AgrAbility

New Staff Training

AgrAbility NTW

March 25, 2019

Lincoln, Nebraska

National AgrAbility Project
Purdue University

Session Overview

- Overview of National AgrAbility Project (NAP)
  - History
  - Goals
  - Structure
  - Services
  - Personnel
  - Resources

Whom Does AgrAbility Serve?

AgrAbility addresses a wide variety of **functional limitations** in agriculture, including, but not limited to:

- Amputation
- Arthritis
- Back impairment
- Deafness/hearing impairment
- Development disabilities, such as cerebral palsy or autism
- Disabling diseases, such as cancer or heart disease
- Mental/behavioral health problems
- Respiratory diseases
- Spinal cord injuries
- Stroke
- Traumatic brain injury
- Visual impairments

Importance of staying with your realm of expertise!

Disability within the Agricultural Community

- Causes of disability
  - Traumatic injury (agriculture is one of the most hazardous occupations). Many injuries also come from off-farm incidents.
  - Disease & chronic conditions
  - Aging (Average age of U.S. farmers is 57+)
- Prevalence of disability
  - Approximately 15-20% of farm population impacted by disability
  - 1.04 – 2.23 million of the U.S. farm, ranch, and agricultural community impacted by disability

Whom Does AgrAbility Serve?

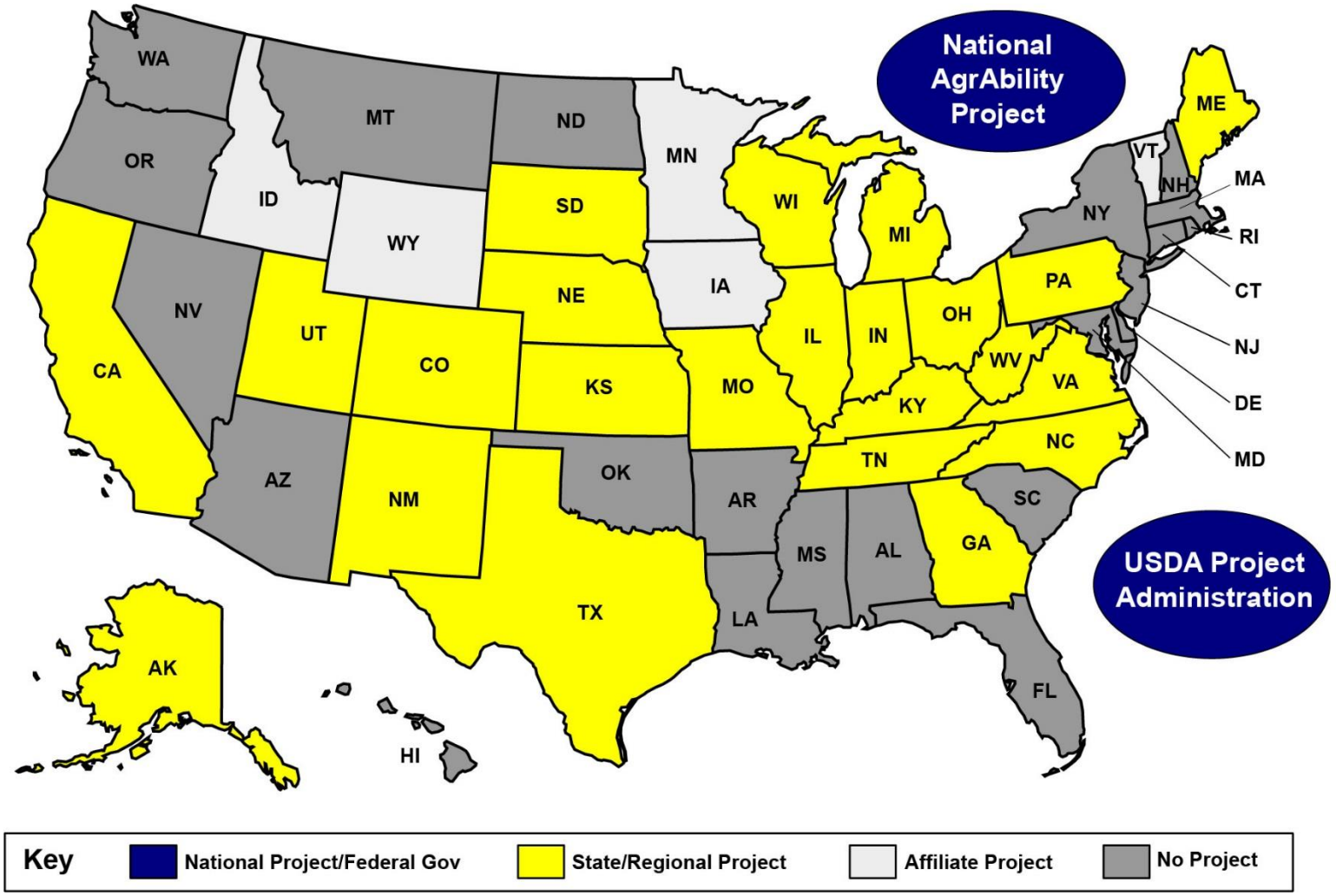
Just as disability is wide continuum, agriculture is also:

- Row crops: corn, soy, wheat, cotton, etc.
- Ranching
- Sheep and goats
- Dairy
- Produce, including organic
- Orchards
- Agritourism
- Niche markets, like llamas, herbs, etc.
- Floriculture
- Aquaculture
- Hydroponics
- Aquaponics

AgrAbility History

- AgrAbility began in 1991 as part of the USDA Cooperative State Research, Education, and Extension Service (now NIFA)
- In 1991, there were 8 funded state and regional AgrAbility projects (SRAPS); as of 2019, there are 20 SRAPs and several previously-funded affiliate projects
- One National AgrAbility Project (NAP) supports the SRAPs

AgrAbility Projects 2019



AgrAbility Partnerships

- All AgrAbility projects – state projects and the national project – are partnerships between a land-grant university and at least one disability-services program.
- 1862 and 1890 land-grant institutions are eligible to apply for AgrAbility grants.
  - Current 1890 grant holder = North Carolina A&T
  - 1890 institutions are partners with 1862 institutions in at least 6 other states.

Current NAP Partners

- Breaking New Ground Resource Center, Purdue University (lead organization)
- Goodwill of the Finger Lakes (NY)
- APRIL (Association of Programs for Rural Independent Living)
- Colorado State University (evaluation specialists)
- Washington State University (evaluation specialists)
- Consultants
- Many unfunded partners: FVC, RESNA, FFA, etc.

AgrAbility Services/Priorities

- Education
  - Workshops; resource development; online education
- Networking
  - Leveraging efforts with other groups; peer support
- Direct Assistance
  - Site visits; consultations; business planning
- Marketing
  - Publics awareness activities and materials

AgrAbility

Special Responsibilities of the NAP

- Provide support to the state and regional AgrAbility Projects
  - Training
  - Resources
  - Consultations with NAP specialists
- Provide limited direct services to customers in states without AgrAbility projects

What Does AgrAbility Not Provide?

- Funding
- Equipment
  - Most funding for assistive technology comes through state vocational rehabilitation systems
  - Other sources of grants and loans are available (www.agrability.org/funding-assistance/)
  - Some state Assistive Technology Act projects can provide free or low-cost AT + loan programs

What if Your State Doesn't Have an AgrAbility Project

- Can still get technical support from the National AgrAbility Project
- Resources available at www.agrability.org
- Encourage your state's land-grant university(s) to apply for an AgrAbility grant
  - RFA process open now
    - Deadline = Thursday, May 9

Resources for Farmer/Ranchers with Disabilities in All States

- State Vocational Rehabilitation (VR) Agencies
- U.S. Department of Veterans Affairs
- Centers for Independent Living
- State Assistive Technology Act Projects
- Cooperative Extension
- USDA
  - FSA
  - NRCS

Questions?

NAP Key Personnel

- Bill Field, Project Director
  - Founder of Breaking New Ground
  - Overall project oversight
  - Liaison with USDA

NAP Key Personnel

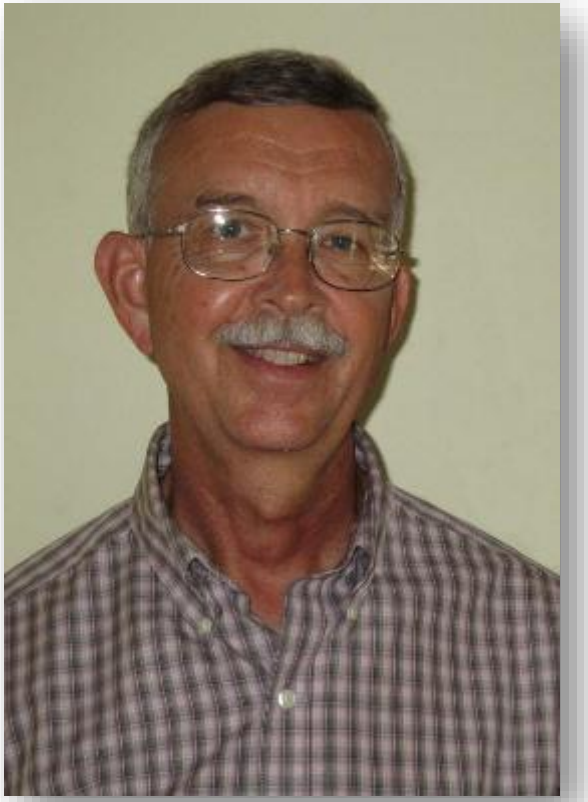
- Paul Jones, Project Manager
  - Management of daily activities
  - Resource development

NAP Key Personnel

- Steve Swain, Assistive Technology Specialist
  - Toolbox process
  - Liaison with RESNA

NAP Key Personnel

- Chuck Baldwin, Special Populations Outreach Coordinator & Demographic Data Specialist
  - Networking with 1890 and 1994 land-grant institutions, Latino farmworker organizations, others
  - Coordinates demographic data collection process



NAP Key Personnel

- Cindy Chastain, Veteran Outreach Coordinator
  - Outreach to veterans with disabilities interested in agriculture and organizations that serve them

NAP Key Personnel

- Shawn Ehlers, Technology Outreach Coordinator
  - Advancing and modernizing resources related to assistive technology and safe working practices, development and instruction of training and outreach material, and providing technical expertise

NAP Key Personnel

- Sean Tormoehlen, Graduate Student
  - Focusing on issues of aging and their relationship to farm safety and AgrAbility

NAP Key Personnel

- Richard Fox, Information Technology Specialist
  - Maintenance of NAP web site and assistive technology database

NAP Key Personnel

- Goodwill of the Finger Lakes
  - Promotion of the Goodwill/AgrAbility partnership
  - National Training Workshop
  - Regional workshops
  - 24-hour call center

JoBeth Rath

Tess McKeel

NAP Key Personnel

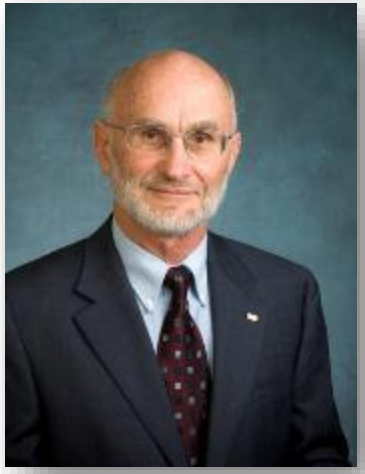
- APRIL (Association of Programs for Rural Independent Living)
  - Promotion AgrAbility resources to CILs
  - Connecting CILs and SRAPs
  - Outreach to rural youth with disabilities

Billy Altom

Sierra Royster

NAP Key Personnel

- Evaluation Team
  - Objective analysis of NAP activities
    - Annual staff needs assessment
    - Demographic data
    - Quality of life evaluation



Bob Fetsch, Colorado State University

Brian French Washington State University

Consultants

- Steve Etheridge
  - Vocational rehabilitation issues
  - Former VR counselor

- Carla Wilhite
  - Occupational therapy issues
  - Professor at University of New Mexico and former AgrAbility staff member

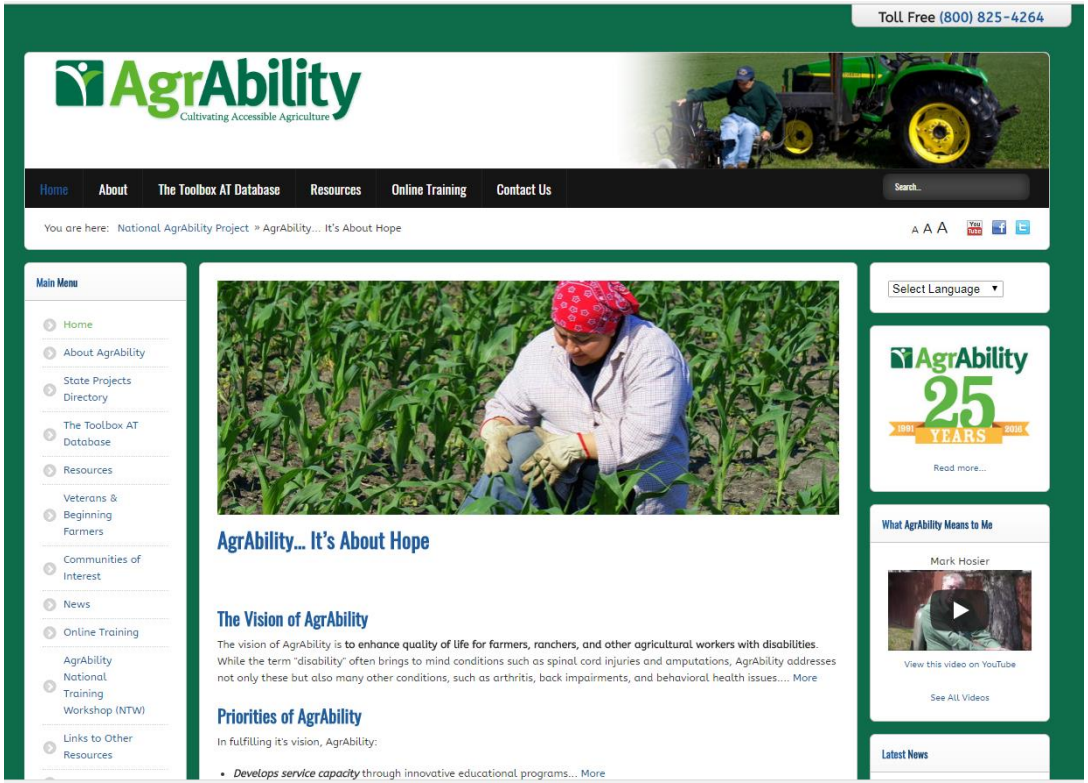
Consultants

- Ed Bell
  - Farmer
  - Former AgrAbility client
  - Public speaker

Questions?

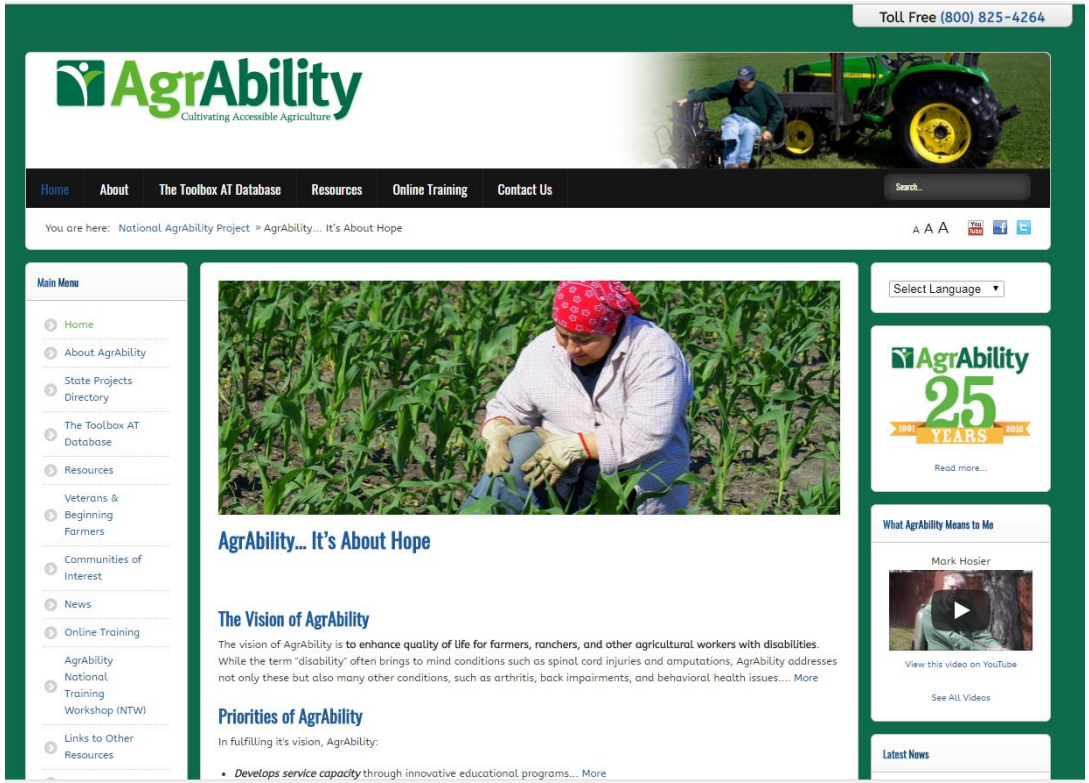
Educational Resources: www.agrability.org

- Project information and contacts
- Downloadable resources
- Online training
- Mobile friendly
- Tour



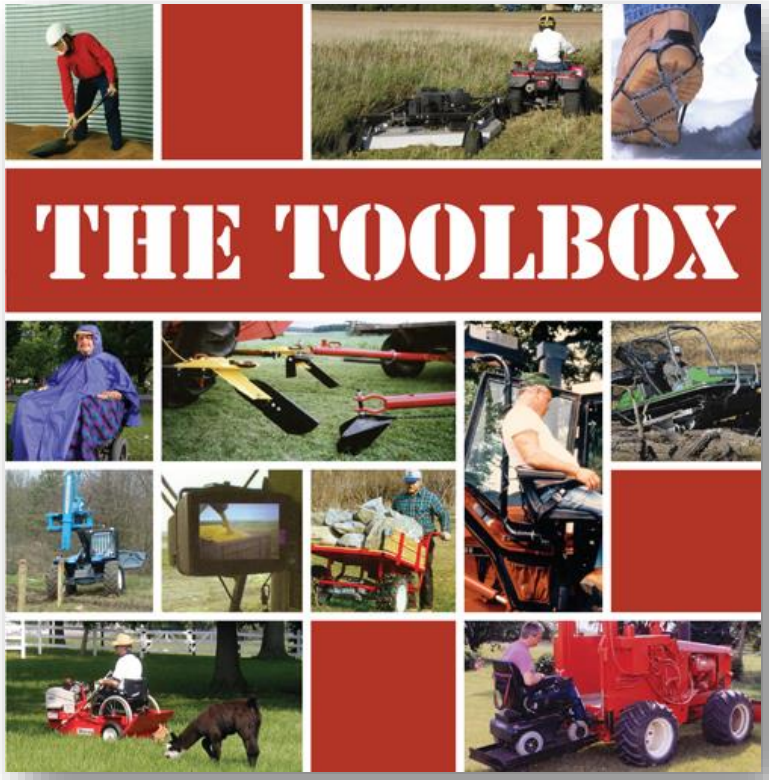
Educational Resources: www.agrability.org

- Staff extranet: marketing, evaluation, staff resources
  - **Logos**
  - Demographic summaries
  - All-staff meeting archives
  - Photo library

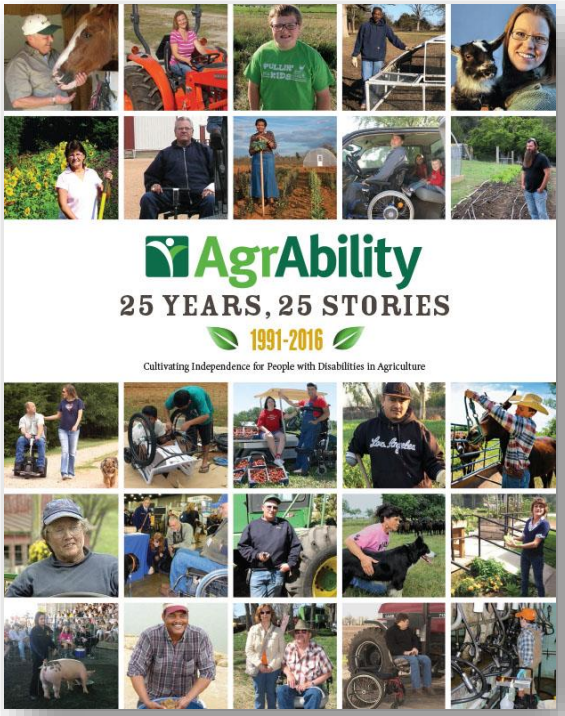


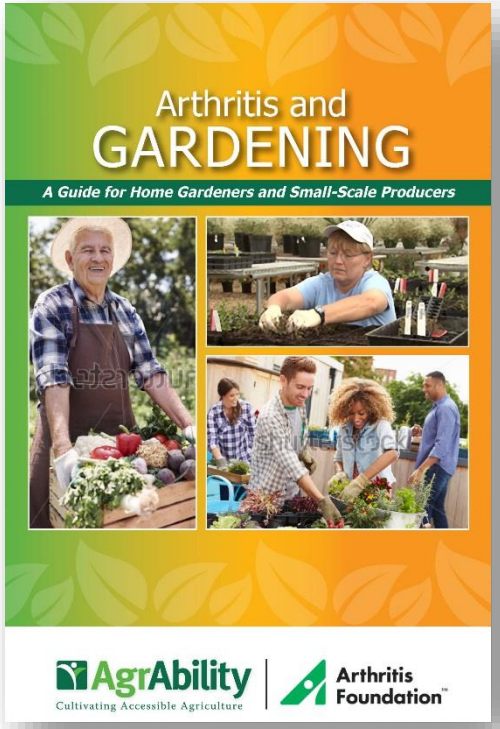
The Toolbox Assistive Technology Database

- Print, CD, and web versions www.agrability.org/Toolbox
- 1503 products to help farmers and ranchers with disabilities



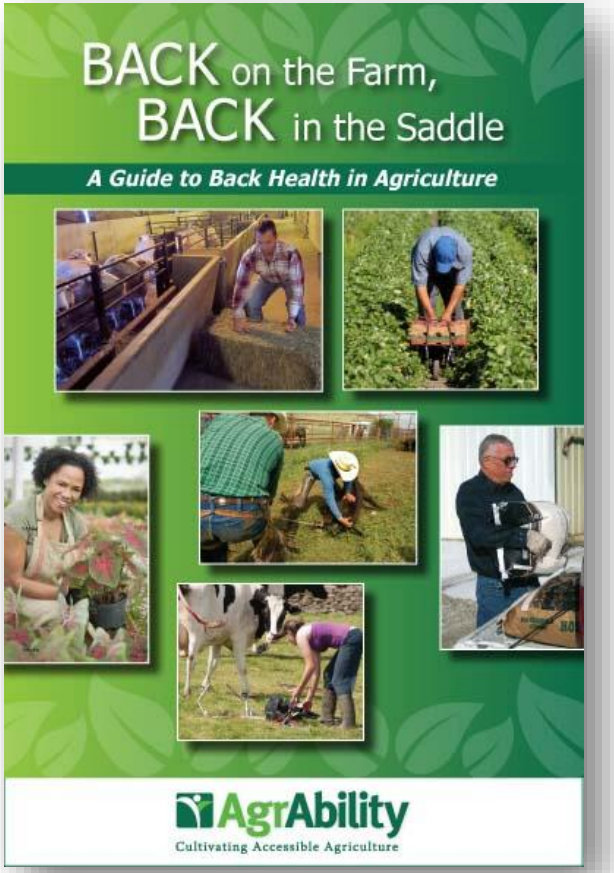
Recent Publications





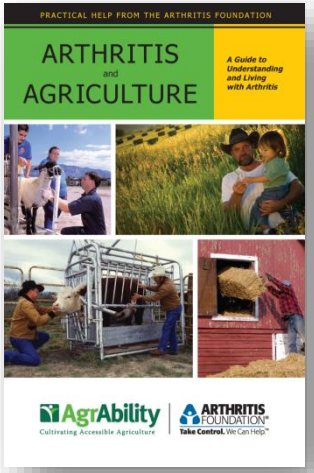
BACK on the Farm, BACK in the Saddle

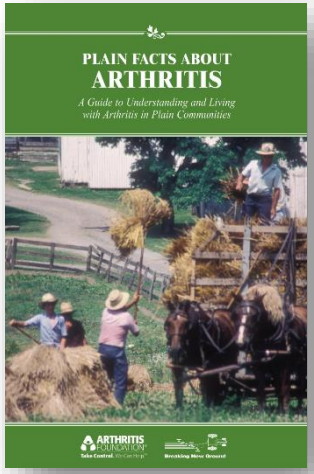
- Back problems = most common disabling conditions reported by AgrAbility clients.
- 21-page booklet discusses many aspects of back problems in ag settings
- www.agrability.org/resources/back

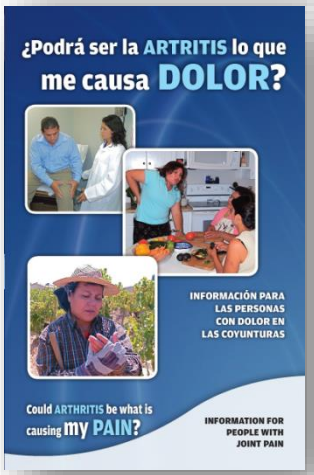


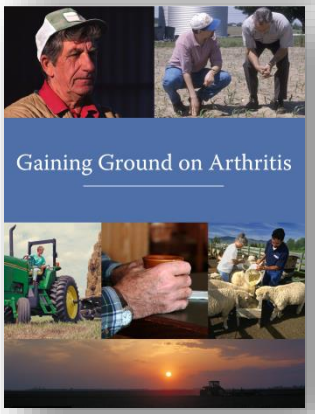
Arthritis Resources

- www.arthritis-ag.org
- Arthritis and Agriculture
- Plain Facts about Agriculture
- ¿Podrá ser la Artritis lo que me causa Dolor? (Could Arthritis be the cause of my Pain?)
- Gaining Ground on Arthritis DVD



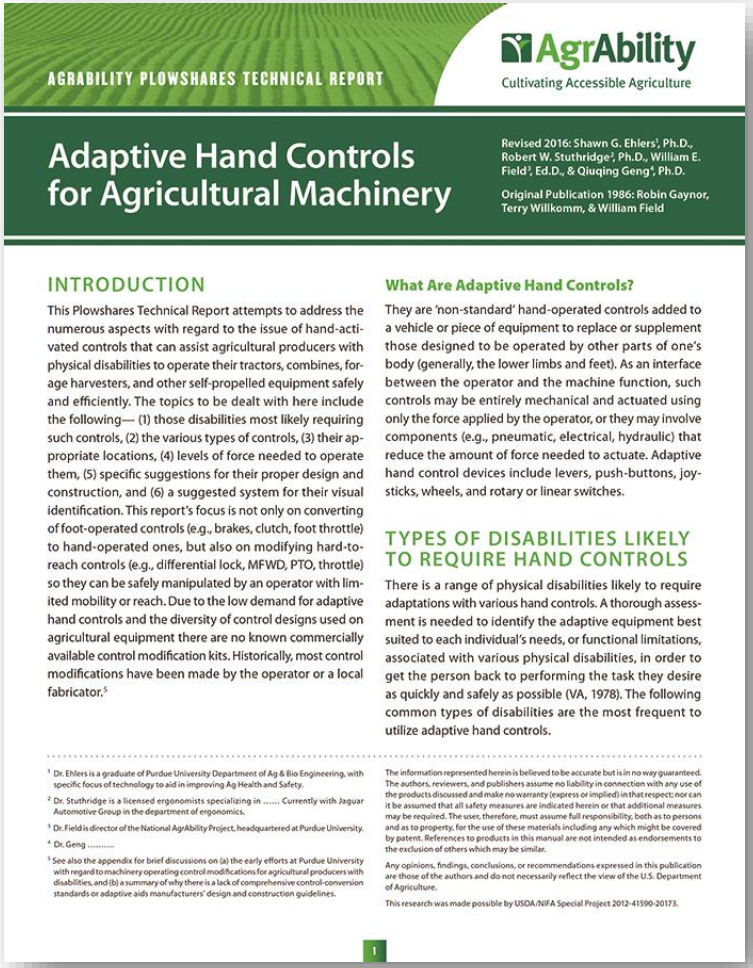






Plowshares

- 30 technical reports on specific topics, such as farming with a spinal cord injury
- Currently being updated



AGRABILITY PLOWSHARES TECHNICAL REPORT

AgrAbility
Cultivating Accessible Agriculture

Adaptive Hand Controls for Agricultural Machinery

Revised 2016: Shawn G. Ehlers[1], Ph.D., Robert W. Stuthridge[2], Ph.D., William E. Field[3], Ed.D., & Qiuqing Geng[4], Ph.D.

Original Publication 1986: Robin Gaynor, Terry Willkomm, & William Field

INTRODUCTION

This Plowshares Technical Report attempts to address the numerous aspects with regard to the issue of hand-activated controls that can assist agricultural producers with physical disabilities to operate their tractors, combines, forage harvesters, and other self-propelled equipment safely and efficiently. The topics to be dealt with here include the following— (1) those disabilities most likely requiring such controls, (2) the various types of controls, (3) their appropriate locations, (4) levels of force needed to operate them, (5) specific suggestions for their proper design and construction, and (6) a suggested system for their visual identification. This report's focus is not only on converting of foot-operated controls (e.g., brakes, clutch, foot throttle) to hand-operated ones, but also on modifying hard-to-reach controls (e.g., differential lock, MFWD, PTO, throttle) so they can be safely manipulated by an operator with limited mobility or reach. Due to the low demand for adaptive hand controls and the diversity of control designs used on agricultural equipment there are no known commercially available control modification kits. Historically, most control modifications have been made by the operator or a local fabricator.[5]

What Are Adaptive Hand Controls?

They are 'non-standard' hand-operated controls added to a vehicle or piece of equipment to replace or supplement those designed to be operated by other parts of one's body (generally, the lower limbs and feet). As an interface between the operator and the machine function, such controls may be entirely mechanical and actuated using only the force applied by the operator, or they may involve components (e.g., pneumatic, electrical, hydraulic) that reduce the amount of force needed to actuate. Adaptive hand control devices include levers, push-buttons, joysticks, wheels, and rotary or linear switches.

TYPES OF DISABILITIES LIKELY TO REQUIRE HAND CONTROLS

There is a range of physical disabilities likely to require adaptations with various hand controls. A thorough assessment is needed to identify the adaptive equipment best suited to each individual's needs, or functional limitations, associated with various physical disabilities, in order to get the person back to performing the task they desire as quickly and safely as possible (VA, 1978). The following common types of disabilities are the most frequent to utilize adaptive hand controls.

[1] Dr. Ehlers is a graduate of Purdue University Department of Ag & Bio Engineering, with specific focus of technology to aid in improving Ag Health and Safety.

[2] Dr. Stuthridge is a licensed ergonomists specializing in ..... Currently with Jaguar Automotive Group in the department of ergonomics.

[3] Dr. Field is director of the National AgrAbility Project, headquartered at Purdue University.

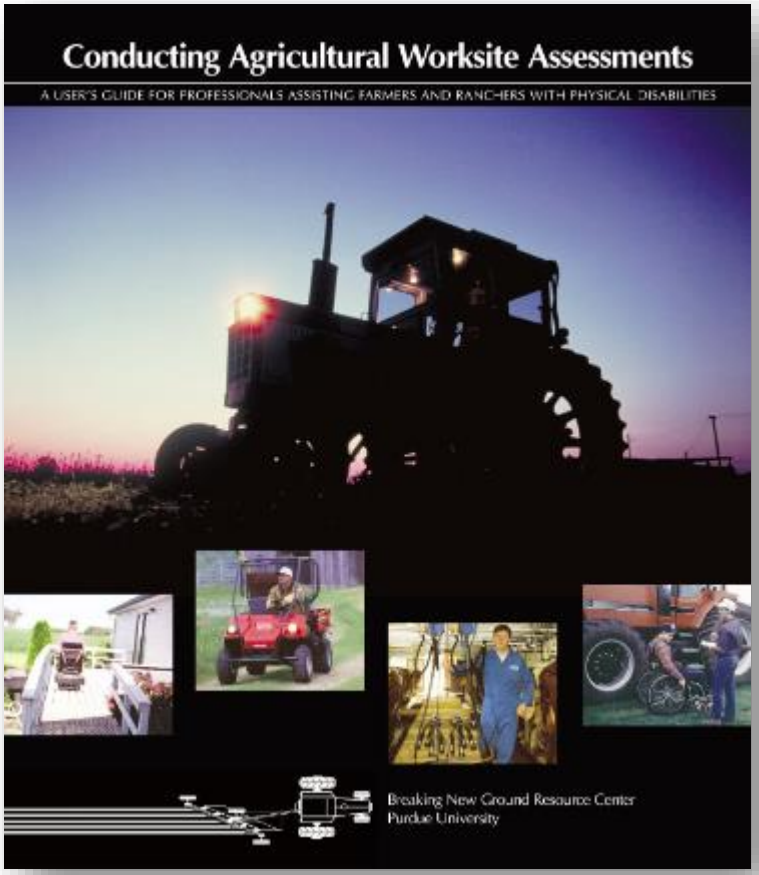
[4] Dr. Geng .....

[5] See also the appendix for brief discussions on (a) the early efforts at Purdue University with regard to machinery operating control modifications for agricultural producers with disabilities, and (b) a summary of why there is a lack of comprehensive control-conversion standards or adaptive aids manufacturers' design and construction guidelines.

This research was made possible by USDA/NIFA Special Project 2012-41590-20173.

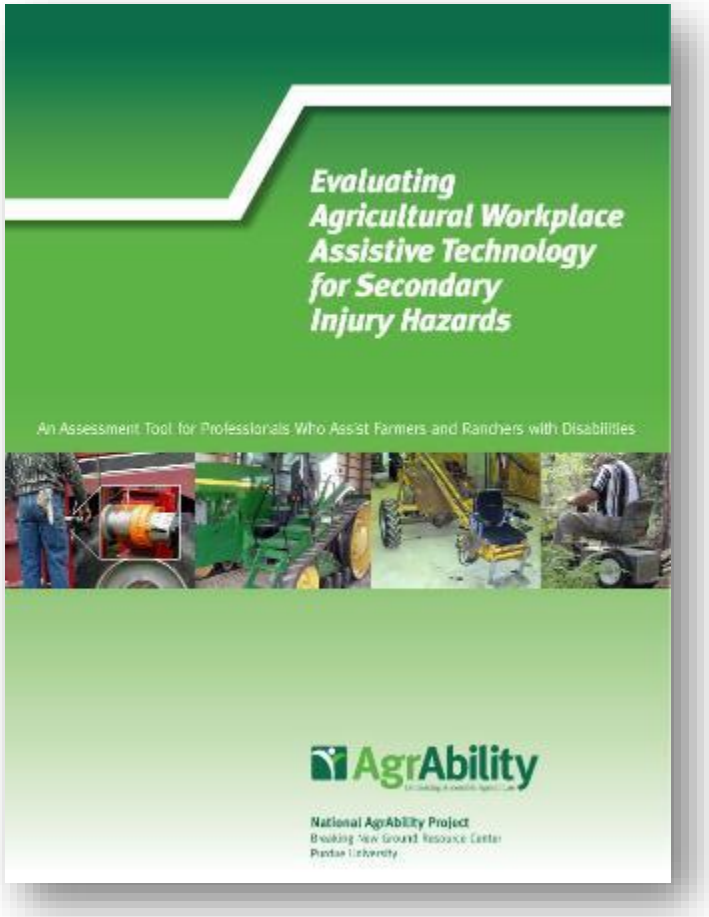
Conducting Agricultural Worksite Assessments

- Step-by-step guide for evaluating farms and ranches
- Reproducible assessment form
- Electronic database for recording data and printing reports



AT Secondary Injury Evaluation

- Step-by-step guide for evaluating AT for secondary injury hazards
- Reproducible assessment forms



Newsletters

- AgrAbility Harvest
  - Annually to national audience
- AgrAbility e-Note
  - Monthly to AgrAbility staff members and other interested parties

Questions?