The Cooper Institute is a nonprofit research and education center dedicated to advancing the understanding of the relationship between living habits and health, and to providing leadership in implementing these concepts to enhance the physical and emotional well-being of individuals.
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Letter from the Chairman and Founder

We’ve Only Just Begun

Two decades ago, a distinguished cardiologist from New York wrote a book about exercise. Rather than tout its benefits, he said that it did nothing for people but make them feel good.

When I left the Air Force in 1970 to start my own medical practice, there were few objective data showing the health benefits of exercise. I was making predictions about using exercise to prevent heart attacks, provide rehabilitation following heart attacks, and/or improve cardiovascular risk factors—but had no data to prove it.

Thus, I established The Cooper Institute as a nonprofit research center in June 1970, before seeing my first patient in December. I needed solid scientific research to overcome my critics. Since research has always been my primary interest in medicine, I was excited about establishing the Institute as the “hub of the wheel.”

I believe that without the Institute, The Cooper Aerobics Center campus would not exist today. Criticism was rampant in those early days. Shortly after my first book, Aerobics, was published in 1968, a newspaper publication stated: “The streets are going to be full of dead joggers as more Americans follow Cooper.”

Therefore, I established the Aerobics Center Longitudinal Study (ACLS). Now the largest database of its kind, the ACLS is based on data from more than 80,000 patients who have visited the Cooper Clinic for medical evaluations since 1970. The ACLS database contains more information on fitness, body fat percentage, and fat distribution than any other study. Research in the ACLS has led to multiple grants from the National Institutes of Health (NIH) and has helped us to become a recognized leader in the study of exercise and its impact on health.

Over the next 15 to 20 years, I predict that our research in vitamins will be just as exciting and productive as our research in exercise has been over the past 34 years. Our initial vitamin study, published in December 2003, showed that the *Cooper Complete® multivitamin reduced C-reactive protein levels (a risk factor for cardiovascular disease and diabetes) in study participants. Also, the *Cooper Complete® multivitamin has been proven to block the oxidation of low-density lipoprotein (LDL)-cholesterol (the type associated with heart disease) and to reduce homocysteine levels, a substance related to heart attacks, strokes, Alzheimer’s disease, and hip fractures.

Thanks to a dedicated team of scientists and educators, The Cooper Institute is on the cutting edge of 21st century preventive medicine. Our findings are based on solid data, and our critics now are few. Today, we have an excellent reputation not only in Dallas, but also around the world. Although we’ve come a long way, it feels as if we’ve only just begun. As we build on a strong foundation and enter into new territory, I hope that you will support our mission.

Kenneth H. Cooper, MD, MPH

*Cooper Complete is owned by Cooper Concepts, Inc., which pays the Institute for the costs associated with product research, see Footnote 3 “Affiliated Party Transactions” in Notes to Financial Statement, p.50.
As we approach the 35th anniversary of The Cooper Institute, we have problems! However, our problems are good because they are associated with success, growth, and expansion.

Our research enterprise is flourishing. We currently have 18 competitive grants from the NIH and several projects funded by foundations, private donors, and corporations. Major ongoing projects are summarized below.

The Dose Response to Exercise in Post-menopausal Women (DREW) study is one of the largest controlled exercise trials ever undertaken at a single center. We are studying 450 post-menopausal, overweight, and mildly hypertensive women to identify the optimal dose of exercise for cardiovascular health.

We are researching the benefit of exercise in clinically depressed adults who have not achieved remission with drug therapy.

The Oak Cliff Center allows us to establish research studies and community programs for African-American and Mexican-American populations.

The Childhood Obesity Prevention Project, funded by the Michael & Susan Dell Foundation, serves to identify and support innovative and effective childhood obesity prevention/treatment programs.

The Lifestyle Intervention and Independence for Elders (LIFE) study is evaluating the role of exercise in improving mobility, function, and quality of life in frail, elderly individuals.

5 a Day, The Rio Grande Way is testing whether the Internet is an effective tool for educating adults regarding the importance of eating fruits and vegetables for good health.

We are investigating coronary artery calcium detected by electron beam tomography as a means to identify individuals at high risk for heart attack.

The great success of our scientists in obtaining research grants requires increased operational support. NIH pays for research, not growth. Our expanding research portfolio requires building expansion and an enhanced infrastructure.

Our education and research dissemination efforts are also growing. Using a “train-the-trainers” model, we directly reach thousands of health professionals each year and indirectly reach hundreds of thousands to millions of individuals who benefit from improved diet and more physical activity. We provide training for the US Armed Services around the world as well as police and firefighters at home. However, we are in need of a state-of-the-art wireless auditorium and expansion of distance learning capabilities.

We are experiencing epidemics of physical inactivity and obesity. These public health problems present great opportunities for The Cooper Institute to make a difference. The need for our research, education, and dissemination programs has never been greater. We can meet this need with your support.

Steven N. Blair, PED
Executive Committee

Kenneth H. Cooper, MD, MPH, Dallas, TX.
Chairman of the Board
- Founded The Cooper Institute, a nonprofit foundation, in 1970.
- Later established the Cooper Clinic, Cooper Fitness Center, Cooper Guest Lodge, the Spa, Cooper Wellness Program, Cooper Ventures, and Cooper Concepts, Inc.

Neil J. O’Brien, Dallas, TX.
Secretary of the Board
- Attorney with Gardere Wynne Sewell, LLP, Dallas, TX.
- Founding member of the Board of the Dallas Business Committee for the Arts.
- Board member at the University of Dallas, Dallas, TX.
- Member of the City of Dallas High Technology Task Force.
- Institute Board member since 1980.

Frederick R. Meyer, Dallas, TX.
Vice Chairman of the Board
- Resides in Dallas where he is active in numerous business and community activities.
- Board member of Aladdin Industries, LLC, Nashville, TN.
- Presidential appointment to the US Naval Academy Board of Visitors, 2002.
- Chairman of the Executive Committee for the Presidential Inauguration, 2001.
- Institute Board member since 1970.

Steven N. Blair, PED, Dallas, TX.
President and CEO of The Cooper Institute
- Institute staff member for 24 years.
- Primary research interests: exercise, fitness, body composition, and chronic disease.
- Author of more than 300 book chapters and articles focusing on the relationship between lifestyle and health.
- Recipient of honors from many scientific associations, including a MERIT (Method to Extend Research in Time) award from the National Institute on Aging.
- Recipient of honorary doctoral degrees from universities in the United States, Belgium, and England.
- One of few individuals outside the US Public Health Service to be awarded the Surgeon General’s medallion.
Board of Trustees

The Cooper Institute is blessed with an outstanding Board of Trustees. As Dr. Cooper often states, “our Board is second to none.” Board members are caring, dedicated to our mission, farsighted, hard working, and provide important financial support. They have enabled us to have a splendid facility that is debt-free, and have provided an endowment that serves as a foundation to help support operations and establish endowed chairs for outstanding investigators.

Steven N. Blair, PED, President and CEO

Lester M. Alberthal, Jr., Plano, TX.
■ Former Chairman, President, and CEO of Electronic Data Systems, Plano, TX.

Board Member:
▼ Cox School of Business at Southern Methodist University.
▼ Center for the Pacific Rim at the University of San Francisco.
▼ Center for Strategic and International Studies, Washington, DC.
■ Institute Board member since 1989.

Arthur M. Blank, Atlanta, GA.
■ Co-founder of Home Depot.
■ Chairman of the Arthur M. Blank Family Foundation.
■ Owner and CEO of the Atlanta Falcons and the Georgia Force.
■ Institute Board member since 2003.

Susan Dell, Austin, TX.
■ Co-founder and CEO of the Michael & Susan Dell Foundation.
▼ The foundation is designed to encourage children to reach their greatest potential.
■ CEO of Susan Dell, Inc.
■ Institute Board member since 2002.

Joseph Goldstein, MD, Dallas, TX.
■ Recipient of the 1995 Nobel Prize in Medicine for research on cholesterol metabolism.
■ Professor of Molecular Genetics and Internal Medicine, The University of Texas Southwestern Medical Center, Dallas, TX.
■ Institute Board member since 2003.

Ray Hunt, Dallas, TX.
■ CEO of Hunt Oil Company, Dallas, TX.
■ Chairman, President, and CEO of Hunt Consolidated, Inc., Dallas, TX.
■ Chairman of the Board of Directors, Federal Reserve Bank, Dallas, TX.
■ Member of the Texas Business Hall of Fame.
■ Institute Board member since 1984.
Drayton McLane, Jr., Temple, TX.
- Chairman of the McLane Group, Temple, TX.
- Chairman and CEO of the Houston Astros Baseball Club.
- Vice President of the Executive Board, Boy Scouts of America (National).
- Institute Board member since 1993.

Steven Reinemund, Dallas, TX., and Purchase, NY.
- Chairman of the Board and CEO of PepsiCo in Purchase, NY.
- Member of the Board of Directors of Johnson & Johnson.
- Trustee of the Darden School at the University of Virginia.
- Institute Board member since 2003.

Peter O’Donnell, Jr., Dallas, TX.
- President, O’Donnell Foundation.
- Chairman, Advanced Placement Strategies, Inc.
- Member: Presidents’ Circle, National Academy of Sciences.
- Institute Board member since 1983.

Roger Staubach, Dallas, TX.
- Chairman and CEO of The Staubach Company, Dallas, TX.

Board Member:
- AMR Corporation
- Brinker International
- McLeod USA
- Former Dallas Cowboys’ quarterback.
- Institute Board member since 1980.

Robert B. Palmer, Dallas, TX.
- Former Chairman and CEO of Digital Equipment Corporation.
- Board member of Advanced MicroDevices.
- Institute Board member since 1994.

Louis Sullivan, MD, Atlanta, GA.
- Former Secretary of the US Department of Health & Human Services.
- Founder and President Emeritus, The Morehouse School of Medicine.
- Founding President, Association of Minority Health Professions Schools.
- Institute Board member since 2003.

Lee Posey, Dallas, TX.
- Founder and Chairman of the Board of Palm Harbor Homes, Inc.
- President, The Posey Family Foundation.
- Co-founder (with wife, Sally) of The Young Women’s Leadership Foundation, Dallas, TX.
- Institute Board member since 2001.

Kenny Troutt, Dallas, TX.
- Founder of Excel Communications.
- President and CEO of Mt. Vernon Investments.
- Trustee, Thoroughbred Owners and Breeders Association.
- Institute Board member since 2003.
Executive Committee:
- Functions with the authority of the full Board of Trustees in the governance of the business, legal, and ethical affairs of the Institute, except where action by the full Board is expressly required.
- Members:
  - Kenneth H. Cooper, MD, MPH, Chair
  - Frederick R. Meyer, Vice Chair
  - Neil J. O’Brien, Secretary
  - Steven N. Blair, PED, President/CEO
  - David Chmielowiec, CFO, ex officio

Governance/Long-range Planning Committee:
By a vote of the Board in November 2003, these two committees were combined.
- Responsible for nomination and renomination of trustees to the Board.
- Ensures that adequate planning has been undertaken by the leadership of the Board to carry out the mission of the organization.
- Handles other governance issues of the corporation throughout the year.
- Members:
  - Frederick R. Meyer, Chair
  - Steven N. Blair, PED
  - Kenneth H. Cooper, MD, MPH
  - Joseph Goldstein, MD
  - Ray Hunt
  - Peter O’Donnell, Jr.
  - Louis Sullivan, MD

Development Committee:
This committee was created by a vote of the Board in November 2003.
- Makes recommendations to the Board regarding the ways and means for raising annual and capital funds, endowment funds, and planned giving protocols to meet the immediate and long-range funding objectives of the organization.
- Members:
  - Ray Hunt, Chair
  - Susan Dell
  - Kenny Troutt
  - Jeanne Phillips, ex officio
  - Barbara McGowan, ex officio

Audit Committee:
- Reviews financial statements, internal control matters, and any other communications from and with the external auditor. Reports to the Board.
- Members:
  - Les Alberthal, Chair
  - Drayton McLane, Jr.
  - Neil O’Brien
  - Lee Posey
  - David Chmielowiec, ex officio

Investment Committee:
- Oversees short- and long-term investments of the Institute’s endowment and operating reserve.
- Meets on a quarterly basis.
- Members:
  - Robert Palmer, Chair
  - Arthur M. Blank
  - Lee Posey
  - Steven Reinemund
  - Roger Staubach
  - David Chmielowiec, ex officio
The Cooper Institute Scientific Advisory Board is comprised of internationally recognized investigators in medicine, epidemiology, health communications, physiology, and biostatistics. They give their most valuable resources—time and advice—to help us achieve higher levels of scientific accomplishment.

Steven N. Blair, PED, President and CEO

Claude Bouchard, PhD, Baton Rouge, LA.
- Executive Director of the Pennington Biomedical Research Center and the George A. Bray Chair in Nutrition, Baton Rouge, LA.
- Primary research interests: The genetics of adaptation to exercise and to nutritional interventions; the genetics of obesity and its co-morbidities.
- President of the International Association for the Study of Obesity.
- Recipient of the Honor Award from the American College of Sports Medicine, 2002.

Lester Breslow, MD, MPH, Los Angeles, CA.
- Professor and Dean Emeritus of the University of California at Los Angeles School of Public Health.
- Past President of: 
  ▪ International Epidemiology Association.
  ▪ American Public Health Association.
  ▪ Association of Schools of Public Health.
- Fellow of the American College of Physicians.
- Recipient of the Lienhard Award from the National Academy of Sciences.

William L. Haskell, PhD, Stanford, CA.
- Chairman of the Scientific Advisory Board.
- Professor Emeritus of Medicine and Human Biology, Stanford University.
- Author and coauthor of more than 350 scientific articles, reviews, chapters, and books in the areas of: 
  ▪ Preventive cardiology.
  ▪ Cardiac rehabilitation.
  ▪ Health promotion.
  ▪ Physical activity to enhance health and performance.
- Recipient of the Lifetime Achievement Award from the American Association of Cardiopulmonary Rehabilitation.
- Recipient of the Honor Award from the American College of Sports Medicine in 2000.

Norman M. Kaplan, MD, Dallas, TX.
- Clinical Professor of Internal Medicine and faculty member for more than 40 years at The University of Texas Southwestern Medical Center, Dallas, TX.
- Recipient of the Lifetime Achievement Award from the American Heart Association’s Council for High Blood Pressure Research.
- Executive committee member of the American Society of Hypertension.

I-Min Lee, MBBS, ScD, FACSM, Boston, MA.
- Associate Professor of Medicine, Harvard Medical School.
- Associate Professor of Epidemiology, Harvard School of Public Health.
- Co-principal investigator (with Dr. Ralph Paffenbarger) of the College Alumni Health Study, the largest and oldest ongoing study of the health benefits of physical activity.
- Awarded the Young Epidemiologist Award in 1999 by the Royal Society of Medicine, UK.

Guy S. Parcel, PhD, Houston, TX.
- Executive Dean and John P. McGovern Professor in Health Promotion, The University of Texas Health Science Center School of Public Health, Houston, TX.
- Director of NIH- and Centers for Disease Control and Prevention (CDC)-funded research projects to develop and evaluate childhood and adolescent health promotion programs and the diffusion of health promotion programs.
- Coauthor in 2002 of the textbook, Intervention Mapping: Designing Theory and Evidence-Based Health Education Programs.

Everett M. Rogers, PhD, Albuquerque, NM.
- Distinguished Professor, Department of Communication and Journalism, University of New Mexico.
- Principal investigator of a CDC-funded project assessing the effects of eight research projects on health policy and practice.
Strategic Resources

On The Move

Created in 2003, the Division of Strategic Resources, led by Susan Campbell, MEd, NCC, Vice President, serves to analyze the effective and efficient use of human, operational, and financial resources from a strategic perspective. The division functions to maximize the value of the Institute’s resources by motivating people, enhancing fundraising, and streamlining internal processes. In doing so, barriers to creativity, innovation, productivity, health, and safety are challenged. Groups within the division include: human resources, development, information technology, research dissemination, building operations, health promotion, and a new concept—an innovation lab.

What’s an Innovation Lab?

The Institute has historically received benefit through 2 types of work in the delivery of its mission—research and education. Potentially influential projects were sometimes left untouched if a clear link to either research or education was not evident. With a leap of innovation in mind, Dr. Steven Blair tasked the strategic resources group to establish collaborative teams that would both maximize current internal resources and provide future strategic value. The initial project of the innovation lab is Texas On the Move™ (TxOM), a state affiliate of America On the Move™.

Texas On the Move

America On the Move is a national initiative dedicated to working with communities across the nation to effect positive changes by improving the health and quality of life of all their citizens. America On the Move sought out The Cooper Institute in fall 2003 to initiate both individual and community change in Texas. By focusing on both individuals and communities, TxOM strives to create communities that support healthy eating and active living habits. The initial message is simple: begin to move more and eat less. Most individuals can begin to realize health benefits by making two small daily changes: taking an extra 2000 steps (the equivalent of about one mile) and consuming 100 fewer calories per day.

Texas On the Move: Summary

- Inspires Texans to engage in fun, simple ways to become more active, eat more healthy foods, and as a result, achieve and maintain a healthy weight.
- Creates and supports an integrated grassroots network of state resources. TxOM strives to build communities that support individual behavior changes.
- Encourages public and private partnerships to help build the capacity, reach, and support needed for community and individual behavior change.
- Allows the talented staff of The Cooper Institute to assist the citizens of Texas through innovative and collaborative projects.
The Challenge

The eating and physical activity patterns of most Americans have led to the United States being recognized as the most overweight nation in the world. More than 60% of American adults do not engage in 30 minutes of physical activity per day as recommended by the CDC, and 25% of American adults are not physically active at all. More than 120 million Americans (almost 65% of the adult population) are overweight; nearly 59 million, or 31%, are obese.

Furthermore, the sharp increase in the prevalence of overweight children is of significant concern. Between 1976 and 1980, only 6% of children were overweight. Between 1988 and 1994, this proportion had risen to 11%, and has continued to rise. African-American girls (ages 6 to 11) and Mexican-American boys (ages 6 to 11) are at particularly high risk of becoming overweight. In 1999-2000, 24% of African-American girls and 29% of Mexican-American boys were overweight (Source: CDC, National Center for Health Statistics, National Health and Nutrition Examination Survey).

Institute staff look forward to creating opportunities for developing healthy eating and active living habits that are not only enjoyable, but also promote confidence in the ability to be physically active, and involve friends, peers, and family members. One such project is Texas Third Graders on the Move. The project provides age-appropriate and culturally sensitive instruction to third-grade students that help them develop the knowledge, attitudes, skills, and behaviors needed to adopt and enjoy physical activity and healthy eating habits. In addition, a newly created volunteer program will allow Institute staff to serve as physically active role models for youth.

Through its web site at www.americaonthemove.org/tx, TxOM provides a highly interactive way for individuals and groups to register, set goals, and track daily physical activity. Communities, work sites, schools, walking groups, and member-based organizations across the state are logging on to monitor their progress and share their successes. In fact, since March 1, 2004, Americans have logged over 2 billion steps (about 1 million miles). That’s equivalent to 333 trips across the country, or traveling to the moon and back twice!
Development

Working to Enhance Visibility

Dr. Kenneth Cooper, Institute Founder and Chairman of the Board of Trustees, describes the Institute as the “hub of the wheel” of the Cooper Aerobics Center. His description alludes to the Institute’s pioneering research and educational initiatives on exercise and physical activity, and their impact not only on quality of life but also as a deterrent to premature death.

The Institute has also been described as “Dallas’ Hidden Jewel,” a reflection of its historic low profile within the Dallas community and a lack of general awareness of the importance of preventive health. However, the public is now beginning to recognize the need to take active control of their own health and the health of their families, and to participate in community-based health initiatives that will exponentially benefit the entire population.

It became clear that The Cooper Institute needed to capitalize on this changing public awareness by increasing its visibility. Thus, the Development Division set ambitious goals for the year. The Institute initiated a 2004 Preventive Medicine and Wellness Lecture Series featuring nationally recognized scientists as guest speakers. This four-event Dallas-based series has been underwritten by PepsiCo, Inc., an industry leader in the manufacture and distribution of healthier snacks and beverages. To date, the response to these programs has been overwhelming. The Institute staff is grateful for both the community support (through donations and subscriptions) and the support of distinguished individuals who hosted these events:

- Mr. and Mrs. Steven Reinemund, April 2004
- Mr. and Mrs. Dan Cook, May 2004
- Mr. and Mrs. Norman Brinker, September 2004
- Mr. and Mrs. Kenny Troutt, November 2004

The lecture series not only serves as an opportunity for the Institute to present “who we are” and “what we do” in more intimate settings, but also to disseminate valuable information on timely health-related topics. Each event has been well attended (more than 100 participants each) and has generated significant public interest. This lecture series will continue in 2005.

The Cooper Institute has also become an approved charity for the Combined Federal Campaign (CFC) on both national and international solicitations. The CFC is a September-to-December campaign conducted internally among all federal employees (military and civilian) whereby donors can designate charities of their choice for contributions or pledges. The CFC raises tens of million dollars annually. The Institute is delighted to be an approved CFC charity.
To Our Donor Partners: Past, Present, and Future

The Cooper Institute, a 501(c)(3) nonprofit organization, depends on sustained financial support for:

- General operating expenses.
- Funding pilot studies that provide data for larger grant applications to the NIH.
- Professional development of staff.
- Special projects that will become revenue-generating centers over time.

Accordingly, all contributions to the Institute are greatly needed and appreciated. Charitable giving options include:

- Gifts of cash (credit card or check).
- Pledges over a multi-year period.
- Gifts of securities or personal property.
- Deferred gifts in the form of
  - Charitable remainder trusts
  - Insurance policies
  - Life estates
  - Will bequests

Gifts given as living memorials in the name of a relative or friend are a profound way to honor the life and legacy of a loved one.

Three key giving areas will help ensure the Institute’s financial viability throughout the decades to come:

- **Endowed Research Chairs** – to attract and retain the very best scientists.
- **Designated Gifts** – to continue the operation of key programs at enhanced levels in both Research and Education.
- **Capital** – for laboratory equipment, upgrades, renovations, and building development.

The Institute welcomes contributions and invites current and future donors to visit our website at [www.cooperinst.org](http://www.cooperinst.org), or to call Barbara McGowan, Development Director, at 972-341-3280 or 1-800-635-7050 for more information.
The Center for Epidemiological Research (CER) continues to focus on population-based studies of the incidence and causes of chronic disease. Staff members of the CER include:

- **Michael LaMonte, PhD** - Center Director.
- **Steven Blair, PED** - Dr. Blair has provided senior oversight of epidemiological research activities at The Cooper Institute since 1980.
- **Shannon FitzGerald, PhD** - Staff epidemiologist and Project Director of Electron Beam Tomography (EBT) studies.
- **Milton Nichaman, MD, ScD** - Senior epidemiological consultant.

Research activities in the CER rely on integrated contributions from several other Institute centers and staff.

- **James Kampert, PhD** - Senior biostatistician since 1994.
- **Sheila Gardner, MS** - Staff biostatistician.
- **Beth Wright, MS** - Director of the Center for Data Management. Ms. Wright and her staff oversee all activities related to the collection, processing, and storage of epidemiological data. This includes administration of a massive mail-back survey every 4 years designed to collect updated health information from patients who have received medical examinations at the Cooper Clinic.
- **Melba Morrow, MA** - Vice President of Research Administration. Ms. Morrow oversees the preparation and submission of both research grants and scientific manuscripts.

The primary activity in the CER is the Aerobics Center Longitudinal Study (ACLS), conceived by Dr. Kenneth Cooper in 1970 and funded by the National Institute on Aging since 1984. In 2002, the study’s principal investigator, Dr. Blair, received the prestigious NIH MERIT award in recognition of the large contribution his research in the ACLS has made to public health. This award ensures federal support for the study until 2010. The ACLS population includes all men and women who have had a comprehensive preventive health exam or other medical services at the Cooper Clinic. Approximately 80,000 participants have been enrolled in the ACLS through 2004. The unique element of the ACLS is that each participant completes a maximal exercise treadmill test to assess his or her level of cardiorespiratory fitness. The ACLS is the world’s largest database that allows researchers to examine the relationships between fitness and other health-related factors such as body fat, cholesterol, and blood pressure to the development of diseases including diabetes, heart disease, and cancer. The ACLS has provided critical scientific information that has helped to develop current public health and preventive medicine recommendations on physical activity. Study findings published in 1989 in the *Journal of the American Medical Association* showed that men and women with moderate levels of cardiorespiratory fitness had nearly a 50% lower rate of death from all causes including cardiovascular disease compared with their peers who had low fitness levels (*Figure 3*). Individuals with

![Figure 3. All-cause Death Rates by Level of Cardiorespiratory Fitness](image)
high fitness levels had even lower rates of death compared with moderately fit participants. Additional research conducted in the ACLS showed that most individuals can achieve moderate fitness levels through physical activities that elevate breathing and heart rate, such as brisk walking, performed for at least 30 minutes, 5 or more days per week. These ACLS findings underpin the national consensus recommendation for moderate levels of physical activity to lower disease risk and promote longevity.

**Does an Active and Fit Way of Life Influence “The Metabolic Syndrome”?**

Many new and exciting scientific discoveries have emerged from research in the ACLS.

The medical community has recently focused much attention on a condition termed “the metabolic syndrome.” This syndrome occurs when individuals have 3 or more of these health-related risk factors:

- Abdominal obesity (“apple-shaped” fat distribution).
- High blood pressure.
- High blood sugar.
- High serum triglycerides.
- Low levels of high-density lipoprotein (HDL) cholesterol (“good” cholesterol).

The presence of metabolic syndrome increases the risk for both cardiovascular disease and diabetes. Unfortunately, treatment strategies for this condition have not been well established. Traditional drug therapy targeting each of the components of metabolic syndrome is costly and may be associated with adverse effects. However, physical activity is an inexpensive and safe therapeutic option with proven benefits in regulating all components of the metabolic syndrome.

Scientists at The Cooper Institute therefore believe that metabolic syndrome should be considered a “physical inactivity” syndrome. Dr. Radim Jurca of The Cooper Institute recently showed that the percentage of men in the ACLS with metabolic syndrome was substantially lower among those with moderate and high levels of cardiorespiratory fitness and muscular strength (*Med Sci Sports Exerc* 36: 1301-1307, 2004) (Figure 4). The relationship between muscular strength and metabolic syndrome is particularly important because traditional medical research has focused almost exclusively on the benefits of aerobic exercise; there have been few studies evaluating the benefit of resistance training for disease prevention. These data are the first to show that higher muscular strength confers protection against simultaneous elevations in risk factors for cardiovascular disease and diabetes.

Dr. Stephen Farrell conducted another study among 7104 women in the ACLS that revealed metabolic syndrome to be almost nonexistent in those with moderate and higher levels of fitness (*Obes Res* 12:824-830, 2004).

Additional evidence supporting the importance of cardiorespiratory fitness in reducing the incidence of death associated with metabolic syndrome is depicted.
The relationship between cardiorespiratory fitness and cardiovascular death is shown in 15,466 healthy men and 3757 men who had metabolic syndrome at the time of their medical examinations. The rate of cardiovascular death was more than 50% lower in men with moderate and higher levels of fitness (“fit”) compared with men who had low levels of fitness (“unfit”). This relationship was observed both in men who had metabolic syndrome at baseline and those who were healthy at baseline. These findings are the first to document that moderate to higher levels of cardiorespiratory fitness lower mortality risk in individuals with metabolic syndrome. The data suggest that physical activity should be promoted for disease prevention, not only for healthy individuals but also for those with elevated health-related risk factors.

**Coronary Artery Calcium Identifies Individuals at Risk for Heart Attack**

The electron beam tomography (EBT) scan is an imaging technique used primarily to detect calcium deposits within the coronary arteries of the heart. Coronary artery calcium is found only in blood vessels with atherosclerosis, or “hardening of the arteries.” Since 1995, over 25,000 men and women have undergone EBT scanning at the Cooper Clinic (**Figure 6**).

The scan takes only minutes to complete and produces images similar to those shown in **Figure 7**. The image on the left shows coronary arteries with no detectable calcium. In contrast, the image on the right shows coronary arteries with a substantial amount of calcium. The amount of coronary artery calcium detected by EBT has been used to classify an individual’s risk for having a coronary event, such as a heart attack. However, scientific evidence supporting this relationship has been limited. Dr. Tim Church and other ACLS investigators recently examined
the relationship between coronary artery calcium levels and risk of coronary events in over 10,000 men and women who had no symptoms of coronary disease at the time of scanning (Figure 8). After accounting for sex, age, and established coronary risk factors (blood pressure, cholesterol, and smoking), a significant incremental rise in the risk of heart attack and coronary death was observed as coronary calcium levels increased. Individuals with high levels of coronary calcium had a greater than nine-fold higher risk of heart attack or coronary death compared with those who had no detectable calcium. These data indicate that EBT scanning for coronary artery calcium may serve as an important tool for identifying individuals with increased risk of heart attack, allowing physicians to implement early medical interventions prior to a coronary event.

**Higher Fitness Levels Reduce Coronary Risk in Men With Elevated Coronary Calcium**

Since higher levels of cardiorespiratory fitness have been consistently correlated with better health outcomes in the ACLS, investigators at The Cooper Institute hypothesized that cardiorespiratory fitness might also protect against coronary events in individuals with high levels of coronary artery calcium. Dr. Shannon FitzGerald and colleagues studied 800 men in the ACLS who had significantly elevated coronary artery calcium levels. As shown in Figure 9, a graded reduction in the rate of coronary events was observed across levels of cardiorespiratory fitness. This relationship was preserved after accounting for age, smoking history, body size, electrocardiogram abnormalities, and other coronary risk factors. These data are the first to show that moderate and higher levels of fitness confer protection against heart attack in men at high risk for coronary events due to elevated coronary artery calcium. Dr. FitzGerald reported these findings at the 2004 annual meeting of the American College of Sports Medicine.

**The Center for Epidemiological Research Has International Connections**

As part of an international collaboration, CER investigators are sharing their expertise on issues pertaining to physical activity, fitness, and health. Dr. Blair has worked closely with Japanese researchers in the Tokyo Gas Study. One investigation showed that higher fitness levels protected against the development of diabetes; another study showed that moderate and higher fitness
levels significantly lowered the risk of death from cancer. Research in the ACLS has produced similar findings.

In another collaboration, CER investigators are working with researchers at Queen’s University in Ontario, Canada. Images of the abdomen are taken during the EBT scan performed on ACLS participants at the Cooper Clinic. The scans are mailed to researchers at Queen’s University who then process the images and examine the relationship between abdominal fat storage and health risks. Several papers from this study have been published in the scientific literature demonstrating that higher levels of deep abdominal fat storage correlate with increased risk factors for developing cardiovascular disease and diabetes. Importantly, individuals with higher fitness levels appear to be protected against excessive increases in health-related risk factors, even when they have high abdominal fat stores. This cutting-edge research is the first and largest study of its kind.

In summary, the CER continues to conduct meaningful and innovative research in the ACLS. Future plans include:

- Studying health benefits in terms of muscular strength and resistance exercise habits as well as nutritional habits in men and women.
- More intensive investigations in women’s health.
- Evaluation of coronary artery calcium levels as a predictor of heart disease risk in women.
- Studies on bone density and other health risks such as osteoporosis and cancer.
- A comparison of the risk for injuries to muscles, bones, and joints in Dallas-area women who are sedentary versus those who are physically active.

A gift from Nancy Ann and Ray Hunt has enabled investigators to enhance the level of research conducted in the CER. The Cooper Institute thanks Mr. and Mrs. Hunt and others who have provided financial support and other assistance to help the CER remain a leader in the fields of preventive medicine and public health.
The Oak Cliff Center: Expanding South Dallas Location

Established in summer 2002, the Oak Cliff Center, previously housed in less than 500 square feet, has recently moved to a new 4400 square foot location. The new site has an exercise area, additional office space, a conference room, and an indoor walking track.

The Cooper Institute’s primary purpose in opening a South Dallas facility was to enhance minority recruitment for its studies. Oak Cliff and its 6 surrounding suburbs represent a historically underserved and diverse area of Dallas County. The Oak Cliff Center is now an integral part of the Institute’s clinical research program. The center not only serves as a study site for three large ongoing clinical trials supported by competitive grants funded by the NIH, but also has contributed substantially to public health programs in Oak Cliff communities.

The “Program of the Month” is a monthly meeting to discuss a variety of health and wellness topics. In recognition of diabetes as a major public health problem, the center has established a recurring 6-lecture series (including a cooking class!) focusing on prevention, diet, and treatment of diabetes. Ruben Rodarte, MS, chairs the Yo Cuento/I Count campaign committee, funded by the North Texas Councils of Government, to increase the number of people walking within the Bishop Arts District of Oak Cliff. This initiative not only encourages individuals to walk for health benefits, but also improves air quality by having fewer motor vehicles on the road.

The Ambassador Program, currently comprised of 15 former Oak Cliff study participants, is a continuing education program focusing on a variety of medical, health, wellness, and behavioral topics. Participants meet on a monthly basis. The curriculum also incorporates physical activity sessions. The group will take part in “Walk Across Texas,” an 8-week walking program for teams of 8 individuals. The goal of the program is for each team to log 830 miles (the distance it would take to walk across Texas). The Ambassadors also help to disseminate health-related information to the larger Oak Cliff community.

In addition to these programs, the center has been involved in numerous local health fairs and has hosted a pastoral breakfast for 6 of the area’s church congregations to introduce the mission and purpose of the center. The center is also a member of the Oak Cliff Chamber of Commerce and the Greater Dallas Hispanic Chamber of Commerce, and serves on the advisory boards for The Texas Cooperative Extension, Methodist Hospital Senior Access, and the Yo Cuento/I Count campaign.

The Cooper Institute is indebted to Ray and Lois Robbins for providing financial support to help defray the operating costs of the new Oak Cliff Center.
Post-Menopausal Women and Exercise Study Is Coming to a Conclusion

Time flies! It seems like just yesterday that the first participants were enrolled in the Dose Response to Exercise in Post-menopausal Women (DREW) study. Now in its fourth year, the last of the 450 DREW participants will be enrolled late in 2004. The DREW study aims to identify the optimal dose of exercise required to maintain cardiovascular health in post-menopausal women. It is one of the largest and most complex single-center exercise studies ever undertaken in this patient population. Over the past year, the study exceeded its recruitment goal. The retention rate is extremely high (>93%), and participants’ adherence to their assigned exercise prescriptions is exceptional (>98%). Results of the DREW study will undoubtedly refine public health and clinical recommendations for this group of individuals.

Although this study is not yet completed, it has already produced two publications. In February 2004, Gina Morss, MA, and associates published a methodological paper describing the DREW study design and rationale in *Medicine & Science in Sports & Exercise*. Dr. Radim Jurca and colleagues published a second paper in the *American Heart Journal* demonstrating that 8 weeks of moderate aerobic training increased heart rate variability (HRV) in sedentary post-menopausal women. Previous studies have shown that reduced HRV is associated with increased risk of cardiac events and death in healthy individuals. In this study, HRV increased after only 8 weeks of exercise training, demonstrating improved electrical functioning of the heart.

Testimonials About the DREW Study:

*DREW has changed my life completely. I watch my weight and the foods that I eat. I walk daily. DREW has become a part of my everyday life.*

*Ruth Williams*

*I never exercised before joining the DREW study. I now try to exercise at least 3 times per week and eat smaller portions. I enjoy sharing the information that I have learned about exercise and nutrition with family and friends. I feel blessed to have had this opportunity. Thank you.*

*Tina Arredondo*

Exercise and the Elderly

Each year a larger percentage of our society enters the “golden years.” Persons aged >70 years represent the fastest-growing segment of the US population. While prolongation of life remains an important public health goal, extended life must involve preservation of the capacity
A Multivitamin Reduces C-Reactive Protein

C-reactive protein (CRP), a marker of systemic inflammation, has been labeled “the cholesterol of the next century.” Elevated plasma levels of CRP are associated with an increased risk for cardiovascular disease and diabetes. Unfortunately, there are few proven therapies to reduce CRP levels. Last year, Dr. Tim Church and colleagues showed that 6 months of multivitamin use (*Cooper Complete®, Dallas, TX) can substantially reduce CRP, particularly in individuals with elevated CRP levels (Figure 10). This exciting finding was published in the American Journal of Medicine in December 2003, and marked continuation of research at the Institute on vitamins and nutritional supplements.

Exercise and C-Reactive Protein

Dr. Tim Church was recently awarded a $2 million NIH research grant to explore the effects of exercise training on CRP levels. This 4-year project will involve more than 200 participants. In addition to CRP measurements, this study will examine the effects of exercise training on both internal abdominal fat stores (visceral fat) and HRV. Study participants with elevated CRP levels will be randomly assigned to either a non-exercise control group or to 4 months of supervised aerobic exercise training. The primary study outcome is the difference in change in CRP levels between these 2 groups.
NIH grants are extremely competitive, and it is unusual for a young scientist to receive such a large NIH grant less than 5 years after completing his formal training. Congratulations to Dr. Church for his outstanding accomplishment!

**Fitness, Fatness, and Diabetes**

Although most patients with diabetes receive counseling by their physicians regarding the importance of maintaining a healthy weight, these patients often do not receive counseling regarding the importance of regular physical activity. Investigators at The Cooper Institute recently evaluated 2196 men with diabetes who were examined at least once at the Cooper Clinic between 1970 and 1995 and who completed at least 1 year of follow-up. Participants were part of the ACLS cohort and were followed for mortality from their baseline examination until their death or until December 31, 1996. The findings of this study were very intriguing and were recently reported in *Diabetes Care*. The study showed that fitness had a strong and independent inverse association with mortality in men with diabetes. In fact, obese men with diabetes who were physically fit had lower death rates than patients who had normal weight but were unfit (*Figure 11*). These results suggest that clinicians should counsel individuals with diabetes about the benefits of increasing activity and improving fitness. Such efforts may lead to improved health for the more than 18 million Americans with diabetes.

**Healthy Arm Vessels = Healthy Heart Vessels**

Scientific research has shown that the health of the major blood vessel in the arm can predict the health of the blood vessels of the heart. Using ultrasound technology (and a very steady hand), the Institute has been exploring the effect of exercise training and nutritional supplements on the vascular health of the arm. Few centers in the world have used this measurement, called flow-mediated dilation, to evaluate the effects of exercise.

Flow-mediated dilation quantifies changes in blood flow in the vessels of the arm in response to an external disturbance. In this procedure, the major blood vessel of the upper arm (the brachial artery) is identified and carefully monitored with an ultrasound scanner while blood flow to the arm is restricted with a tourniquet. After 5 minutes, the tourniquet is quickly released, and the change in size of the blood vessel is recorded using the ultrasound machine. A sophisticated computer program is then used to quantify changes in the size of the vessel. When the tourniquet is released, healthy vessels have a large increase in size while diseased vessels do not. This technique provides a measure of the health of an individual’s blood vessels, including the heart vessels, without using a needle or other invasive procedures. This valuable tool has been incorporated into nearly all of the Institute’s ongoing clinical trials.

![Figure 11. Risk of Death in 2196 Men With Diabetes by Categories of Fitness and Fatness](image-url)
In 1996, The Cooper Institute was awarded the honor of hosting the International Pre-Olympic Scientific Conference in Dallas, Texas. An outgrowth of this conference was the initiation of The Cooper Institute Scientific Conference Series, developed with the goal of stimulating scientific research related to all aspects of physical activity and public health.

In October 2003, the Institute hosted its sixth annual conference, “Physical Activity and Mental Health: A Multidisciplinary Approach,” chaired by Dr. Heather Chambliss of The Cooper Institute and Dr. Madhukar Trivedi of The University of Texas Southwestern Medical Center. This conference attracted 105 attendees from 6 countries. The NIH and the CDC were major supporters of the conference. Key topics included:

- Physical Activity and Mental Health
  - Public Health and Economic Considerations.
- Human Brain Mapping: Potential Applications for Physical Activity and Mental Health Research.
- Benefits of Exercise in the Treatment of Mood Disorders.

In October 2004, the Institute held its seventh annual conference, “Increasing Physical Activity in Populations: Understanding Diffusion and Dissemination.” This meeting was chaired by Dr. Dave Buller of The Cooper Institute – Denver and Dr. Everett Rogers of The University of New Mexico. The aims of the conference were to discuss ways to further the dissemination of consensus public health recommendations for evidence-based physical activity interventions and to communicate research results to practitioners and the lay public. US Surgeon General, Vice Admiral, Richard H. Carmona, MD, MPH, addressed the conference and stressed the public health importance of promoting regular physical activity. Key topics included:

- Defining the Processes of Dissemination Within the Public Health Context.
- Identifying Successful Dissemination Models.
- Research on Strategies for Disseminating Programs and Policy Change to Increase Physical Activity.
- Potential Agendas for Research Scientists and Public Health Practitioners in Dissemination and Diffusion.

Plans are underway for the 2005 conference, which will focus on the childhood obesity epidemic.
The Center for Research Dissemination, led by Ruth Ann Carpenter, MS, RD, LD, works with Cooper Institute researchers and educators to provide resources and training for different target groups (consumers, health and fitness professionals, corporations, and communities) to enhance both health and well-being.

From 1994 through 2001, The Cooper Institute was actively involved in studies comparing a lifestyle approach to physical activity with a traditional structured exercise program. Each approach was designed to improve fitness, physical activity, and other health-related parameters such as blood pressure, blood cholesterol, and body weight. While the structured-exercise participants “worked out” at a fitness center, the lifestyle participants received information via weekly small group meetings or monthly mailings that focused on helping them enhance the level of physical activity in their daily lives. Both the Project Active and Project PRIME (Physically Ready For Invigorating Movement Everyday) studies showed improvements in health outcomes that were similar in both the lifestyle and the structured-exercise groups. Scientific articles detailing the efficacy of the lifestyle approach generated significant interest among scientists, health professionals, and the public.

The center subsequently adapted the curriculum and processes from the scientific studies for use in numerous commercial and community-based programs and consultancies (Figure 12). These have included books, training workshops, curriculum licenses, and contracts for technical assistance. The royalties, licensure fees, and work-for-hire agreements from these projects have added revenue for the ongoing operation of The Cooper Institute.

The Center for Research Dissemination is currently using this dissemination model to translate the curriculum and processes from the Lifestyle Nutrition Study (LNS) into educational programs for diverse audiences that focus on nutrition. For example, Human Kinetics, Inc., a corporation specializing in the dissemination of information to the health and fitness field, has contracted with The Cooper Institute to adapt the LNS curriculum for a consumer-level nutrition program called “Healthy Eating Every Day (HEED).” The HEED program will include training for facilitators, marketing tools for licensees, and a web-based support system in addition to an interactive book and online program. The anticipated launch for HEED is April 2005. The LNS materials have also been adapted for use in The Cooper Institute’s Clinical Weight Management Program (page 26) and in curriculum development for WISEWOMAN, a cardiovascular risk-reduction program for underserved women sponsored by the Illinois Department of Health and the CDC.

**What’s Next?**

In the future, the staff of the Center for Research Dissemination will continue to work with Cooper Institute researchers and educators to provide evidence-based resources and training. Additionally, the center will build an infrastructure of staff and resources and will cultivate partnerships with other organizations to more effectively create and disseminate programs and products.
Figure 12 shows how research on lifestyle-based physical activity has been translated by the Center for Research Dissemination into numerous programs and products.
Obesity is one of the most significant public health problems in the United States. Currently, 65% of adults and approximately 30% of children and adolescents are either overweight or obese. Millions of individuals will suffer from the negative consequences of this disorder, which include significantly diminished quality of life, poor health, and decreased longevity.

In response to the obesity epidemic, The Cooper Institute’s Center for Weight Management, directed by Jody Wilkinson, MD, was developed in July 2000. Its mission is to “Provide overweight and obese individuals the opportunity to achieve and maintain their “healthy” weight using a state-of-the-art lifestyle approach.” A healthy weight is the weight achieved and maintained by each individual through a balanced and personalized approach to healthy eating and regular physical activity.

Now in its fourth year, the Center for Weight Management is a leader in the field of weight management and obesity treatment. The program offers long-term, medically supervised weight management and has a specific focus on long-term behavior change. Patients who complete the 1-year program achieve an average weight loss of 13%. Many of those who complete the program also experience a significant improvement in other health-related risk factors such as fasting blood glucose and serum triglyceride levels. Data on 42 participants who completed baseline, 6-month, and 12-month assessments are shown below (Figures 13, 14, and 15).

The Cooper Institute Center for Weight Management offers a comprehensive lifestyle approach to weight management that is based on scientific research. The program involves a combination of both medical and behavioral treatments designed to enhance both health and
quality of life through permanent lifestyle changes. A state-of-the-art 2-year curriculum (Tools for Lifestyle Change) is taught and reinforced by a team of experts, including a physician, nurse, clinical psychologists, and health educators. This lifestyle-based approach is very effective because it utilizes each participant’s unique lifestyle as a foundation for providing the professional and compassionate care required for long-term success.

**The Cooper Institute and the Michael & Susan Dell Foundation:**
**Finding Innovative Programs for Reducing Childhood Obesity in the United States**

The Cooper Institute is partnering with both key opinion leaders in the field of obesity and the Michael & Susan Dell Foundation (MSDF) to identify and evaluate childhood obesity programs. The partnership was created to identify existing weight management programs that have the greatest potential for effecting a measurable change on the childhood obesity epidemic. A second goal is to create a database of programs that have been quantitatively and qualitatively evaluated, and to make this information available for broad-based dissemination through a variety of networks. The data collected will include information about successful programs, existing resources, developmental needs, and future funding opportunities. Ultimately, the results of this study will be presented to the MSDF, and recommendations for selected program funding will be made.

**Paths for Health**

Paths for Health was a collaboration between The Cooper Institute, Southern Methodist University, and the Family Studies Center to provide a family-based weight management program for obese adolescent females. This pilot study tested the effectiveness of a core curriculum developed by The Cooper Institute coupled with a family communication component. A total of 45 adolescents participated in this 12-week study, with a 90% completion rate. The results of this short-term pilot study were promising, demonstrating changes in both body mass index (ie, how much a child should weigh based on his or her height) and caloric intake. The center plans to continue to develop its adolescent weight management program and is seeking funding to carry out this important work.

The Cooper Institute’s Weight Management Program has truly saved my life. In 2001, I was extremely obese and very ill. My 3 years of participation in the program have been a journey of learning, emotional growth, and extreme health improvements.

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Don R. Hice

I lost 60 pounds through the Weight Management Program by modifying my diet and participating in a vigorous exercise program. This program has changed the quality of my life forever.

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Bill Hunt
helping children and families become more physically active and fit

staff members worked as “expert coaches” on a project sponsored by the CDC called Fit Family Fit Kids (www.fitfamilyfitkids.com). A local Hispanic family (with an overweight 12-year-old daughter, an obese mother, and an obese grandmother) worked with Debra Gill, PhD, from the Center for Weight Management to adopt an active lifestyle. Using behavioral approaches developed through research at The Cooper Institute, this family has incorporated into their lifestyle regular exercise including walking, running, use of exercise balls, and strength training. Their success story will be published in Family Circle Magazine in October 2004 and should offer education and inspiration to other families.

the center for weight management joins forces with Microsoft Corporation

The Center for Weight Management was one of two weight management programs in the Dallas, Texas, area selected by Microsoft Corporation to provide eligible employees education and support in weight management and healthy living. Microsoft Corporation provides employees with a lifetime benefit for weight management services as part of their health insurance policy. However, employees may only participate in weight management programs that meet strict eligibility criteria, such as 6 months or more of intervention, long-term follow-up, individualized support, and professional staff. Four Microsoft employees are currently participating in the center’s program. The center plans to expand corporate relationships in the near future.

using computer technology to assist with lifestyle changes

The center received a grant from HealtheTech, Inc. to evaluate the use of unique computer-based self-monitoring and measurement tools designed to help individuals achieve a healthy weight and implement lifestyle changes. As part of this 1-year study, center staff will develop and test new tools, such as web-based newsletters, telephone-based counseling, and computerized tracking of participants’ lifestyle choices, using the Institute’s proven approaches to lifestyle change.

I lost 100 pounds through the Weight Management Program and have maintained my weight for over 18 months. I now feel totally in control of my life. Due to my weight loss, I no longer have sleep apnea, I do not need medication to lower my cholesterol, and I can participate in more challenging physical activities.

Mary Lou Padilla
Since its inception one year ago, the goal of the Center for Human Performance and Nutrition Research (CHPNR) has been to produce high-quality integrative research in the areas of human performance and nutrition. The center has been very successful in meeting this objective. In 2004 alone, Dr. Conrad Earnest, Center Director, and colleagues have published 9 journal articles, presented 20 meeting abstracts, and have 7 journal articles currently in press.

Exercise and Cancer

There has been emerging interest regarding the influence of exercise in individuals with newly diagnosed cancer and those who are cancer survivors. This interest and enhanced visibility has paralleled cyclist Lance Armstrong’s 6 Tour de France victories. Armstrong, a long-term survivor of advanced testicular cancer, has had continued success in the most challenging of sporting events.

In October 2003, Dr. Earnest and collaborators from Spain published a major opinion paper in the prestigious journal *Lancet Oncology* entitled, “Cancer-related Fatigue: Can Exercise Physiology Assist Oncologists?” (*Lancet Oncol* 4:616-625, 2003). The impact of this paper earned Dr. Earnest an invitation to participate as a co-investigator in a National Cancer Institute (NCI)-funded study, which will be performed at The University of Texas MD Anderson Cancer Center, examining social cognitive theory and physical activity after endometrial cancer. The primary aim of this study is to apply social cognitive theory to improve the understanding of the mechanisms of adherence for endometrial cancer survivors participating in a physical activity intervention.

This same group of investigators recently evaluated the combined effects of aerobic and strength training in breast cancer survivors. This study showed that the combination of aerobic and strength training was superior to either form of exercise alone in enhancing both functional capacity and the ability to perform general tasks associated with activities of daily living.

Nutrition

- **Sports Nutrition and Exercise Performance:**
  Dr. Earnest and colleagues recently published 2 papers in the journal *Medicine and Science in Sports and Exercise*.
  - “Effects of a Commercial Herbal-based Formula on Exercise Performance in Cyclists”
  - “Effects of Oral ATP Supplementation on Anaerobic Power and Muscular Strength”
  Although commercial advertisements suggest that these 2 supplements would increase exercise performance in athletes, the results of both investigations were negative, showing no benefit in supplementing athletes with these over-the-counter products.
- **Cholesterol Research:**
  *Immunoglobulins and Cholesterol:* A major research project from the past year was the evaluation of the effects of a serum- and milk-derived protein component, known as immunoglobulin G, on cholesterol metabolism. The results of this trial showed
small but significant reductions in total and low-density lipoprotein (LDL) cholesterol in those participants who received treatment with an immunoglobulin G supplement.

Immunoglobulin G is a unique ingredient in that it is easily incorporated into a variety of foods, enabling distinctive product development based on consumable food items rather than capsules or pills.

**Phytosterols**: Plant lipids that are naturally present in vegetables, fruits, and grains. Eating foods rich in phytosterols helps to promote normal blood cholesterol levels. When phytosterols enter the digestive tract, they block gastrointestinal absorption of dietary cholesterol into the bloodstream, thus lowering serum cholesterol.

**Omega-3 Fatty Acids**: Polyunsaturated fatty acids found in certain cold-water fish such as salmon and mackerel and plant sources including vegetable oils, wheat germ, flax seeds, soybeans, tofu, leafy greens, and walnuts. Omega-3 fatty acids may help to:

- Reduce the risk of heart attack by preventing blood from clotting and adhering to coronary artery walls.
- Improve mood and decrease depression.
- Improve inflammatory disorders such as rheumatoid arthritis.
- Decrease the risk for cancer.

Both total and LDL cholesterol. One of the most commercially recognizable phytostanols on the market today is a phytostanol-enhanced margarine that was evaluated in a multi-center trial led by scientists at The Cooper Institute. The margarine lowered LDL cholesterol in patients who were already taking a statin drug, but still had elevated LDL cholesterol. So, out with the margarine and in with functional foods!

Another exciting study to be performed at the Institute will evaluate the use a phytosterol capsule for Cargill Industries, a major privately held company with an active interest in developing functional food technologies through one of their subsidiaries, Cargill Health & Food Technologies. Based on Cargill’s expertise in functional food development, phytosterols are now incorporated into a variety of foods including coffee, coffee creamers, beverages, and whole food products. A recent innovative use of Cargill’s phytosterol product is its incorporation into orange juice.

**Vitamin Research**

The CHPNR is continuing research on *Cooper Complete®* vitamins by investigating Basic One® (a new one-a-day multivitamin supplement), both alone and in combination with omega-3 fatty acids. The center’s goal is to examine the potential synergistic effects of the combination of omega-3 fatty acids and multivitamins with regard to LDL cholesterol oxidation, heart rate variability, and vascular reactivity.

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**Definitions:**

*Whole Food*: Any food eaten in its entirety without breaking it into individual components prior to ingestion.

*Functional Food*: Food that has components or ingredients added to give it a specific medical or physiological benefit, rather than a purely nutritional effect. Also known as nutraceutical.

*Immunoglobulins*: Antibodies that provide protection against infectious agents.

*Phytosterols*: Plant lipids that are naturally present in vegetables, fruits, and grains. Eating foods rich in phytosterols helps to promote normal blood cholesterol levels. When phytosterols enter the digestive tract, they block gastrointestinal absorption of dietary cholesterol into the bloodstream, thus lowering serum cholesterol.

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- Reduce the risk of heart attack by preventing blood from clotting and adhering to coronary artery walls.
- Improve mood and decrease depression.
- Improve inflammatory disorders such as rheumatoid arthritis.
- Decrease the risk for cancer.

*Phytostanols*: Phytonutrients that show many health benefits. For example, phytosterols and phytostanols have been shown to reduce both total and LDL cholesterol. One of the most commercially recognizable phytostanols on the market today is a phytostanol-enhanced margarine that was evaluated in a multi-center trial led by scientists at The Cooper Institute. The margarine lowered LDL cholesterol in patients who were already taking a statin drug, but still had elevated LDL cholesterol. So, out with the margarine and in with functional foods!

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*Cooper Complete is owned by Cooper Concepts, Inc., which pays the Institute for the costs associated with product research, see Footnote 3

The Cooper Institute has 2 important components of its mission: research and education. The Division of Education and Certification, led by Susan Sterling, EdD, Vice President, conducts approximately 125 courses each year around the world, serving over 6000 professionals who work in health clubs, hospitals, worksites, law enforcement, public safety, government organizations, and the military. The knowledge gained by these graduates, in turn, affects hundreds of thousands or even millions of other individuals by helping them enhance their health-related behaviors. Thus, the educational reach of The Cooper Institute is extensive due to the multiplier effect of our “train-the-trainers” model.

**Major clients include:**
- **Federal Agencies**
  - US Customs Service
  - US Marshals Service
  - Secret Service
  - Drug Enforcement Agency
  - Federal Bureau of Prisons
  - Department of Defense
  - Immigration and Naturalization
  - Border Patrol
  - Internal Revenue Service
  - Federal Bureau of Investigation
- **Branches of the Military**
  - US Coast Guard
  - Navy
  - Army
  - Air Force
  - Marines

The Cooper Institute is an international leader in the design and implementation of health- and fitness-related educational courses. These include:

**Basic Certifications**
- Physical Fitness Specialist
- Physical Fitness Specialist for Law Enforcement
- Master Fitness Specialist
- Health Promotion Director
- Group Exercise Leadership
- Coaching Healthy Behaviors

**Specialty Certifications**
- Biomechanics of Resistance Training
- Optimal Performance Training
- Fitness Specialist for Older Adults
- Providing Dietary Guidance
- Indoor Cycling
- Aquatics
- Team Building
- Pre/Postnatal Fitness Instructor
- Introduction to Fitness Kickboxing
- Focus Pad Training
- American Council on Martial Arts Instructor

**Other Workshops**
- Fit for Duty Seminars
- Self-defense Training
- Evaluation and Outcomes Measurement
- Organizational Stress Management
- Executive Health and Fitness Seminar
- Special Populations

**Division of Education and Certification Seeks National Accreditation**

The division began the labor-intensive process of obtaining National Commission for Certifying Agencies (NCCA) accreditation from the National Organization for Competency Assurance (NOCA). This process requires one to 4 years to complete. While national
accreditation is not mandated for organizations providing fitness certifications, The Cooper Institute is seeking NCCA accreditation to raise the bar of excellence and to ensure the highest quality certification programs for clients. In addition, a Certification Governing Board was established to provide review, approval, and oversight of policies and procedures impacting Cooper Institute certifications, course graduates, and/or the certification renewal program. The board is charged with maintaining “standards of certification” to ensure that graduates, as well as the employers and clients of graduates, experience, effective, safe, and motivational programs.

Certificate Renewal Program

Cooper ELITE (Excellence in Leadership: Improving Through Education) is the certificate renewal program. Certificate holders must earn 30 continuing education units (CEUs) every 3 years to renew their certificates. The division is continually expanding educational opportunities for earning CEUs and updating options on the www.cooperinst.org and www.cooperelite.org web sites, in the products catalog, and on brochures. Options for CEUs include: Internet courses, live courses, books, manuals, college classes, research updates, audiotapes, videotapes, and cardiopulmonary resuscitation training, to name a few. Individuals who have earned a basic or specialty certification from The Cooper Institute may access www.cooperelite.org, a password-protected web site that is continually updated. This web site contains research updates, position papers on topics such as ergogenic aids, business tips, professional training products, and use of E-log, a computerized exercise tracking system. The web site also has information regarding certificate renewal.

The “Quick Series”

The division has collaborated with Luxart Communications to write and/or review educational booklets called the “Quick Series.” These are colorful, laminated pocket guides that are not only easy to read, but also provide excellent information on a variety of topics such as healthy eating, strength training, aerobic conditioning, and senior fitness. Organizations such as worksites or branches of the military purchase them in mass quantities for their personnel. Four guides have been written by the division this year: diabetes, hypertension, cholesterol, and sleep.

Division of Education and Certification Outreach Programs

The Air Force contracted the division to develop and deliver a Health and Fitness Seminar for their executives, “Fit for Duty.” This one-day seminar included topics such as Fitness and Wellness, Coronary Risk Factors, Exercise Benefits and Guidelines, Stress Management, Nutrition, Weight Control, Low
Back Care, and Motivation. This program was so well received that a contract for several more one-day seminars has been awarded. In addition, an opinion paper, Commonly Asked Questions, regarding fitness programs in law enforcement has been updated and posted on the www.cooperinst.org web site. This information has proven valuable in helping federal, state, and municipal agencies make decisions about fitness standards and programming for their agencies that are effective and legally defensible.

The division has been working with Indian Health Services and selected Native American tribes to train individuals in these communities to implement health and fitness programs. These programs help in the prevention and treatment of diabetes. Courses offered include Physical Fitness Specialist, Special Populations, Group Exercise Leader, Coaching Healthy Behaviors, and Health Promotion Director. By earning these professional certifications, Native American leaders can create and conduct educational and fitness programs that will help individuals make positive behavior changes to improve their health.

**New Workshops and Certifications**

A new workshop has been designed for public school teachers to improve physical education programming through Physical Education Professionals grants and other corporate sponsorships. To date, this workshop has been successfully delivered in Jamestown, New York; Houston, Texas; and Joliet, Illinois, and the division has plans for program expansion to other cities.

The division has also worked with the martial arts industry for several years to provide: 1) a fitness and safety certification for martial artists in conjunction with the American Council on Martial Arts; 2) a Fitness Kickboxing specialty certification, and 3) Focus Pad Training. Recently, a video home study course was developed, “Self-Defense Training.” This new workshop is not only designed for martial artists and fitness professionals, but also for the transportation industry (such as the airlines) and the general public.

Finally, the division conducted the Physical Fitness Specialist for Busy Professionals Certification at the University of South Carolina, Columbia. This is a hybrid course in which the student initially reviews videotapes and a course manual in a home-study format, then travels to selected sites for a 2-day course practicum and certification testing.

**New Initiatives and Future Plans for the Division of Education and Certification**

Construction of a state-of-the-art auditorium with enhanced audiovisual and computer technologies will allow for expansion of on-site education programs. Certification courses as well as continuing education opportunities are planned, and
collaborative efforts are in progress to create and implement e-learning courses (see page 35).

The division plans to develop new courses, educational materials, and products for 6 groups of professionals: 1) personal trainers, 2) worksite wellness programs, 3) group exercise leaders, 4) martial artists, 5) physicians, and 6) public safety/military personnel. In addition, the division will create CEUs and continuing medical education (CME) programs such as enduring materials, e-learning, and live courses for each of these groups. Collaboration with established CME providers will ensure continuing education credit toward license renewal for physicians.

Upgrades to the online registration and tracking systems will enhance the efficiency required for expansion of the certificate renewal program and accommodation of new hybrid courses (on-demand courses offered in various locations other than Dallas, Texas). This work will be done in conjunction with the design of a new Cooper Institute web site, to provide for a seamless transition for both Cooper customers/web site browsers as well as the division’s administrative staff.

As a key member of the Personal Development Project Team, your hard work and perseverance have been instrumental in creating the tools and opportunities allowing our sailors and our Navy to excel. Your active participation in our training and education initiatives has been critical in developing and defining the architecture for tomorrow’s Navy.

Letter to Dr. Susan Sterling from H.G. Ulrich, Director, Task Force Excel, Department of the Navy

In response to customer requests for new courses, and ongoing efforts to upgrade courses, the division is developing a scannable feedback form that will replace the current marketing survey. Information from this new evaluation form will be stored in a database, and a summary report will be immediately available following each course for review by staff. In addition, the quality of feedback to students regarding their written exams will be enhanced through a new “Feedback Report.” This report will provide specific information as to the number of incorrectly answered questions in key content areas and give the student corresponding recommendations for areas of additional study.

The Personal Energy Plan (PEP) is a two-part program providing step-by-step ways to boost energy and vitality through healthy eating and physical activity.
As part of The Cooper Institute’s commitment to advancing e-learning applications to deliver instruction through technology, the Division of Education and Certification initiated a pilot study to create its first online course. This project was conceived after an extensive 6-month evaluation by an internal e-learning task force, comprised of several key individuals from both the Institute’s academic and research groups.

The primary goals of the Institute’s e-learning task force were: 1) to investigate the developmental pathways followed by other organizations, 2) to develop an optimum profile for an Institute-wide learning management system, and 3) to solicit input from e-learning experts and vendors regarding the cost and feasibility of establishing a learning management system. This study concluded that the development of an e-learning system would enhance the leadership role of The Cooper Institute and exponentially expand its market reach.

The Division of Education and Certification identified the Physical Fitness Specialist certification as its initial course using e-learning applications. Currently, instructional materials are being modified to allow for a seamless transition into the dynamic presentation and communication standards required for online presentations. The next steps include design and development of a core learning management system that will optimize utilization of educational materials by both students and course instructors.

**Figure 16** from the anatomy section of the Physical Fitness Specialist course uses some of the latest software to show students the detailed kinetic movement of the human body during exercise.

**Figure 17.** Comprehensive illustrations now enable instructors to highlight precise muscle groups with unsurpassed visual clarity enabling them to emphasize specific exercises needed to strengthen these areas.

The scientists and staff at the Cooper Institute – Denver work in one of three centers: the Center for Behavioral Sciences Research, the Center for Health Communication, or the Center for Research Methods and Biometrics. The Cooper Institute – Denver is directed by David Buller, PhD. The Center for Behavioral Sciences Research moved to The Cooper Institute – Denver when Andrea Dunn, PhD, Center Director, relocated to that office. The Survey Research Unit, also housed in Denver, provides online and telephone interviewing services to scientists throughout The Cooper Institute as well as to outside clients.

Research activities focus on creating and evaluating innovative approaches to effectively reduce the risk of chronic disease by understanding risk factors, evaluating prevention methods, and testing communication strategies. Prevention strategies are intended primarily to reduce the risk of cardiovascular disease, cancer, and depression. Scientists also develop innovative approaches to research design, data management, and statistical methods and for the exploration of communication, behavioral, and epidemiological issues.

**The Influence of News Media in Public Opinions About Cancer**

How much are public opinions about health and disease influenced by the news media? Erwin Bettinghaus, PhD, Snip Young, PhD, and Jenifer Voeks, PhD, have received a new grant from the NCI to evaluate how public perceptions of risks for cancer are associated with news coverage of those risks. Risks that will be closely examined include tobacco use, exposure to ultraviolet radiation from sunlight, and diet. Public perception of risk, the social costs of a disease, and the need for effective policy to reduce the risk of developing cancer can influence community actions. Researchers from The Cooper Institute are collaborating with others at Colorado State University who have identified news stories on cancer-related topics from a database of newspapers, news magazines, and both local and national television news programs. After assessing and classifying the cancer risk factors detailed in these stories, researchers will examine responses from a national survey of adults performed by the NCI to determine whether public attitudes and perceptions of cancer and its risks are similar to media reports. The results of this Health Information National Trend Study will inform professionals and the public on methods to improve media coverage of cancer-related issues and policies aimed at reducing the occurrence of this disease.

**Helping Utah Control Tobacco Use**

Drs. Young and Voeks evaluated the success of the Tobacco Prevention and Control Program sponsored by the Utah Department of Health. They surveyed youth (ages 13 to 17 years) and adults (18 years and older) about their recall of, impact of, and support for a statewide media campaign to reduce smoking. The Utah Anti-tobacco Media Campaign was associated with exceptional recall among youth (92% of participants recalled it), adult smokers (96%), and nonsmokers (92%). Youth reported that the advertisements were not only convincing but also increased their awareness about the negative effects of smoking.
tobacco use and secondhand smoke. This campaign currently has tremendous public support among both adult smokers and nonsmokers.

“Go Sun Smart” Goes Nationwide

The National Ski Areas Association will distribute the Center for Health Communication’s educational program on sun safety, “Go Sun Smart” to its member ski resorts throughout the United States and Canada in 2004 and 2005. Dr. Buller led a group of health communication experts in developing “Go Sun Smart” with funding from the NCI. This program successfully reduced the incidence of sunburn among employees at ski resorts through education regarding the benefits of sun protection while working outdoors.

The National Ski Areas Association has adopted “Go Sun Smart” as its newest partners program. Ski resorts will receive a basic package of “Go Sun Smart” educational materials at the start of the 2004-2005 and 2005-2006 ski seasons. Researchers obtained a second grant from the NCI to support this distribution and to study how well ski resorts implement the program. In pilot testing, the program’s success was greatest at ski resorts where managers used the full program, rather than selected parts. Thus, The Cooper Institute researchers will evaluate the level of assistance required for ski resort managers to successfully implement the complete program.

Use of Ski Helmets Is on the Rise

An increasing number of skiers and snowboarders are using helmets, which cover the head, ears, and neck, and block the sun. Researchers on the “Go Sun Smart” program evaluated the use of helmets when they interviewed over 6000 resort guests regarding sun protection. The interviews were conducted while riding on chairlifts with guests. In 2001, 12% of skiers and snowboarders were wearing helmets, while in 2002, this percentage had increased to nearly 20%. Experts, snowboarders, those who spent more days skiing or snowboarding, and well-educated guests used helmets the most.

Evaluation of Strategies for Distributing a Tobacco Prevention Program to Schools in Colorado

Drs. Buller and Young evaluated 2 dissemination strategies to promote the use of “Consider This,” a web-based tobacco prevention curriculum, by middle, junior high, and senior high schools in Colorado. They sent promotional letters from local leaders in the public health field to health education teachers throughout Colorado in December 2003. These teachers also received a brochure containing testimonials about “Consider This” from teachers who had used it in 2001-2002. The investigators studied The Cooper Institute web server to
determine whether teachers and students used “Consider This” during the spring semester. They also interviewed teachers in spring 2004 to obtain their reactions to the program. The letters from local leaders increased visits to the web site by students and teachers. Determining effective dissemination strategies for school health communication programs is an important goal of researchers in the Center for Health Communication to ensure that these programs are used to their full potential. Visit www.considerthisusa.net and follow the simple procedures described to register for the “Consider This” program.

**Use of E-mail for School Health Education Programs**

Joan Hines, MPH, and Dr. Voeks are investigating how children use e-mail for schoolwork to determine whether e-mail is an effective delivery system for health education. During the 2004-2005 school year, Ms. Hines will survey 200 eighth grade students in both the fall and spring semesters to determine: 1) the number of e-mail accounts, 2) whether e-mail is reserved for completing school work, 3) the rate of change of e-mail addresses, and 4) the location where students read their e-mail. This information will be used to design messages on tobacco prevention that will be delivered to children by e-mail as a component of the “Consider This” smoking prevention program. Researchers at The Cooper Institute found that “Consider This” produces unfavorable attitudes toward smoking and the belief that fewer children smoke among children who use this program. One study showed that significantly fewer children who used the program reported smoking a cigarette over the past month than children who did not use it. Ms. Hines will test whether children who use the program at school read the e-mail, answer questions from the program and visit the web site after receiving these e-mail messages. The Colorado Tobacco Research Program funds this pilot study.

**Web Site Supports Local Activists Working to Improve Tobacco Control in Colorado Communities**

Coalitions of local residents in communities throughout Colorado are actively working to improve tobacco control by reducing secondhand smoke exposure and deterring youth from utilizing tobacco products. Their actions are supported by a partnership between The Cooper Institute and the Colorado Department of Public Health and Environment (CDPHE) funded by the NCI. In 2003-2004, The Cooper Institute and CDPHE provided financial support to 25 such community coalitions.

Researchers at The Cooper Institute also created 2 web sites to provide online assistance to community coalition members for planning and conducting local tobacco-control activities. A Core web site provided basic information on tobacco control. An Enhanced web site included online tutorials, monthly calendars, the latest news on tobacco control, webcasts on tobacco-control topics, and communication functions such as e-mail to state tobacco control professionals and online forums for local activists.

Community coalitions were assigned to access either the Core or Enhanced web sites between November 2002 and May 2004. Investigators from The Cooper Institute are in the process of evaluating performance to determine which web site offered the best assistance. To do this, investigators surveyed community
coalitions, government officials, business leaders, and local residents about tobacco-control activities and policies. They also recorded all local public policies concerning secondhand smoke and youth access to tobacco products, and monitored local newspapers for tobacco-related stories. Data analyses will be undertaken in 2004-2005 to describe how communities reacted to local efforts to enhance tobacco control.

**A True Challenge!**

Only extremely fit individuals outlast most on the “Survivor” television program. Even some of the most fit individuals are voted off the island. Now everyone can succeed in a true “survivor” challenge. Dr. Dunn recently teamed with Accusplit, Inc. and Klein Buendel, Inc. to develop a “Survivor Pedometer” with a 14-week physical activity and healthy nutrition challenge. These colorful packages are available online at CBS Television.

**Visual Acuity May Aid in the Diagnosis of Multiple Sclerosis**

Monika Baier, PhD, was awarded a grant from the National Multiple Sclerosis Society to test contrast letter acuity in patients with multiple sclerosis. Visual symptoms such as loss of color vision, differentiating objects at fine contrast, blurring of vision, and progressive loss of vision are among the most common manifestations of this disease. The Multiple Sclerosis Functional Composite (MSFC), currently used in clinical trials, evaluates leg, arm, and cognitive function but not visual function. Low Contrast Sloan Letter Charts (LCSLC) are good measures of contrast letter acuity. Dr. Baier hopes to show that contrast letter acuity provides additional information as an outcome measure in multiple sclerosis clinical trials by accurately assessing the severity of disease progression and sensitivity to treatment.

**Evaluation of a Novel Strategy to Prevent Chronic Lung Disease in Premature Infants**

A total of 614 premature infants at 14 centers have been enrolled in a randomized, double-blind study to determine whether inhaled nitric oxide gas reduces the incidence of chronic lung disease and death. Infants are randomized to receive the study drug (nitric oxide) or a placebo of room air. Investigators do not know during the study period which patients receive nitric oxide.

The study will complete enrollment within the next year, and all infants will be tested for chronic lung disease for 4 consecutive years. Investigators have currently evaluated 176 infants at 1 year and 66 infants at 2 years following study completion. Results from this study are eagerly awaited.
Colorado Mammography Project Marks its 10th Year Monitoring Community-based Mammograms

Through the Colorado Mammography Project (CMAP), The Cooper Institute – Denver collects information and maintains a large database that includes: 1) results of mammograms, 2) follow-up procedures, 3) diagnosis, 4) treatment, and 5) other correlates of breast cancer such as family history and hormone replacement therapy. These data help to describe the performance of mammography as a screening and diagnostic tool in the community. The database is used by mammography facilities and radiologists to evaluate the quality, accuracy, and technical characteristics of studies performed. It is also used by researchers interested in questions pertaining to mammography and diagnostic outcomes, and by the Breast Cancer Surveillance Consortium (BCSC) in a national data set. Over the past 10 years, mammography facilities along the Colorado Front Range have provided data on 1,312,483 breast exams performed in 389,308 women in Colorado. Twenty-one facilities are currently participating in the project, which is headed by Dr. Voeks.

In April 2004, CMAP hosted the semi-annual BCSC conference. This conference included a general meeting of BCSC investigators and staff, meetings of the steering and publications committees, and a workshop on statistical analysis. Laura Saba, staff statistician, of The Cooper Institute – Denver presented methodology and preliminary results from an ongoing study of hormone replacement therapy and survival in breast cancer patients. Armen Zakharyan, PhD, reported on new software that he developed to match patient records over time with diagnostic information obtained from the Colorado Central Cancer Registry.

The Cooper Institute – Denver
Publications

A principal focus of The Cooper Institute scientists is to publish the results of their research in high-quality, peer-reviewed journals. During the past year, scientists and educators authored or co-authored more than 50 articles that appear in the world’s literature. An additional 13 articles are currently in press, while 12 are under review by various journals. Scientists and educators also are invited to present their work at many major national and international conferences. (Note: Bold denotes employees of The Cooper Institute).


Chambliss HO. Behavioral approaches to obesity treatment. Quest. 2004;56:142-149.


Heesch K, Masse LC, Frankowski RF, Dunn AL. Adherence within and between lifestyle physical activity groups in Project PRIME. J Phys Activity Health. 2004;1:29-44.


We have audited the accompanying statement of financial position of The Cooper Institute (the Institute) as of June 30, 2004, and the related statements of activities and cash flows for the year then ended. These financial statements are the responsibility of the Institute’s management. Our responsibility is to express an opinion on these financial statements based on our audit. The prior year comparative information presented has been derived from the Institute’s 2003 financial statements and, in our report dated September 19, 2003, we expressed an unqualified opinion on those financial statements.

We conducted our audit in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in Governmental Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Institute as of June 30, 2004, and the changes in its net assets and its cash flows for the year then ended in conformity with accounting principles generally accepted in the United States.

In accordance with Government Auditing Standards, we have also issued our report dated September 21, 2004, on our consideration of the Institute’s internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards and should be considered in assessing the results of our audit.

Ernest & Young, LLP

September 21, 2004
# The Cooper Institute

## Statement of Financial Position

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See accompanying notes.
## The Cooper Institute

### Statement of Activities

#### June 30, 2004

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#### Expenses:

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</tr>
<tr>
<td>Total expenses</td>
<td>12,004,720</td>
<td>–</td>
<td>–</td>
<td>12,004,720</td>
</tr>
</tbody>
</table>

#### Increase (decrease) in net assets from operating activities

<table>
<thead>
<tr>
<th>Increase (decrease) in net assets from operating activities</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(277,636)</td>
<td>927,580</td>
<td>100,000</td>
<td></td>
<td>749,944</td>
</tr>
</tbody>
</table>

#### Nonoperating activities:

<table>
<thead>
<tr>
<th>Nonoperating activities: Net realized and unrealized gains (losses) on investments</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>624,466</td>
<td>263,911</td>
<td></td>
<td></td>
<td>888,377</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interest and investment income, net</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>108,937</td>
<td>29,139</td>
<td></td>
<td></td>
<td>138,076</td>
</tr>
</tbody>
</table>

#### Increase (decrease) in net assets from nonoperating activities

<table>
<thead>
<tr>
<th>Increase (decrease) in net assets from nonoperating activities</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>733,403</td>
<td>293,050</td>
<td></td>
<td></td>
<td>1,026,453</td>
</tr>
</tbody>
</table>

#### Net assets released from restrictions

<table>
<thead>
<tr>
<th>Net assets released from restrictions</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>284,466</td>
<td>(284,466)</td>
<td></td>
<td></td>
<td>–</td>
</tr>
</tbody>
</table>

#### Change in net assets

<table>
<thead>
<tr>
<th>Change in net assets</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>740,233</td>
<td>936,164</td>
<td>100,000</td>
<td></td>
<td>1,776,397</td>
</tr>
</tbody>
</table>

#### Net assets at beginning of year

<table>
<thead>
<tr>
<th>Net assets at beginning of year</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,226,142</td>
<td>487,655</td>
<td>3,943,154</td>
<td></td>
<td>14,656,951</td>
</tr>
</tbody>
</table>

#### Net assets at end of year

<table>
<thead>
<tr>
<th>Net assets at end of year</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10,966,375</td>
<td>$1,423,819</td>
<td>$4,043,154</td>
<td>$16,433,348</td>
<td>$14,656,951</td>
</tr>
</tbody>
</table>

See accompanying notes.
## The Cooper Institute
### Statement of Cash Flows

<table>
<thead>
<tr>
<th>Segment</th>
<th>Year ended June 30, 2004</th>
<th>Year ended June 30, 2003</th>
<th>Comparative Totals for the Year ended June 30</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in net assets</td>
<td>$ 1,776,397</td>
<td>$ 717,378</td>
<td></td>
</tr>
<tr>
<td>Adjustments to reconcile change in net assets to net cash provided by operating activities:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>479,029</td>
<td>470,315</td>
<td></td>
</tr>
<tr>
<td>Net realized and unrealized (gains) losses on investments</td>
<td>(888,377)</td>
<td>265,826</td>
<td></td>
</tr>
<tr>
<td>Investment income, net</td>
<td>(137,432)</td>
<td>(122,316)</td>
<td></td>
</tr>
<tr>
<td>Changes in operating assets and liabilities:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>(824,047)</td>
<td>(608,729)</td>
<td></td>
</tr>
<tr>
<td>Prepaids and deposits</td>
<td>10,823</td>
<td>(56,633)</td>
<td></td>
</tr>
<tr>
<td>Accounts payable and accrued liabilities</td>
<td>93,072</td>
<td>333,474</td>
<td></td>
</tr>
<tr>
<td>Deferred contract revenue</td>
<td>162,403</td>
<td>7,786</td>
<td></td>
</tr>
<tr>
<td>Seminar deposits</td>
<td>(17,643)</td>
<td>111,704</td>
<td></td>
</tr>
<tr>
<td>Net cash provided by operating activities</td>
<td><strong>654,225</strong></td>
<td><strong>1,118,805</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Investing Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital expenditures</td>
<td>(126,215)</td>
<td>(326,209)</td>
<td></td>
</tr>
<tr>
<td>Purchase of investments</td>
<td>(4,068,015)</td>
<td>(5,213,046)</td>
<td></td>
</tr>
<tr>
<td>Proceeds from sales or maturities of investments</td>
<td>3,289,534</td>
<td>4,696,807</td>
<td></td>
</tr>
<tr>
<td>Net cash used in investing activities</td>
<td><strong>(904,696)</strong></td>
<td><strong>(842,448)</strong></td>
<td></td>
</tr>
<tr>
<td>Net (decrease) increase in cash and cash equivalents</td>
<td>(250,471)</td>
<td>276,357</td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents at beginning of year</td>
<td><strong>438,130</strong></td>
<td><strong>161,773</strong></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents at end of year</td>
<td><strong>$ 187,659</strong></td>
<td><strong>$ 438,130</strong></td>
<td></td>
</tr>
</tbody>
</table>

See accompanying notes.
1. Description of the Institute

The Cooper Institute (the Institute) is a nonprofit, tax-exempt corporation established to conduct research, education, and consultation to increase the understanding of the relationship between living habits and health. The Institute, based in Dallas, Texas, is supported by contributions and grants from individuals, companies, and private foundations; by fees charged for consulting, product licenses, professional services, and seminars; and by charges to affiliated health care organizations for processing patient data. The Institute also conducts research with operations based in Denver, Colorado.

The Institute is exempt from federal income taxation under Internal Revenue Code Section 501(c)(3), and contributions to it are tax-deductible within the limitations prescribed by law. Accordingly, no provision for income taxes is made in the accompanying financial statements.

2. Summary of Significant Accounting Policies

Cash and Cash Equivalents

Cash equivalents consist of highly liquid investments with original maturities of three months or less.

Revenue Recognition

Revenue is recognized on unconditional promises to give when the pledges are made. Revenue is recognized on conditional promises to give when the conditions are substantially met. Grant revenue is recognized as contract terms are fulfilled. Retainer fees on contracts are classified as deferred contract revenue and are recognized as revenue as the contracted services are performed. Contributions and grants are considered to be available for unrestricted purposes unless restricted by the donor for specific research projects or for capital acquisitions.

Individuals making pledges to the Institute retain the ability to modify their pledge anytime prior to the Institute receiving the funds. Therefore, the Institute considers these pledges to be intentions to give, rather than promises to give. As these intentions are not legally enforceable, no receivable is recorded in the statement of financial position. Revenue from these pledges is recognized at the time the cash is received. Unrecorded pledges outstanding at June 30, 2004, total approximately $746,846, which are expected to be collected during the next five years.

Conditional promises to give are anticipated contributions, which depend on the occurrence of specified uncertain future events that bind the promisor. A promise to give becomes unconditional and is recognized as revenue in the financial statements when the conditions on which the promise depends are substantially met.

Property and Equipment

Property and equipment are stated at cost if purchased and at estimated fair value if donated.

Depreciation is provided over the estimated useful lives of the assets under the straight-line method as follows: five years for computer equipment, five years for laboratory equipment, 33 years for building, and 15 years for building improvements.

The Institute reviews the carrying value of a long-lived asset to determine if facts and circumstances suggest that it may be impaired or that the depreciation or amortization period may need to be changed. If circumstances indicate the long-lived asset will not be recoverable, based upon undiscounted cash flows of the long-lived asset over the remaining life, the carrying value of the long-lived asset will be reduced by the estimated shortfall of discounted cash flows. The Institute does not believe there are any indicators that would require an adjustment of the carrying value of its long-lived assets or their remaining useful lives as of June 30, 2004.

Investments

Investments consist of mutual funds and are stated at market value, which is determined based on quoted market prices. Realized and unrealized gains and losses are reflected in the statement of activities in the unrestricted and temporarily restricted funds. Gains and losses on sales transactions are recorded when realized based
on the original cost of the investments sold using the specific identification method. Management believes such investments do not pose unusual market or credit risk.

Unrestricted Net Assets

Donations received from third parties that are not restricted as to use or for which the donor-imposed restrictions have been fulfilled are reported as unrestricted net assets in the accompanying financial statements. Unrestricted net assets – unappropriated is used to account for general operating activities. Unrestricted net assets – board appropriated is used to account for assets designated by the Board of Trustees for future activities and investments.

Temporarily Restricted Net Assets

The Institute reports gifts of cash and other assets as restricted support in temporarily restricted net assets if they are received with donor stipulations that limit the use of the donated assets, including restrictions as to time. When the donor restriction expires, that is, when a stipulated time restriction ends or the purpose of the restriction is accomplished, temporarily restricted net assets are reclassified to unrestricted net assets and reported in the statement of activities as net assets released from restrictions. The income from the investment of these assets is also restricted if directed by the donor.

In July 2002, the Institute received a pledge of $1,000,000 to be used to identify, recruit, and compensate scientific staff for the Institute’s longitudinal study. As of June 30, 2004, the Institute had received $1,000,000 related to this conditional pledge and has used $190,285 for its intended purpose, which is included in “net assets released from restrictions” in the accompanying statement of activities.

At June 30, 2004, temporarily restricted net assets are restricted as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>$1,020,300</td>
</tr>
<tr>
<td>Net investment income allocated for scientific chair use</td>
<td>293,050</td>
</tr>
<tr>
<td>Research dissemination</td>
<td>20,389</td>
</tr>
<tr>
<td>Fundraising events</td>
<td>90,080</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,423,819</strong></td>
</tr>
</tbody>
</table>

Permanently Restricted Net Assets

Various donors have contributed to a permanent endowment fund for the Institute.

One donor’s endowment is permanently restricted. Investment income may be used to fund the Institute’s operations and ongoing studies. The donor has not specified the manner in which the principal is to be invested. The amount contributed by this donor was $1,000,000.

A second donor’s endowment is also permanently restricted. Investment income may be used to fund the Institute’s operations and ongoing studies. The donor has indicated that a reasonable percentage of the corpus, as determined by the Board of Trustees in accordance with the spending policy adopted by the Board and applied consistently to the unrestricted endowment, may be used to fund current operations. The donor has not specified the manner in which the principal is to be invested. The original amount contributed by this donor was $1,000,000.

The remaining portion of the permanent endowment fund was established to endow three one-million-dollar chairs for senior scientists for a total cost of $3,000,000. This is comprised of a $1,500,000 donation received in 2002, to start the fund, with the Institute generating the additional resources to fund the remaining $1,500,000. During fiscal year 2002, the Institute received three conditional $500,000 pledges for the remaining $1,500,000, to be received over the next five years in order to complete funding of the three endowed chairs. As of June 30, 2004, the Institute had received contributions of $2,093,154 toward the full $3,000,000 endowment. Income may not be used to support other scientists or other programs of the Institute, and unexpended income from the endowment must be added to corpus each year. The donors have not specified the manner in which the principal is to be invested.
At June 30, 2004, permanently restricted net assets are restricted as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific chair endowment</td>
<td>$2,093,154</td>
</tr>
<tr>
<td>Other endowment funds restricted as to corpus</td>
<td>$1,950,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4,043,154</strong></td>
</tr>
</tbody>
</table>

**Net Investment Income or Loss**

Realized and unrealized gains (losses) and income on investments (net of investment fees of $31,811 and $32,837 as of June 30, 2004 and 2003, respectively) of endowment and similar funds are reported as follows:

- As increases (decreases) in permanently restricted net assets if the terms of the gift require that they be included in the principal of a permanent endowment fund.
- As increases (decreases) in temporarily restricted net assets if the terms of the gift impose time restrictions or restrictions on their use.
- As increases (decreases) in unrestricted net assets in all other cases.

**Advertising**

The Institute expenses advertising costs as incurred. Total advertising costs for 2004 and 2003 were approximately $97,603 and $132,000, respectively, and are included in general and administrative expense in the accompanying statement of activities.

**Use of Estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

**Prior Year Comparative Information**

The accompanying financial statements include certain prior year summarized financial information in total, but not specific as to net asset class. Such information does not include sufficient detail to constitute a presentation in accordance with accounting principles generally accepted in the United States. Accordingly, such information should be read in conjunction with the Institute's financial statements for the year ended June 30, 2003, from which the summarized information was derived.

**Prior Year Information**

Certain amounts in the prior year summarized financial information have been reclassified to conform to the current year presentation.

**3. Affiliated Party Transactions**

The Institute is a separate and independent entity located at The Cooper Aerobics Center in Dallas, Texas, which includes the Institute, the Cooper Clinic, Cooper Medical Imaging LLP, Cooper Concepts, Inc., and Cooper Aerobics Enterprises, Inc. Cooper Aerobics Enterprises, Inc. includes the Cooper Fitness Center, the Guest Lodge at The Cooper Aerobics Center (the Lodge), the Cooper Wellness Program, and Cooper Ventures. The founder and principal owner of the for-profit entities located at The Cooper Aerobics Center is Dr. Kenneth H. Cooper, who also serves as Chairman of the Board of Trustees of the Institute. Management believes the transactions noted below were conducted as if they were on the same basis as transactions with other non-related parties.

The Institute processes patient data and provides certain preventive screenings for the Cooper Clinic. Revenue received for this service was approximately $12,500 and $18,000 for the years ended June 30, 2004 and 2003, respectively. The Cooper Clinic began leasing the first floor of the Institute's Hunt Building on August 1, 1999. Revenue received was approximately $212,000 and $210,000 for the years ended June 30, 2004 and 2003, respectively. The Cooper Clinic also made a $30,000 in-kind contribution to the Institute of a high-resolution ultrasound imaging system in the year ended June 30, 2003. In addition, the Cooper Clinic provides testing services for some Institute workshop participants. Payments made for these services were approximately $8,600 and $32,000 for the years ended June 30, 2004 and 2003, respectively.
Lodging for some Institute scientific advisory consultants and occasional auditorium facilities are provided by the Lodge. Payments by the Institute to the Lodge for this lodging were approximately $7,800 and $22,000 for the years ended June 30, 2004 and 2003, respectively. The Institute also had expenses of approximately $11,800 and $11,900 relating to a Physical Activity Conference for the years ended June 30, 2004 and 2003, respectively.

Revenue of approximately $16,000 and $13,700 was received from the Cooper Aerobics Enterprises for tenant rent of Institute facilities for the years ended June 30, 2004 and 2003, respectively. Payments made to Cooper Aerobics Enterprises for miscellaneous expenses were approximately $24,600 and $24,000 for the years ended June 30, 2004 and 2003, respectively. The Institute also made payments for the services of an Executive Director of approximately $42,000 and $89,000 for the years ended June 30, 2004 and 2003, respectively.

The Institute recognized revenue of approximately $37,000 and $136,000 related to vitamin research from Cooper Concepts for the years ended June 30, 2004 and 2003, respectively.

The Vice President of the Institute’s Denver operations is related to a part owner of Klein Buendel, Inc., a for-profit, private company. The Institute received rental revenue of approximately $105,000 and $84,000 from Klein Buendel for the years ended June 30, 2004 and 2003, respectively. The Institute also had expenses of approximately $100,000 and $95,000 relating to information technology support provided by Klein Buendel for the years ended June 30, 2004 and 2003, respectively. Finally, the Institute had expenses of approximately $111,000 and $410,000 relating to the development and the programming of interactive websites for multiple cancer research projects with Klein Buendel for the years ended June 30, 2004 and 2003, respectively. Management believes the transactions with Klein Buendel, Inc. were conducted on the same basis as if they were transactions with other nonrelated parties.

An Institute board member is related to The Chairman of the Board of Dell, Inc., a publicly traded company. The Institute purchased Dell computers, laptops, and support plans for approximately $33,500 and $87,200 for the years ended June 30, 2004 and 2003, respectively. These computer products were purchased on the same basis as if they were transactions with other nonrelated parties.

In total, the Institute had related party revenue of approximately $449,500 and $586,200 and related party expenses of approximately $391,800 and $771,100 for the years ended June 30, 2004 and 2003, respectively. The Institute also received from members of the Board and other affiliated parties, contributions of approximately $1,032,000 and $1,226,000 for the years ended June 30, 2004 and 2003, respectively.

### 4. Federal and State Grants – New Multi-Year Awards

On September 30, 2003, the Institute received an award for approximately $1,351,800 for four years as a pass-through from the National Institutes of Health for a pilot study on physical exercise to prevent disability.

Total support and revenue recorded pertaining to all federal and state grants was $7,085,284 and $6,206,609 during the years ended June 30, 2004 and 2003, respectively. Remaining funds available under the grants total $2,861,095 as of June 30, 2004.

### 5. Investments

The following summarizes realized and unrealized gains and losses on publicly traded mutual funds investment assets:

<table>
<thead>
<tr>
<th></th>
<th>Year ended June 30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004</td>
</tr>
<tr>
<td>Realized losses</td>
<td>$(12,725)</td>
</tr>
<tr>
<td>Unrealized gains:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8,494,132</td>
</tr>
<tr>
<td>Market</td>
<td>9,395,234</td>
</tr>
<tr>
<td>Total unrealized gains</td>
<td>901,102</td>
</tr>
<tr>
<td></td>
<td>$ 888,377</td>
</tr>
</tbody>
</table>
6. Leases

The Institute leases office equipment under operating leases and leases 19,500 square feet of office space in Denver, Colorado and 4,445 square feet of office/warehouse space in Oak Cliff, Texas under noncancelable lease agreements. Future minimum lease commitments are payable as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$487,395</td>
</tr>
<tr>
<td>2006</td>
<td>460,738</td>
</tr>
<tr>
<td>2007</td>
<td>417,789</td>
</tr>
<tr>
<td>2008</td>
<td>66,626</td>
</tr>
<tr>
<td>2009</td>
<td>–</td>
</tr>
<tr>
<td>Thereafter</td>
<td>–</td>
</tr>
<tr>
<td>Total</td>
<td>$1,432,548</td>
</tr>
</tbody>
</table>

Rent expense totaled approximately $385,600 for the year ended June 30, 2004.

7. Functional Expenses

Functional expenses for the year ended June 30, 2004, are:

<table>
<thead>
<tr>
<th>Category</th>
<th>Program Expenses</th>
<th>Management and General</th>
<th>Fund Raising</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries, wages, and benefits</td>
<td>$6,779,058</td>
<td>$1,286,617</td>
<td>$35,590</td>
<td>$8,101,265</td>
</tr>
<tr>
<td>Facilities rental and</td>
<td>658,701</td>
<td>284,534</td>
<td>1,135</td>
<td>944,370</td>
</tr>
<tr>
<td>maintenance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>175,995</td>
<td>301,883</td>
<td>1,151</td>
<td>479,029</td>
</tr>
<tr>
<td>General and administrative</td>
<td>1,908,069</td>
<td>353,683</td>
<td>218,304</td>
<td>2,480,056</td>
</tr>
<tr>
<td>Total</td>
<td>$9,521,823</td>
<td>$2,226,717</td>
<td>$256,180</td>
<td>$12,004,720</td>
</tr>
</tbody>
</table>

8. Retirement Plan

The Institute sponsors a 403(b) Tax Sheltered Annuity Plan, which is available to all regular employees after meeting certain eligibility requirements. The plan provides for contributions by the employees up to a certain percentage of their income. The Institute makes matching contributions up to a certain percentage of the employees’ contributions. The Institute made matching contributions of approximately $288,200 and $158,000 for the years ended June 30, 2004 and 2003, respectively.

9. Subsequent Event

In August 2004, a donor decided not to fulfill the terms of his pledge toward one of the permanently restricted chairs. As a result, the Board of Trustees returned $200,000 of a $500,000 conditional pledge toward one of its three permanently restricted scientific chairs. The Institute has also removed the donor’s name from use with the endowed chair. The amount returned had previously been collected in the 2002 and 2003 fiscal years.