

December 2, 1996  
MEMORANDUM

To: Members of the Duke University Board of Trustees  
From: Nannerl O. Keohane  
Subject: Summary of Activities

I am pleased to share with you this report on a few of the honors, activities, and events involving Duke faculty, students, staff, and alumni, since the Board's meeting in September. Under our new format for Trustee meetings, I plan to provide these summaries in advance of each of our meetings and limit my oral comments to a few items of particular interest. Of course, if you have questions about any of these items, please give me a call, or raise them during my presentation at the Board meeting.

## **AWARDS AND HONORS**

In October, the Royal Swedish Academy of Sciences announced that Duke alumnus Robert Richardson will share the 1996 Nobel Prize in Physics with two colleagues. Richardson, a professor at Cornell University, received his Ph.D. from Duke in 1966, where he laid the groundwork for his participation in a pathbreaking discovery of superfluidity in helium 3, one of the two stable forms of the element helium. Richardson began his studies of helium 3 under the tutelage of Horst Meyer, Fritz London Professor of Physics, and he recently visited the campus to celebrate Meyer's retirement. Meyer, who retired from teaching this fall, traces his own strong interest in helium 3, which he passed on to Richardson, to his earlier studies with Fritz London, who taught physics and chemistry at Duke in the 1950s and is credited with a number of important breakthroughs in low temperature physics. Professor Richardson is the second Duke alumnus to receive the Nobel Prize in Physics, the first being Charles Townes, who received his MA from Duke in 1937 and an honorary degree in 1966.

A project organized by the Center for Documentary Studies has won the Oral History Association's inaugural award for an outstanding oral history undertaking. "Behind the Veil: Documenting African American Life in the Jim Crow South," is an effort to recover the documentary base for understanding the experiences of the Jim Crow era. This project was organized under the leadership of Dean of Arts and Sciences William Chafe when he was chairman of History. During the summers of 1993, '94, and '95, research teams traveled across the South, asking people to share their memories and old family photographs and memorabilia. The Center for Documentary Studies works in conjunction with a number of historically black colleges and universities, as well as community-based historical organizations, on this important program.

Adrian Bejan, J.A. Jones professor in Duke's department of mechanical engineering and materials science, has won a major prize essentially for being a scientific maverick. Bejan won the Worcester Reed Warner Medal from the American Society of Mechanical Engineering International. The medal goes to one individual each year in recognition of "outstanding contribution to the permanent literature of engineering." In Bejan's case, according to the citation, it honors "his originality, challenges to orthodoxy and impact on engineering thermodynamics and heat transfer, which were made through his first three books."

In another exciting event with which Bejan is associated, a visiting professor he recruited to Duke in 1991, Emil Constantinescu, has been elected president of Romania. Constantinescu, a geologist, who had not been active in Romanian politics prior to his visit to Duke, according to Bejan, was impressed by the freedom he saw in America and decided to become active in Romanian politics. His campaign literature highlighted his year at Duke, "one of the most famous American universities." We have written President Constantinescu to congratulate him on his victory and have invited him to return to Duke when he visits the United States in the future.

## RESEARCH

Duke faculty continue to be recognized for significant achievements in research. In mid-November, Associate Professor of Physics Vladimir Litvinenko successfully operated the shortest wave length and most powerful ultraviolet wave length free electron laser (FEL) ever conducted in the United States. Litvinenko originally developed his free electron laser at the Budker Institute of Nuclear Physics in Novosibirsk, Russia. It was moved to Duke's Free Electron Laser Laboratory a few years ago to link up with our much more powerful 1.1 billion electron volt electronic race track. Duke physicists, within a few days of the new laser's operation, had already produced intense beams of gamma rays that researchers hope can help improve understanding of thermonuclear processes inside stars like the sun. Ultimately Duke scientists hope to harness the ultraviolet free electron laser for improved laser surgical techniques and other medical applications. Duke's FEL Laboratory is funded by the U.S. Department of Defense's program for advancing laser technology in medicine.

Another important research endeavor conducted with \$6 million from the Department of Defense has gained considerable attention in the media. This project has been undertaken by a Duke-led university consortium involving Duke, Cal Tech, Georgia Tech, Ohio State, and Stanford, to help find buried land mines, whose construction is often diabolically clever. Duke Associate Professor of Electrical and Computer Engineering Lawrence Carin is the principal investigator. The project includes three research areas -- chemical sensing processes that mimic smell: radar magnetic infrared and sound sensors, and sensor information processing. While we tend to think of land mines in the context of protecting American soldiers in Bosnia and Iraq, estimates of the number of uncleared land mines worldwide, which threaten death or injury to innocent civilians, range from 85 to 105 million spread over 62 nations.

In a very different kind of research with broad implications at home, Duke demographer Kenneth G. Manton, and a colleague from Brigham Young University, report that raising the normal retirement age to age 70 could save the federal government billions of dollars each year and help shore up the ailing Social Security Trust Fund over the long term. Their study, funded by the Social Security Administration, showed that the Social Security Trust Fund could save roughly \$50-60 billion on each year's group of workers by requiring them to wait until age 70 to receive full Social Security benefits, instead of the current retirement age of 65. Increasing the normal retirement age, the researchers say, would be a reasonable move because Americans are enjoying longer, healthier lives.

And in a study that deals with another prominent national issue, Medical Center researchers have found that the population most likely to be affected by legalizing physician-assisted suicide favors it the least. In a survey of 168 frail, elderly patients at Duke's Geriatric Evaluation and Treatment Clinic, psychiatrist Harold Koenig and his associates found that 39.9 percent of the elderly patients favored physician-assisted suicide for terminally ill patients. In contrast, the survey found that 59.3 percent of the patients' relatives -- 146 spouses, children, and siblings -- favored the measure under the same circumstances. The survey, supported by the National Institute of Mental Health, also showed that the types of patients most opposed to physician-assisted suicide were those most vulnerable to external influence and who had the least control over their circumstances.

In research with global environmental implications, the government-supported apparatus to measure how carbon dioxide affects forests was dedicated last month in Duke Forest. The experiment, known as FACTS-I for Forest-Atmosphere Carbon Transfer and Storage, consists of seven rings of aluminum towers constructed in a predominantly pine ecosystem by researchers from the Brookhaven National Laboratory, with research funding provided by the U.S. Department of Energy. Three of the tower rings bathe the trees, plants, and soils below in extra carbon dioxide, while a matched set of three serve as controls. The seventh tower ring was built in 1993 as a prototype, and will remain in operation to test new ideas. The dedication came as part of a meeting of designers from around the world of similar open-air simulations of the 21st century atmosphere.

Looking back in time, Biblical archaeologists and religion professors Eric and Carol Meyers are finally seeing their research represented at home after decades of work at archaeological digs in Israel. Some of their work is on display in an ambitious exhibition presented by the North Carolina Museum of Art in Raleigh. The exhibit opened November 17 and highlights the archaeological site of Sepphoris, once an important city in Roman Palestine, as well as a thriving provincial capital where Jews, Romans, and later Christians, peacefully coexisted. The exhibit is part of an Israel/North Carolina Cultural Exchange being celebrated across the state. The Duke University Museum of Art also has been involved in the cultural exchange; "Jerusalem and the Holy Land Rediscovered: The Prints of David Roberts" opened in October and will show in DUMA's main gallery through December 29. If you have free time while here, I urge you to see these splendid exhibits.

The American Heart Association held its annual scientific meeting in New Orleans last month, and the Medical Center had 78 different presentations. Only the Cleveland Clinic, with 84 papers, had more. Dr. Jeffrey Platt, professor of experimental surgery, presented an update on his work in xenotransplantation -- the transfer of organs and tissues between species. Dr. Platt is working on transplanting pig hearts into humans, and has developed a way to counteract the rejection mechanism. He predicted at a news conference that animal organs may be routinely transplanted into humans within a year or two, saving lives and moderating the expanding high cost of organ transplants.

Another Duke research team reported that where one lives in America helps determine how a doctor treats heart attacks, the length of hospital stays, and whether further hospitalization will be needed in the next few months. The medical center researchers used detailed medical, economic, and quality-of-life information for more than 2,300 patients across the United States to paint a picture of regional differences in the treatment of heart attacks. The rates of death and second heart attacks were almost the same across the country, but the use of interventional procedures and hospital stays varied widely.

And an international research team led by Duke reported in the New England Journal of Medicine that a blood test to measure protein expelled from damaged heart tissue is the best indicator yet of patients' risk of dying within weeks of a suspected heart attack. The study is important because physicians can't easily detect distinct signs of heart disease in some patients who come to the hospital with chest pain. The American Heart Association estimated that in one year as many as 1.5 million Americans have a heart attack and 500,000 of them die. Thousands of those who die will have been prematurely released from the hospital because their heart attack was not diagnosed.

The diverse set of research projects that I have described -- from investigating land mines to helping reduce cardiac disease -- are concrete examples of the importance of sustaining federal university partnerships in science and research, on which both our nation's economic competitiveness and the health and quality of life of the American people depend. While medical research funded by the National Institutes of Health is widely recognized and supported, the same cannot always be said for research funded by other agencies. It is important to remember that funding for science (including social science) from the Department of Energy, the Department of Defense, the National Science Foundation, EPA, and NASA, as

well as funding for the humanities and the arts from the NEH and NEA, are all crucially important to the contributions our faculty make to the broader society.

## **ALUMNI AND DEVELOPMENT**

We've just wrapped up a very busy season of reunions and other traditional fall events, and I've had the opportunity to meet and speak to many interesting and interested groups of alumni. Ten classes have returned to campus -- those with years ending in ones or sixes, back to 1946. I've also met alumni groups in Atlanta, Charlotte, Durham, Boston and New York this fall, and am scheduled to go to Pittsburgh, Jacksonville, Miami, Palm Beach, Wilmington, Louisville, the Triad, Dallas, Houston and Philadelphia before the school year is out. We are especially grateful to Trustees Jean Spaulding, Mary Semans, Sally Robinson, Rex Fuqua, and Jim Vincent for hosting presidential dinners at which I and other university

leaders have an opportunity to discuss Duke's future, our ambitions, and our priorities in the years ahead. I continue to find an abundance of enthusiasm and affection for the university that is most encouraging (and bodes well for our proposed capital campaign).

In October the university formally announced plans to build The Center for Duke Gardens, a visitors and educational site for Duke and the community. The announcement, attended by Durham Mayor Sylvia Kerckhoff and community and campus leaders, coincided with the start of a major effort to raise \$5.2 million to pay for the center, an endowment to support its maintenance and operation, and funds for an expanded educational program. The center will contain classrooms, conference space, a teaching greenhouse, a horticultural library, offices and space for public and private events. \$3.4 million already has been raised for the project, thanks in large part to two major gifts, from The Duke Endowment, in honor of Doris Duke, and from the F.M. Kirby Foundation. The fund raising effort is being aided by a wonderful video that former Duke parent and ABC news broadcaster Ted Koppel narrates, extolling the virtues of the Gardens. Construction is expected to begin in early

1998 and will take 12 to 18 months to complete.

The Ford Motor Co. has given \$1 million to the Fuqua School of Business to help establish the Ford Motor Company professorship of global marketing. This gift enhances an already strong relationship between Fuqua and Ford, and demonstrates Ford's foresight and commitment to business education at a time when Dean Adams and his faculty colleagues are rapidly expanding Fuqua's international programs.

Trustee Emeritus Ed Pratt and his wife Jinny, in conjunction with International Paper Co., have given \$1 million to help endow the Levine Science Research Center. The gift will endow research and education activities for faculty and students in Arts and Sciences and the School of Engineering. We're especially pleased that we were able to name the center's dining commons in their honor, because it has come to symbolize much of the vibrant interdisciplinary intellectual focus we associate with the Levine Center.

Major support for Duke doesn't always come from those who have acquired wealth as a function of business. Mae Jennings, a schoolteacher from Hillsville, Va., who died in 1994 at age 79, has bequeathed \$2 million to the Duke Comprehensive Cancer Center, where she had been treated for breast and bone cancer. This wonderful gift will be used to create the Comprehensive Cancer Center Endowment Fund. Miss Jennings was a graduate of Radford College and Virginia Tech, and taught biology at the Radford City Public Schools for 31 years.

## **NEW BOOKS**

A number of new books by Duke faculty are receiving attention. Allison Haltom is sending to you a copy of *Keeping An Open Door: Passages in a University Presidency* that Keith Brodie and his former special assistant for university affairs, Leslie Banner, have written. The book, published by Duke Press, covers the eight years of Keith's presidency and describes in a very personal way the challenges that President Brodie and Duke University faced across a wide array of issues. It's interesting reading for anyone interested in that period. One can only be impressed by the thoughtfulness of Keith's speeches on various topics reprinted in the book, and by his introductory essay on the nature of the job and of Duke during those years.

Engineering professor Henry Petroski has written about bridge building, the evolution of the pencil, the invention of everyday objects such as paper clips, and spectacular engineering failures. In his latest book published last month by Harvard University Press, Petroski focuses on how engineers get from thought to thing. The book *Invention by Design* uses a series of case studies to illustrate how long it can take for an unfilled need to be met by useful and reliable products. For example, the first patent for a device suggestive of what eventually became the zipper was issued in 1851 in response to a major 19th-century headache: too many buttons and hooks on clothes and shoes. But it took until the 1930s for zippers to develop a market in garment manufacturing.

English Professor Jane Tompkins, with the assistance of a National Humanities Center grant, has examined the evolution of her own ideas about teaching and learning in a new book of memoirs, *A Life In School: What the Teacher Learned*. While Professor Tompkins doesn't believe there is "any one way" to be a good teacher, she articulates a view that education, from kindergarten to graduate school, should be more about the development of the "whole human being." Duke gets credit in this book for letting Tompkins "try new things that would not have been allowed in some other schools."

## **COMMUNITY RELATIONS**

A major focus of our December meeting will be on community relations, and I wanted to highlight a few examples of how the university is making important contributions to Durham. Former Public Safety Director Paul Dumas has agreed to come out of retirement, to be "loaned" by Duke to work with School Superintendent Ted Drain and principals in each of Durham's public schools to assess safety. Dumas is visiting all 43 public schools in Durham, reviewing each building's Safe Schools Plan, and providing a school-by-school analysis of the measures already being taken and those which should be put in place to ensure safe environments for students to learn. Superintendent Drain and the School Board have identified safety as one of their highest priorities of the Durham Public Schools this year. Paul is no stranger to the school district's needs. He served on the schools' Quality Assurance Review Team's safety and security review committee in 1994, and three of his children went through the Durham school system.

For the third year in a row, the Duke-United Way Partnership fund-raising drive has exceeded its campaign goal. Donations for the 1996 campaign total more than \$616,700; our target was \$575,000. During the past three years, we have tried to become much more systematic in our efforts to generate support for the United Way, in a campaign which now serves not only Durham, but the entire Triangle area. This year's outstanding result is a tribute to a three-person leadership team -- Susan Ross, associate dean in Arts and Sciences; Joe Pietrantonio, associate vice president for Auxiliary Services; and Art McCombs, associate vice chancellor for Medical Center Human Resources -- along with Terry Chambliss, coordinator of the effort, and the more than 2,700 employees who contributed to the campaign. The generosity of Duke's employees will go a long way toward delivering critical services through non-profit agencies in our community.

I also want to commend Duke Student Government president Takcus Nesbit for the work he and others at DSG are doing with our neighbors in Trinity Heights and Trinity Park off East Campus to help educate and inform students about their rights as tenants and the importance of being good neighbors with the people who live there. DSG members Randy Fink and Brian Wise have become members of the Trinity Park Neighborhood Association board and have started a newsletter for students living in these neighborhoods. Takcus has made enhancing Duke's relations with our Durham neighbors a high priority for DSG, and I am encouraged by the results to date.

## **GENDER EQUITY**

Duke filed its first report in compliance with the federal Equity in Athletics Disclosure Act which documents considerable progress over the past 15 years in improving the intercollegiate athletic experience for women. By the year 2000, the university will have an equal number of men's and women's varsity teams. Duke's progress in this area is the result of a consistent, and continuing, effort led by Tom Butters to augment the financial investment in women's sports and to encourage and create increased participation opportunities for women. The report, which received some media interest, notes that Duke now offers 13 men's teams and 12 women's teams with 376 male student-athletes and 195 female student-athletes. Duke has nine full-time coaches for men's teams and nine for women's teams. There are 19 full-time assistant coaches and four part-time assistant coaches for men's teams, including nine full-time assistant coaches for football. Women's teams have 10 full-time assistant coaches and three part-time assistant coaches.

The report also notes that the average salary for the 11 head coaches of men's teams was \$67,145 and the average salary for the 10 women's head coaches was \$36,035. The disparity is explained by the higher salaries for coaches in men's basketball and football -- the major revenue-producing sports. If those salaries were excluded, the average for the men's head coaches is about \$37,000. The coaches of male teams have, on average, held their positions three times as long as coaches of female teams, and length of service is a significant factor in determining salary levels.

## **CENTER FOR THE STUDY OF CONGRESS**

The law school has announced the establishment of the Center for the Study of the Congress, a non-partisan, interdisciplinary center that will draw on expertise at Duke and neighboring universities to examine, among other major issues, the current negative image people have of the Congress. The center will be co-chaired by Duke law faculty members Ted Kaufman and Chris Schroeder, both with extensive experience as Congressional staff members, and will conduct regular activities both at Duke and in Washington. Dean Pamela Gann expects the center to contribute to a better understanding of the erosion of respect for one of our most significant public institutions. Much of the center's work will focus on identifying differences between real deficiencies with the Congress and public misperception; improving public understanding of how and why negative interpretations of actions by the Congress predominate; and undertaking concrete, practical projects to supply accurate, non-partisan and educational material about the Congress. That's a huge agenda, but one that can be important for our democracy.

## **HOLDING COURT AT DUKE**

It's not unusual for students at the law school to have access to prominent visiting attorneys, judges and legal scholars from across the United States and even the globe. On October 28, the U.S. Court of Appeals for the

Armed Forces held an actual court session -- a court martial case -- in the library's Gothic Reading Room. The touring court was part of Project Outreach, an educational and awareness program developed by law professor Robinson Everett, who was the court's chief judge from 1980 to 1990.

## **NUTRITIOUS FOOD**

Duke has yet another national ranking to add to its collection -- a First Place for the meals we serve our students. The Physicians' Committee for Responsible Medicine announced in October that the university stood at the top among 38 national colleges and universities for the availability of healthy, low-fat and vegetarian foods. The committee said the college rankings were based upon daily availability of varied nutritious meals at breakfast and dinner. Both the East Union and West Union dining facilities offer students a wide variety of healthful foods.

Complaints about "college food" are endemic on campus, as we all remember; Duke has recently made great strides in offering healthy and tasty food in newly renovated, cheerful and attractive settings. We are pleased that many of our students have noted and enjoyed this emphasis, since, as we also all remember, food is a very important part of student life. We owe thanks to all those involved in this achievement -- the designers, planners, managers, cooks and servers of the food. We hope that all of you will have an opportunity at some point to enjoy a meal in one of the campus dining halls, so that you can discover for yourself how much progress has been made.

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