



By Dianna Borsi O'Brien  
Photos by Peter Anger

At 75, Margaret Niemeyer can still play basketball with her teenage grandchildren, despite having had osteoarthritis since her 50s.

At 80, Ruth "Petey" Bank worked at a part-time job until last year, despite having had rheumatoid arthritis since 1985.

In many ways, these women are typical. Arthritis strikes more women than men and often attacks women as young as their 40s. Nearly one-third of the 46 million Americans diagnosed with arthritis are ages 45 to 64, according to the Centers for Disease Control and Prevention (CDC).

So how are these women fighting back—and winning—against the nation's leading cause of disability?

Exercise.

### Minor's Major Achievement

Marian Minor Ph.D., chair of the University of Missouri Department of Physical Therapy in the School of Health Professions, has broken new ground by suggesting physical activity as arthritis treatment.

"Her work turned around the thinking about arthritis and changed medical recommendations," says Teresa J. Brady, Ph.D., senior behavioral scientist for the Arthritis Program at the CDC.

Nearly two decades ago, when Minor began her research, the prescription for arthritis was rest. Physicians scoffed at her assertion that people with arthritis could exercise.



**OPPOSITE PAGE:** Columbia women have come together in groundbreaking arthritis research and treatment.

**LEFT:** Marian Minor, a pioneer in treating arthritis with exercise (center), with successful clients Petey Bank (left) and Margaret Niemeyer.

"It was so radical at the time to say arthritis and aerobics in the same sentence," Minor recalls with a laugh. Her research showed not only that exercise doesn't worsen arthritis symptoms but that people with arthritis can exercise vigorously enough to improve their cardiovascular health and fitness. Additional research has shown exercise can minimize pain and depression among arthritis sufferers.

Joe Snizek, M.D., chief of the CDC Arthritis Program, says Minor's work led to the American College of Rheumatology's new treatment guidelines, which now encourage exercise.

Today a CDC public information campaign proclaims: "Physical Activity: The Arthritis Pain Reliever."

Now acknowledged as an international expert on arthritis and exercise, Minor has earned accolades such as the Missouri Governor's Fitness and Health Leadership Award and two Arthritis Foundation awards, including the 2001 Engalitcheff Award for Impact on Quality of Life and the 2000 Humanitarian of the Year Award.

"Her work has improved the quality of life for thousands of people," Snizek says.

## Changing Destiny

Niemeyer says she made a decision when her mother started using a wheelchair: "I watched my mother drop out as a result of inactivity from arthritis, and I thought to myself, 'That's not for me.'"

In the late 1990s, Niemeyer took part in one of Minor's research studies and has been exercising ever since. "Marian's research convinced me you've got to stay active," says Niemeyer. "You've got to keep going to keep all parts moving."

Bank, a fellow research participant, not only kept exercising after the project was over but also joined Minor's research team as an assistant, recruiting and tracking volunteers. She retired from her post in 2006 to spend more time volunteering with Habitat for Humanity, Meals on Wheels and her church. In March, the Arthritis Foundation named her Humanitarian of the Year.

## The Health Connection

A brick-and-mortar monument to Minor's work is The Health Connection, an exercise facility Minor founded in 1991 for her research. Today the nationally acclaimed facility has 325 members, and last year it moved from its Parkade Center location to a spacious new spot at Stephens College on Broadway.

In addition to exercise classes for people with arthritis, THC offers everything from tai chi to health screenings.

"We know what we're doing in terms of arthritis," says Jenny Workman, the facility's

**RIGHT:** Jenny Workman (left) serves as director of The Health Connection, and Beth Richards works there as program manager of the Missouri Arthritis and Osteoporosis Program.



director. "We love what we're doing for people and for the community." Every staff member holds national exercise certification, she says, and has received intensive training about arthritis exercises. They keep a nurse on staff to answer questions.

In 2004, THC was named one of the nation's 10 exceptional physical activity programs by the National Council on Aging.

Workman received the University of Missouri's Chancellor's Outstanding Staff Award in 2005.

## Missouri Sets the Pace

The Health Connection houses the Missouri Arthritis and Osteoporosis Program, founded in 1985, and Central Missouri Regional Arthritis Center, one of the state's seven regional arthritis centers providing resource materials and courses.

"Missouri was one of the first states to invest state money in fighting arthritis," says the CDC's Snizek.

Recently, state funding has slipped from \$293,000 in 2004 to \$75,000 in 2007. But since 1999, Missouri has been one of eight states awarded competitive CDC grant funding, giving the state an average of \$242,561 for each of the last four years.

Beth Richards joined the MAOP in 2002 as one of the state's five juvenile arthritis care coordinators, a program since discontinued. Today, as program manager, her job is to stretch the funds she has. She recently moved

her office from Jefferson City to Columbia for increased access to resources.

"It has been a challenge," Richards says. "It's not just a job; it's more of a mission really."

The state program's main goal is promoting exercise and self-help classes. People who participate, notes the CDC, "report a 20 percent decrease in pain and a 40 percent decrease in physician visits, even for years after course participation." In Missouri, 16,684 people took such courses in 2006.

Periodically, Richards teaches one of the self-help classes herself. At the end of a six-week course, a single mother with diabetes and hypertension told Richards the class had changed her life. She had learned to eat better, she felt better and now she and her child walked to the park daily for exercise.

And then she gave Richards a hug and a thank-you note.

Mission accomplished.

## Reaching Out

For years, Karen Smarr, Ph.D., a researcher at the Harry S Truman Memorial Veterans' Hospital, has been working to find better ways to help people with rheumatoid arthritis battle their pain and stress using self-management programs.

Research shows people involved in edu-

cational programs about arthritis feel better, see their doctors less frequently and have less depression.

"We've found major benefits for patients," says Smarr, who also is a principal investigator with the MU-based Missouri Arthritis Rehabilitation Research and Training Center.

But busy lives, distance and even costs can keep people from taking courses, so Smarr has turned to the Internet.

"The online approach has reached persons who are busy working and raising families, which in the past prevented them from accessing our clinic-based program," says Smarr.

Her research team's password-protected site, RAhelp.org, provides arthritis patients with self-help materials. Visitors can receive follow-up calls from counselors and online help through a professionally monitored online peer-to-peer support group, discussion boards and other resources.

Smarr's work has earned praise from Kate Lorig, R.N., Ph.D., a professor of medicine at Stanford University School of Medicine, who pioneered arthritis self-management courses. "I think she's on the cutting edge," says Lorig.

## Help for Gardeners and Farmers

Reaching the agricultural community with arthritis information can be a challenge. More

**BELOW:** Karen Smarr (left), a researcher at Harry S Truman Hospital, developed the Web site RAhelp.org for arthritis education. Karen Funkenbusch educates gardeners and farmers with arthritis through the Missouri AgrAbility Project.

than one-third of U.S. farmers have arthritis, according to farm worker experts, but farmers rarely complain or seek help.

Through the Missouri AgrAbility Project, Karen Funkenbusch, an MU research associate and rural safety and health specialist, has provided training, site visits and technical and educational materials to farmers.

Funkenbusch also developed an interactive Web site called "Gardens for Every Body," which teaches adaptive approaches to outdoor work—including backyard gardening.

Adding to the outreach challenge, many of America's 3 million farm workers are immigrants with limited English proficiency. To help bridge the language gap, Funkenbusch has worked with Spanish speakers to develop educational materials and present them at a training session for *promotoras*, Spanish-speaking lay health educators.

Promotoras provide services through the nation's 500 migrant health centers. Last November Funkenbusch presented the materials at the Midwest Farmworker Stream Forum put on by the National Center for Farmworker Health.

"If I can make one little difference to help people," says Funkenbusch, "I want to do that."



## Arthritis Facts

- Arthritis includes more than 100 diseases and conditions, such as osteoarthritis and autoimmune diseases such as rheumatoid arthritis and lupus.
- Arthritis is the nation's leading cause of disability, limiting the lives of 16 million people and causing about 9,500 deaths a year.
- Arthritis affects about 1 in 5 Americans or about 43 million people. It is the nation's most common health problem.
- Arthritis costs in 2003 totaled about \$128 billion, which includes \$80.8 billion in direct costs and \$47.0 billion in indirect costs, such as lost income. The costs equal 1.2 percent of the 2003 U.S. gross domestic product, an amount similar to a slight economic recession.

Source: The Centers for Disease Control and Prevention [www.cdc.gov/nccdphp/publications/aag/arthritis.htm](http://www.cdc.gov/nccdphp/publications/aag/arthritis.htm)