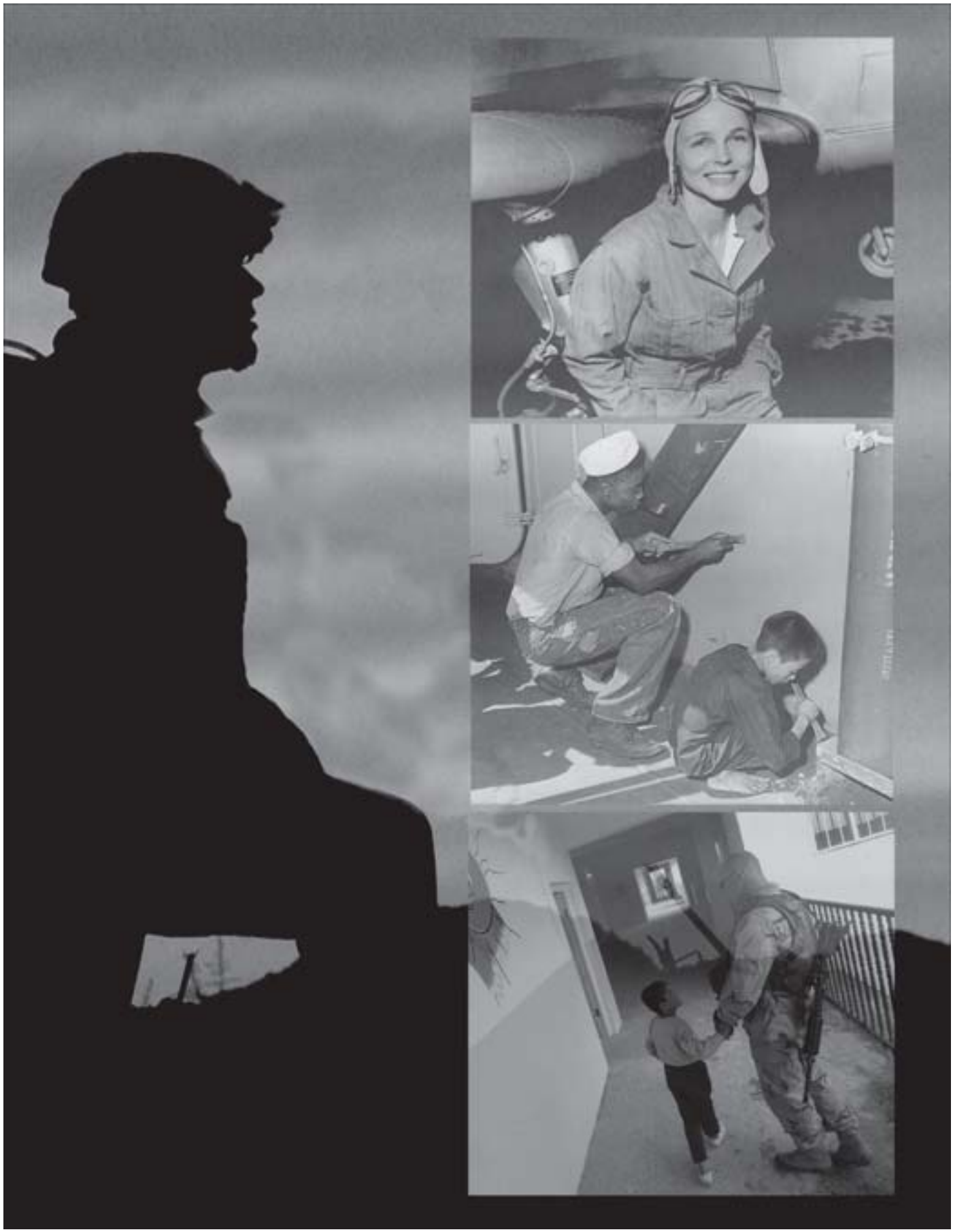

Celebrating 40 Years

of Publishing Excellence

More than 52 million people worldwide, military and civilian, died in World War II. The United States lost 500,000 men and women soldiers, Great Britain lost almost 400,000 soldiers and civilians, and the USSR lost 20.6 million people—10 percent of its total prewar population. The horrific loss of human life around the world was beyond imagining.

The global hostilities of WWII ceased by the end of 1945, but the wounds and shattered lives of the troops remained to be healed. The United States would not forget its warriors and war victims and once more evoked Abraham Lincoln's promise to the veterans of the Civil War and all future wars: ". . . let us strive on to finish the work we are in; to bind up the nation's wounds; to care for him who shall have borne the battle, and for his widow and his orphan . . . ."

Some 27,000 returning U.S. soldiers lost arms or legs during the battles of WWII, and the United States was committed to care for, treat, and heal their broken bodies.

In late January 1945—just days before Roosevelt, Churchill, and Stalin met at Yalta—another important meeting took place on Chicago campus of Northwestern University. There U.S. Army Surgeon General Norman Kirk initiated a research and development (R&D) program with the mandate to improve prostheses by applying technology from other fields. This led to the Committee on Prosthetics Research and Development (CPRD).

This was the birth of federal funding for prosthetics in the United States, and the Veterans Administration's contractual prosthetics research program began 2 years later in 1947, funding both VA and non-VA R&D programs in the fields of prosthetics and sensory aids. Rehabilitation engineering eventually grew out of this continued federal support. The initial budget was $1 million each year, and while the research focused on veterans, it also served and benefited all people with disabilities.

The VA Prosthetics Center (VAPC) in New York City was established in 1956, which combined a clinical facility with the R&D and evaluation efforts already in place. This Center was the true beginning of the VA's Rehabilitation R&D Service, which also disseminated the results of its R&D program.

The Rehabilitation R&D publishing program began in 1964, with the first issue of the *Bulletin of Prosthetics Research* (*BPR*) and evolved into the *JRRD* (*Journal of Rehabilitation Research and Development*) in 1984. We celebrate 40 years of scientific publishing this year, 2004, and commit our future work to ever-higher quality standards for *JRRD*. In this way, we will honor both our veterans and our R&D researchers with significant peer-reviewed publications in rehabilitation medicine to benefit veterans and others with disablilities. The photo history pages that follow pay tribute to those who have served our mission before us and to those who will serve after us—those from the next generation who, we trust, will celebrate *JRRD*'s first centennial in 2064 with great pride and fanfare. Onward to the future!

Leadership

Rehab R&D Directors

Mindy L. Aisen, MD
1998–Present

John W. Goldschmidt, MD
1992–1997

Margaret J. Giannini, MD
1982–1991

Vernon L. Nickel, MD
1977–1982

Robert E. Stewart, MD
1956–1977

JRRD/BPR Editors

Stacieann Yuhasz, PhD
2002–Present

Tamara Sowell, BS
1991–2001

Seldon P. Todd Jr.
1983–1990

Eugene F. Murphy, PhD
1977–1983

William M. Bernstock, MA
1964–1973

Not pictured: Earl A. Lewis, Editor, *BPR*, 1973–1976

1960s

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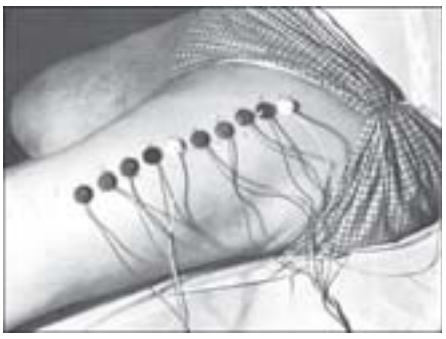

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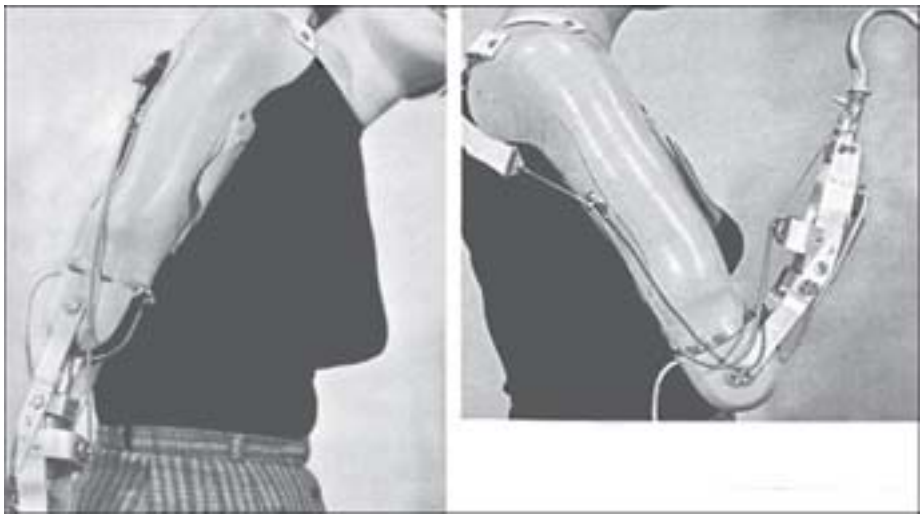

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1. Closed-circuit TV (CCTV) reader for the visually impaired was thesis project by two MIT seniors. VA often partners R&D projects with major universities to enhance outcomes that may lead to viable commercial devices for the disabled population.

2. Early "mapping" program to study EMG activity in various muscle groups and determine best site(s) for EMG readouts—foundation work for later advances in functional electrical stimulation (FES).

3. Amputee with electric elbow demonstrates flexion and extension motions. Developed in the 1960s by VA and Northwestern University.

4. VA Prosthetics Center developed the flexion compensator, which simulates normal knee flexion during stance phase.

5. Blind woman uses Visotactor B reading machine, developed and evaluated by the VA's Prosthetics and Sensory Aids Service.

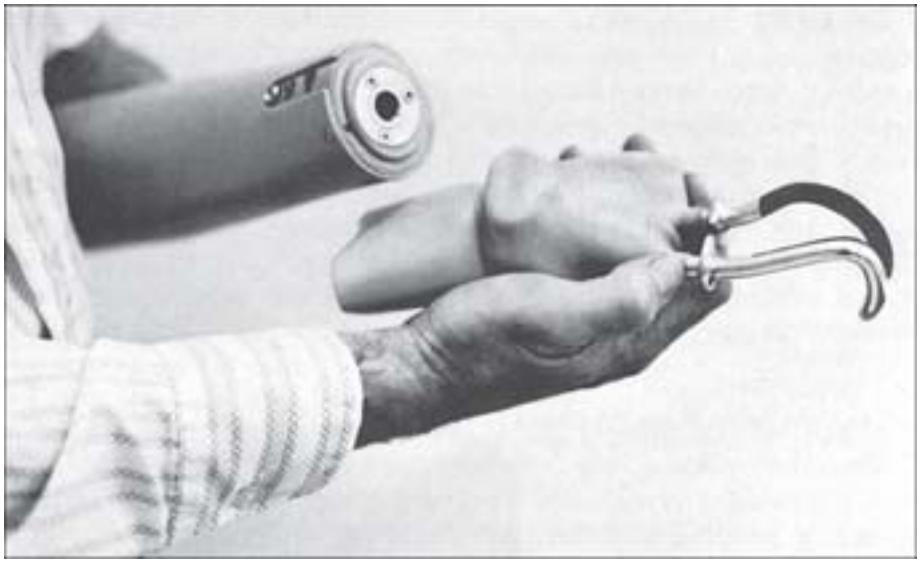
1970s

1. VA developed prototypes of the "synergetic hook," a powered terminal device, which is interchangeable with a prosthetic hand. Amputee attaches hook to prosthesis.

2. An externally powered prosthesis, controlled by low-effort shoulder motions, was evaluated by the VA Prosthetics Center. Note full opening of terminal device and full elbow flexion with light force on control cable.

3. Experimental prosthesis (with powered control of shoulder flexion, elbow, and hook) was evaluated by the VA Prosthetics Center in early 1970s. Amputees reported that its active shoulder flexion greatly improved their range of motion for work tasks.

4. "The Talking Brooch," one of the earliest portable communications devices, was developed for people who could not talk but could input words on keyboard. Before the 1970s, earlier systems were stationary and essentially special typewriting devices.



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1980s

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1. Ice-hiking amputee rests and inspects his Seattle Limb System (knee, leg, and foot) developed and evaluated by VA.

2. Laser cane research began in the 1960s, motivated by the need to help blind veterans of the Korean War, and has continued for 40 years. Laser canes emit 3 pitched tones that correspond with obstacles at head, waist, and curb levels.

3. Computer-aided robotic arm/worktable system allows paralyzed patients to feed themselves. Dual-purpose chin controller controls either robotic arm or wheelchair.

4. Significant advances in digital hearing aids and cochlear implants were made during the 80s and 90s. More than 300,000 veterans have service-connected hearing loss; many more have age-related impairment. Photo courtesy of INTERTON.

1990s

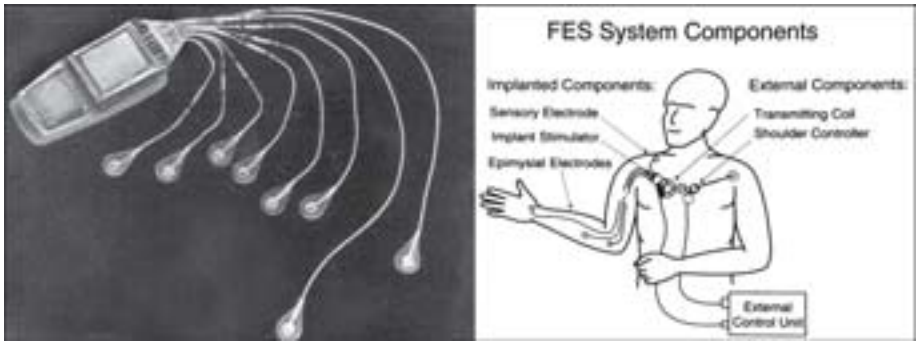
1. Wheelchair racing is an important rehabilitation activity for many paralyzed patients—keeping them strong in body and spirit. Peer-reviewed papers on wheelchair technology, racing techniques, and exercise benefits have appeared over four decades in *BPR* and *JRRD*.

2. FES systems to regain lost function were pioneered over several decades by VA and VA-affiliated researchers.

3. VA-developed AdVAntage Arm™ worn by veteran with a short amputation level. High elbow flexion angle allows full range of motion with grasping device around mouth and head area.

4. Computer-aided design and manufacture (CAD-CAM) of prostheses became widely used in the 1990s. CAD-CAM-generated prosthetic sockets were judged superior by users.

1



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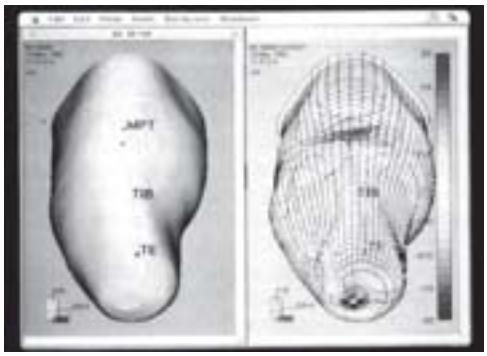

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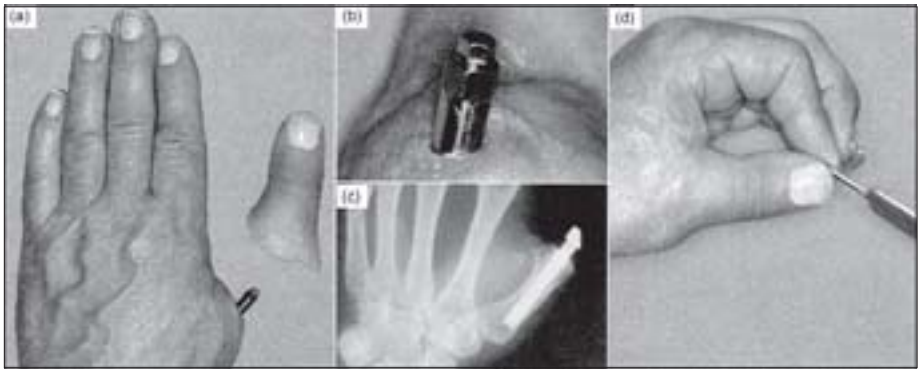

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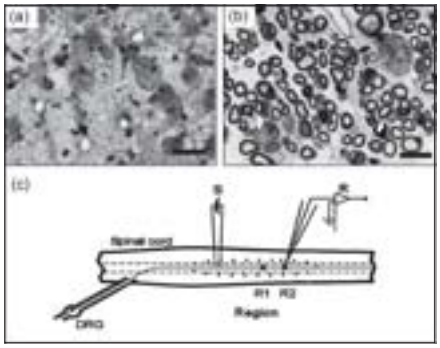

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1. Osseointegration (attachment of titanium to bone) is used on thumb amputee to return full hand function.

2. Home aerobic exercise program for manual wheelchair users improves their upper-body endurance. Intensive exercise by SCI patients can restore some function.

3. This LED pedestrian WALK signal with animated “eyes” was designed for people with low vision. This display improves recognition distance.

4. Regeneration of damaged or destroyed nerve tissue holds great promise for the paralyzed. Transplantation of adult human neural precursor cells in (a) demyelinated axons has led to (b) remyelinated axons in animal studies. Schematic (c) shows position of electrodes.

5. This advanced rehab shower/commode wheelchair was designed and developed by the VA for SCI patients. Patients and caregivers were an integral part of the design process.