he was attacked and shot, resulting in a spinal cord injury and paralysis just below his arms. He and his family also endured a fire in 1995 that destroyed their home.

However, Ed has learned the art of adapting, and his challenges have resulted in strength rather than despair. When paralysis ended his goal of raising hogs, he switched to strawberries, which as he says, “are easier to handle and better smelling.” Later, he added asparagus and Doberman puppies to his list of enterprises. The Bells were also able to replace their old log home with a new accessible one.

Today, the Bells’ operation continues to thrive. They were named Indiana Farm Family of the Year in 2006, and Ed was one of 17 featured farmers during the 2015 Indiana State Fair. Not only has Ed succeeded in agriculture, but



he is also a nationally-recognized speaker, representative for the Standing Wheelchair Company, and consultant for AgrAbility.

Ed says of AgrAbility’s impact on his life, “They’ve showed me that I may not be ‘normal,’ but I’m average. I’m an average farmer, and I just happen to have a disability; I can still work and support my family in agriculture.”

## TIM AND COLBY LEHMAN:

### Growth disorder didn’t quench their success

Brothers Tim and Colby Lehman are dairymen on their family farm in Chamberburg, Pennsylvania. Their work is physically demanding, requiring long hours in the milking parlor multiple times a day in addition to barn cleaning and a variety of outdoor tasks. Added to their challenges are their smaller sizes: 48” and 46” respectively, due to Dyggve-Melchoir-Clausen (DMC) syndrome, a rare genetic bone disorder.

Since their parlor is pit-type (where workers stand several feet below the cows), the Lehmans had to repeatedly climb on and off stools to attach and detach milking units. This caused concern about safety and long-term joint complications related to DMC.

To assist, AgrAbility for Pennsylvanians worked with state Vocational Rehabilitation to engage Life Essentials, an

assistive technology company, which custom-made powered trolleys mounted to rails that were installed on both sides of the parlor. Now the Lehmans can glide the length of the parlor at cow-level height without repeatedly mounting and dismounting stools. Also acquired were automatic take-offs for the milking units and power-operated steps to enter and exit the milking parlor.



“We are so grateful to AgrAbility for Pennsylvanians’ involvement in helping us identify equipment and modifications that make a huge difference for the boys,” said their mother Tina Lehman. Their father Lester added, “We wanted to provide a career opportunity for them so that as they mature, they will have a place to use their time and talents. We feel truly blessed to have this farm, and blessed to watch our sons become men.”





## INTERNATIONAL IMPACT:

### AgrAbility reaches out to the world

Sam Mathew was born in India but came to the U.S. and eventually became a vocational rehabilitation counselor and later an AgrAbility staff member. When he earned his Ph.D. at Purdue University and felt the call to return to India, he didn't leave AgrAbility behind. Now the executive director of India's National Institute of Speech and Hearing, Sam recently collaborated with the National AgrAbility Project to train more than 80 rehabilitation professionals in India on low-cost assistive technology that could be fabricated locally.

This is just one example of AgrAbility's international outreach. In all, AgrAbility staff members have provided training in more than 10 countries, including Australia, Denmark, Finland, Italy, Sweden, and Ukraine. Recently, a workshop on returning injured farmers to work was conducted for over 20 vocational rehabilitation counselors in Provoo, Finland. Also, information and onsite consulting were provided to a Swedish fabricator who has modified



more than 15 pieces of off-highway equipment, such as a back hoe, log skidder, and combine, for an eighth-generation dairyman who continues to farm with paraplegia. In addition, on-site consulting services were provided to a young farmer from Wales who now operates a modified tractor, allowing him to return to farming after a spinal cord injury.

Disability crosses all divides – international, political, racial, religious, cultural, economic – and has a profound impact on those exposed to the hazards associated with agricultural production. While AgrAbility can't address all potential barriers, it can provide a measure of hope and help when disability occurs.

## RESOURCE DEVELOPMENT

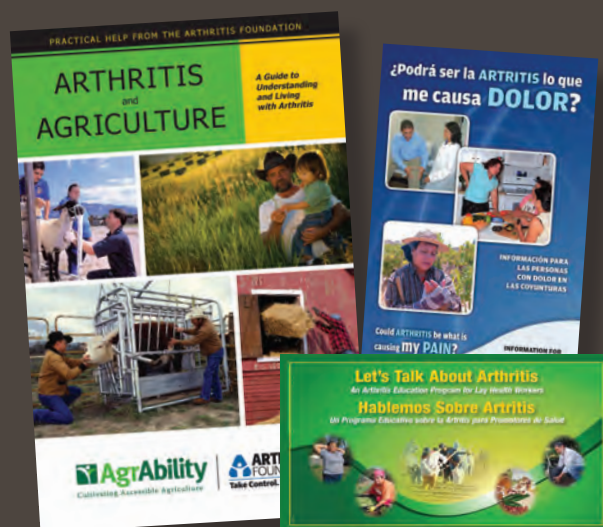
Part of AgrAbility's rich legacy over the past 25 years is an extensive body of tangible resources – lasting products that can impact broad audiences for extended periods of time. These have taken many forms, including brochures, fact sheets, technical articles, videos, CDs, and training manuals.

One example is the booklet *Arthritis and Agriculture*, developed through a collaborative effort between AgrAbility and the Arthritis Foundation. To date, 90,000 copies have been printed, many of which have been distributed through venues like farm shows and conferences.

The subject matter and format for a given resource must be tailored to its intended audience, which often calls for innovative thinking. Such was the case when the National AgrAbility Project, Indiana AgrAbility, California AgrAbility, and the Arthritis Foundation wanted to re-create *Arthritis and Agriculture* for migrant/seasonal farmworkers with lower literacy levels. The result was a Spanish language fotonovela, a genre popular with this audience and similar in format to a comic book. Similarly, Missouri AgrAbility developed a highly pictorial flip-chart resource for use by those teaching migrant/seasonal farmworkers about arthritis.

Sometimes the audience for AgrAbility's resources is the staff members of our own state projects. For example, because worksite assessments are so integral to the AgrAbility mission, the National AgrAbility Project developed an extensive guide to this topic, complete with replicable forms for use when conducting site visits.

AgrAbility's audiovisual efforts have evolved over the past quarter century from slide-tape presentations to sophisticated video productions available online and via DVDs. One of the most recent efforts is a video about integrating military veterans into agriculture, titled *The Next Mission: Breaking Down Barriers for Veterans in Agriculture*.



## **ROSENDO RAMIREZ:**

### **Ingenuity, perseverance, and AgrAbility help overcome amputation**

Rosendo Ramirez is a farmworker in California. He had specialized in picking fruits and vegetables until an accident in 2001 resulted in the amputation of his right arm. Knowing that he wouldn't be able to pick at an acceptable rate, he devised a way to hold a hoe and made his living hoeing weeds in the tomato, onion, and watermelon fields of Northern California.

When CalAgrAbility met Rosendo in 2013, he was exploring options for a prosthetic arm, but cost estimates of \$20,000 disheartened him. However, CalAgrAbility connected him with a prosthetics company that provided pro bono work to help Rosendo get a prosthesis made and fitted.

With his new arm, Rosendo is able to pick watermelons efficiently and hold a knife safely when harvesting onions. Now working as a foreman, he's very conscious and active



in enforcing safe work practices with his crew. Furthermore, he has started his own farm, La Autentica Semilla. In 2015, CalAgrAbility facilitated Rosendo's and his wife's attendance at the Latino Farmer Conference in Fresno, where they learned about resources to help them continue to thrive in agriculture.

## **TERRIE WEBB:**

### **A blooming career with help from AgrAbility**

Factor V Leiden, a mutation of one of the clotting factors in the blood, is a condition that few people have ever heard of. In fact, Terrie Webb of Hopewell, Virginia, was unaware that she had it until a stroke impaired her right arm, initially causing near-total debilitation. Although surgery and therapy restored limited mobility, she was not able to function without great discomfort.

Terrie had just begun a commercial cut-flower business and was in need of assistance to keep the enterprise alive. That's when she turned to Virginia AgrAbility, which partnered with Virginia State University Cooperative Extension, the Woodrow Wilson Rehabilitation Center, and the Virginia Department of Rehabilitation Services. They assisted her in making tool adaptations to better accommodate her hand,



developing better work postures, and implementing more effective planting and cultivating techniques. These allowed Terrie to foster what has become a successful and expanding agricultural enterprise.

"I would not be able to conduct my business without AgrAbility's involvement," she says. "I did not know the sources and resources to get the help I needed to assist me in being able to do my work until AgrAbility helped me out."





## 

### Man's best friend is prescription for independence

Having lived on a farm most of her life, Jackie Allenbrand knew from personal experience the value of dogs in agricultural settings. However, it was as a staff member for Missouri AgrAbility that she first realized the unique potential for canines to assist farmers with disabilities. In working with a farmer who had experienced a lower leg amputation, Jackie saw that he would drive his ATV to the location of his cattle and then have his dog bring in the herd, saving him time, effort, and the potential for secondary injury.

This inspired Jackie in 2005 to start PHARM Dog (Pets Helping Agriculture in Rural Missouri), an organization she has since spun off as an independent nonprofit. Her dogs fall into two main categories: herders (mostly Border Collies) and service dogs (usually Labrador Retrievers rescued from shelters). The latter perform a variety of tasks, such as retrieving objects, providing mobility assistance for



Alda Owen with her PHARM Dog. Photo by Amy Stroth for Tractor Supply's Out Here magazine.

farmers with impaired balance, or going for help if they are unable to summon assistance.

In addition to the practical assistance they receive, PHARM Dog recipients have indicated lower levels of depression and stress, and traumatic brain injury survivors have shown less nausea and dizziness. Jackie says she has seen tough farmers begin to cry when they get their dogs. One stated, "This dog is going to help me keep my cattle, whereas I might have had to sell them."

## ASSISTIVE TECHNOLOGY

Assistive technology (AT) is often critical in returning agricultural workers with disabilities to their livelihoods. AT can be any product, or system of products, that maintains or improves the functional capacity of a person with a disability. These devices range from simple tools, like an ergonomically designed shovel, to complex equipment, such as a stand-up wheelchair.

While most AgrAbility clients can benefit from AT, such devices cannot be purchased through AgrAbility grant funds. Therefore, AgrAbility staff members utilize alternate funding sources, especially state vocational rehabilitation (VR) systems, which are charged with providing equipment, modifications, and training to help keep people with disabilities employed. Other entities, like the Veterans Administration, state Assistive Technology Act programs, and private foundations can also assist in acquiring needed equipment.

Many farmers and ranchers are also ingenious in coming up with their own AT solutions. In such cases, AgrAbility staff can provide guidance about ensuring the safety of these devices. In some cases, local machine shops and even student engineers can be called on to help develop customized AT.

To help locate needed tools and equipment for farmers and ranchers with disabilities, AgrAbility has used various formats to catalog assistive technology solutions. Beginning with binders containing fact sheets, the Breaking New Ground Resource Center at Purdue University began distributing consolidated AT information in the mid-1980s. After several such print publications, the distribution medium switched to CDs and ultimately Internet databases. Today, *The Toolbox Assistive Technology Database Online* ([www.thetoolbox.info](http://www.thetoolbox.info)) provides information on more than 1,250 assistive products to a worldwide audience. Product pages include descriptions, photos, supplier contact information, and links to video clips (when available).



## **GREEN THUMBS, HEALTHY JOINTS:**

### **Powerful results through accessible gardening**

Gardening is one of America's most popular hobbies and a significant food source for many. However, for those with arthritis and other musculoskeletal conditions, like osteoporosis, common gardening tasks can be difficult or impossible. That's why, in 2007, West Virginia AgrAbility partnered with the West Virginia Assistive Technology System, with funding from the West Virginia Bureau for Public Health, to establish Green Thumbs, Healthy Joints (GTHJ), a program to establish accessible gardens in their state.

Each year, GTHJ awards grants to nonprofits for gardening projects to cover the costs of raised beds, accessible walkways, benches, and other adaptive features. The requesting groups are required to spend part of the money on assistive technology that can make gardening tasks easier, like

ergonomic tools, knee pads, gloves, garden stools, and carts.

Since its inception, GTHJ has funded more than 120 projects in West Virginia communities, with groups having created accessible gardens at senior centers, homeless shelters, low-income housing complexes, public parks, and community centers. "The seniors are now enjoying fresh salads to go along with their lunches," said one group. To date, 75% of counties in the Mountain State have had at least one project.

Volunteers are the heart of the program. In 2015, projects reported that 323 volunteers donated 2,882 hours of community service. One project shared the story of a volunteer whose self-esteem thrived as she learned to grow vegetables in the garden: "As her plants bloomed, she began to bloom as well."



## **DUSTIN FRANKLIN:**

### **Joint pain didn't mean the end of farming**

Fourth generation farmer Dustin Franklin has been actively involved with farming since he was six years old and has always wanted an agricultural lifestyle. However, because of the combined effects of rheumatoid arthritis, osteoarthritis, and compressed discs in his back from decades of heavy lifting, he was afraid his custom hay-cutting business would have to end. He endured tremendous pain each time he rode in his tractor or performed needed farm tasks. In searching for alternate ways to continue farming, he heard about Colorado AgrAbility.

An occupational therapist from AgrAbility visited Dustin and his family at their farm to provide a no-cost worksite assessment and make recommendations for modifying his equipment and work practices. AgrAbility then partnered with the Colorado Division of Vocational Rehabilitation

(VR) to make changes to the Franklins' farming business. The technologies VR provided included extra steps for Dustin's tractors, extended mirrors to reduce the need for him to rotate in the tractor seat, automatic hitches for his balers, air-ride swivel seats for a smoother ride and to make tractor entry and exit easier, and a utility vehicle for safer and more efficient transport on the farm. The AgrAbility/VR collaboration has, for this family, meant the difference between remaining in farming or leaving their beloved way of life. Dustin says, "AgrAbility gives a new-found hope for that person looking for what they need...I am a better person for getting their help and will talk to anybody about AgrAbility and help them get the help I have gotten."



Video of Dustin







## JOHN ENNS:

### Disability didn't keep him from agriculture or the state house

In 2004, John Enns was a full-time rancher/farmer, as well as a microbiology teacher at Northern Oklahoma College. However, on April 21 of that year, a piece of farm machinery that he was operating flipped over on him, causing a spinal cord injury and paralysis at the waist.

Months of rehabilitation were hard for John, especially being “cooped up” inside instead of out on his farm. However, he was soon in touch with Oklahoma AgrAbility, which helped him overcome obstacles that kept him from his livelihood. With assistance from Oklahoma Vocational Rehabilitation, he acquired lifts and hand controls for his tractor and truck, an all-terrain scooter, and other important technologies. John said, “Now I can get into the tractor; I can go out and do field work...which, it's one of those things, it's almost like therapy for me. You get out there and you feel like, ‘Hey, you know what, I'm back home.’”



John didn't stop with a successful return to agriculture. In 2006, he ran for and won the District 41 seat in the Oklahoma House of Representatives. Currently in his fifth term, he is chair of the agriculture and rural development committee, and serves on three others, including veterans and military affairs.

## INTERNET IMPACT

When AgrAbility began in 1991, few imagined the impact the Internet would have on our world – in fact, most had never even heard the term “Internet.” However, as the Web began exploding into a viable communication channel, AgrAbility took advantage of it to promote its mission.

Today, every funded AgrAbility project has its own website, and many have expanded into other realms of Internet impact, including social media and webinars. Since 2009, the National AgrAbility Project (NAP) has conducted over 50 webinars and has held several multi-day online conferences. The NAP website, [www.agrability.org](http://www.agrability.org), receives approximately 7,000 visits and 4,500 unique visitors per month. To keep pace with changing technology trends, the site was recently converted to a mobile-friendly format that allows for easy use on such devices as tablets and smartphones.

Since the USDA currently only has enough funding for 20 state AgrAbility Projects, agricultural workers in the 30 states without projects can still have access through the Internet to resources and information related to accommodating disabling conditions. And they can use the NAP web portal to request specific guidance on their given situations.

While the Internet cannot replace the personal, onsite communication so important to adequately addressing the specific needs of farmers and ranchers with disabilities, it can provide education, networking, and marketing in a cost effective manner that can reach those not only in the U.S. but also other countries. Indeed, during 2015, the NAP website received traffic from more than 80 countries, with the heaviest international traffic coming from such nations as Canada, Australia, and South Africa.





## DELILAH WILLIS:

### Teen with entrepreneurial vision not stopped by blindness

When she was in 8th grade, Delilah Willis of Hampshire County, West Virginia, went on a school field trip that would shape her future. While visiting a swine facility, she “decided right then I wanted to raise pigs.”

Delilah, who attends the West Virginia Schools for the Deaf and the Blind, was born with detached retinas, scoliosis, and hearing loss in her right ear, for which she now uses a bone anchored hearing aid (or BAHA).

Now 16 and a member of FFA, Delilah raises pigs for both show and processing. This year, she showed her pigs at the county fair and received the Grand Champion Bacon Award. To facilitate her success, Delilah has developed her own techniques for handling pigs in competition, such as putting a marshmallow on the tip of her show cane to attract the pig, which she can then drive forward.



Delilah is working with West Virginia AgrAbility and the state’s Division of Rehabilitation Services to achieve her goals. After graduation, she plans to run her own swine handling facility and become a pork products vendor. She has already obtained her commercial vendor’s license and is poised to sell her goods under the brand name *Delilah Willis Pork Products*.



## LIFE ESSENTIALS:

### Technology and inspiration to keep farmers working

In 1943 at the age of five, Hubert Von Holten contracted polio. However, his physical limitations didn’t stop him from becoming a successful business owner, inventor, and entrepreneur. He was also a farmer, growing approximately 450 acres of corn and soybeans. While he could accomplish most farm tasks without help, the machinery was getting taller and more difficult to climb. So, in 1975 at his Round Grove Machine Shop, Hubert built a platform lift to raise himself to the cab of his combine. That was the start of Life Essentials.

News spread about Hubert’s work, and he was soon collaborating with the Breaking New Ground program at Purdue University and producing lifts for other farmers. Today, Hubert and his staff travel all over the U.S and Canada installing lifts on tractors, combines, berry pickers, bulldozers, tree harvesters, and many other machines.

In all, Life Essentials has put lifts on over 3,500 pieces of equipment. They also produce and install technologies to get people on horses, into airplanes, and onto recreational equipment.

The impact of Life Essentials reaches far beyond machinery: it really deals in changed lives. When Hubert meets with clients, his disability is not a barrier but a bridge – an example to show that their life isn’t over and that they can still do the things they did before, just differently. When accessing their equipment for the first time since their injury, his clients return to a world they thought they had lost forever.







## **JOE THOMPSON:**

### **Joint impairments help spur innovation**

A number of factors moved Cedar Grove, North Carolina, farmer Joe Thompson out of tobacco production, including government pressure to produce other commodities. However, problems with his joints from years of hard work were also a major motivation. He had endured back impairments since 1987, undergone a hip replacement in 1995, and most recently had knee replacement surgery in 2016. Such issues also motivated him to seek help from North Carolina AgrAbility.

Joe's choice to raise prawns (which are large shrimp-like crustaceans) was partly because it's less physically demanding and partly because it's "something that someone else wasn't doing." So he dug a nine-foot-deep, two-acre pond and filled it with 15,000 juvenile prawns. He also remodeled an old tobacco barn to use for storage and freezer space and

even engineered his own portable icemaker for keeping harvested prawns fresh.

North Carolina State Extension helped Joe with marketing and advertising efforts and with identifying potential customers like high-end restaurants, grocery stores, and local markets. He also sells on-farm to the general public.

Joe's entrepreneurial inclinations have paid off. He has expanded to multiple ponds, harvests several thousand pounds of prawns per year, and was awarded the 2010 Gilmer L. and Clara Y. Dudley Small Farmer of the Year Award from North Carolina A&T State University.



## **JAMES JEFFERS:**

### **Veteran finds next mission in urban agriculture**

After nine years of active duty in the Army, including two tours in Iraq, James Jeffers came to realize that he needed a career change. Recurring health issues, including the aftermath of traumatic brain injuries, were taking their toll, so he opted for medical retirement. Shortly afterward, in an effort to "fix" his system, he began eating healthier and learning about organics. Motivated by fellow veteran Steve Smith, James tilled up his back yard and began gardening. "It was everything I needed. It was physical therapy. It was mental therapy. I was learning something new every day."

When opportunities opened up to sell produce to local restaurants in the Dallas area, he and Smith founded Eat the Yard, an urban agriculture enterprise. Their "farms" include plots at residential and commercial properties, community gardens, and even a few rooftops. Their crops consist of various kinds of produce, primarily leafy greens.



As Jeffers and Smith saw fellow veterans being lost to suicide, they decided to expand beyond their commercial operation to create FARM – Farmers Assisting Returning Military – a nonprofit to assist veterans at risk of suicide, homelessness, or chemical dependency. Vets work on the farm and receive in-house therapy. FARM also collaborates with Texas AgrAbility.

"I think farming is a great option for veterans because... we are not afraid of hard work. And we won't quit. It's good meaningful work, and it's also the next mission."

*"Farmers want a hand-up, not a handout. AgrAbility gives you technology resources and provides valuable information. They're here to help and always ready to get you started."*

**R.D. Elder**  
Illinois Farmer

*"Through AgrAbility services and various forms of assistive technology, what was seemingly impossible has become possible; what was out of reach has become achievable."*

**Sonny Ramaswamy**  
Director, USDA  
National Institute  
of Food and  
Agriculture

*"Over half of the 8,000 veterans that have come to Farmer Veteran Coalition for our help have service connected disabilities. AgrAbility is an absolutely essential partner for us in getting the tools these deserving men and women need in order to become successful farmers."*

**Michael O'Gorman**  
Executive Director,  
Farmer Veteran  
Coalition

*"I would not be able to conduct my business without AgrAbility's involvement. I did not know the sources and resources to get the help I needed to assist me in being able to do my work until AgrAbility helped me out."*

**Terrie Webb**  
Virginia Flower  
Producer

*"AgrAbility has an important role when it comes to providing assistance to our disabled veterans when they come home and decide to enter into farming and ranching."*

**Lanon Baccam**  
USDA Deputy  
Under Secretary for  
Farm and Foreign  
Agricultural Services  
and Military Veterans  
Agricultural Liaison



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**www.agrability.org**



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