

Last nite P.T.A

SOME REMARKS FOR

HUBERT H. HUMPHREY

FOR

NATIONAL ACADEMY OF ENGINEERING

Washington, D.C.

MAY 7, 1973

Dean Marshall  
Dean Pierre  
Dr Mulligan  
Dr Wilburn - Acad of Sciences

OTA - Research

Space Council

Marine Sciences

and Work



✓ 42,000 Engineers graduated in 1971  
 only 409 Blacks.  
 Handful of other minorities  
 & women - 2-  
 Women - less than 10% of Scientists & engineers

--98% OF U. S. ENGINEERS ARE WHITE MALES, A GROUP WHICH COMPRISES ONLY 42% OF OUR POPULATION;

--~~ETHNIC MINORITIES~~, A GROUP OF 36 MILLION Blacks, Indians, Chinese & Asians AMERICANS, CONTRIBUTE LESS THAN 2% OF THE U. S.

SCIENTIFIC AND TECHNICAL PERSONNEL. - Women represent less than 1% of Engineers

--OF 1.1 MILLION ENGINEERS IN 1971, ONLY 7,300,

OR .7% WERE BLACK. - out of 230,000 students enrolled in Engineering in 1970, only 1 out of 100 black

ACCORDING TO THE EXPERTS, THIS COUNTRY IS HEADED

FOR A SEVERE SHORTAGE OF ENGINEERS IN MANY SPECIALTIES

WITHIN THE NEXT FEW YEARS. IF THE QUALITY OF LIFE

FOR A GROWING POPULATION IS TO BE IMPROVED, THIS GAP

MUST BE FILLED. THIS COULD BE DONE IN A NUMBER OF

WAYS. (HOWEVER, IT WOULD REALLY BE ~~irresponsible~~ WITH THIS

TIMELY GAP IN THE SUPPLY OF ENGINEERS, IF WE FAILED

TO FILL A LARGE PART OF IT WITH MINORITIES AND WOMEN.

OF COURSE, THIS WILL NOT HAPPEN ON ITS OWN. a must! a massive concerted effort by industry, government, and our

EDUCATIONAL COMMUNITY IS CALLED FOR.

-3-

WHY SHOULD WE TRY TO MEET THE ANTICIPATED  
DEMAND WITH MINORITIES? SOME OF THE MOST IMPORTANT  
REASONS ARE:

--TO REDUCE ECONOMIC DISCRIMINATION AND PROVIDE  
POTENTIAL MANAGERIAL AND PROFESSIONAL LEADERS IN THE  
FUTURE FROM OUR MINORITY GROUPS; - *It takes 15 to 20 years!*  
*to rise to Top positions!*

--TO TAP A VALUABLE SOURCE OF HUMAN CAPITAL  
THAT HAS NOT BEEN FULLY UTILIZED IN THE PAST, PAR-  
TICULARLY IN ENGINEERING AND THE HARD SCIENCES;

--TO PROVIDE A CADRE OF TECHNICALLY TRAINED  
MINORITY PEOPLE TO HELP FIND TECHNOLOGICAL SOLUTIONS  
TO THE SOCIO/ECONOMIC PROBLEMS OF THE CENTRAL CITIES,  
WHERE <sup>many</sup> ~~MOST~~ OF THESE PEOPLE HAVE THEIR ROOTS;

--TO PREVENT THE RECURRENCE OF A "BRAIN DRAIN"  
OF ENGINEERS FROM FOREIGN COUNTRIES WHERE THEIR  
SKILLS ARE URGENTLY NEEDED; AND

-4-

--TO INCREASE THE NUMBER OF NON-WHITE AMERICANS  
AVAILABLE TO RESPOND TO THE TECHNOLOGY NEEDS OF THE  
THIRD WORLD,

↳ MOST AGREE THAT THE PROBLEM OF GETTING MORE  
MINORITY ENGINEERS INTO INDUSTRY, EDUCATION AND GOVERN-  
MENT IS A SUPPLY PROBLEM, NOT ONE OF DEMAND ↳ WHILE  
EQUAL OPPORTUNITY LEGISLATION HAS SUCCEEDED IN  
INDUCING DEMAND, IT IS NOT BEING MET BY THE EDUCA-  
TIONAL ESTABLISHMENT.

↳ A NUMBER OF RELATED PROBLEMS HAVE BEEN POINTED  
TO AS THE REASON FOR THE LACK OF TRAINED MINORITY  
ENGINEERS IN THE U. S. SOME OF THE MOST IMPORTANT  
SEEM TO ME TO BE:

--INADEQUATE PREPARATION FOR ENGINEERING SCHOOLS  
BY INNER CITY PUBLIC SCHOOLS (POOR FACILITIES,  
CURRICULA IN MATH AND SCIENCE, QUALITY OF TEACHERS,  
GUIDANCE COUNSELING, ETC.);

X study by  
Fred  
Crossland  
Ford  
Foundation

Need of  
Fed  
Aid

-5-

--MINORITIES HAVE BEEN GENERALLY UNAWARE OF  
OPPORTUNITIES IN THE ENGINEERING PROFESSION;

*alto*  
--FEW SUCCESSFUL ENGINEERING LEADERS FROM THE  
MINORITY COMMUNITY TO SERVE AS MODELS FOR THE  
CAREERS OF THE YOUNG;

--THE ECONOMIC CONDITION OF MOST MINORITIES  
MAKES ANY ADVANCED EDUCATION DIFFICULT TO OBTAIN,  
WHEN THAT EDUCATION REQUIRES LONGER HOURS IN SCHOOL  
FOR LABORATORY WORK--MAKING OUTSIDE EMPLOYMENT  
DIFFICULT TO ARRANGE--THIS ECONOMIC PROBLEM IS  
COMPOUNDED;

--THE COMMUNITY COLLEGES AND PREDOMINATELY BLACK  
INSTITUTIONS THAT MOST MINORITIES ATTEND HAVE GENERALLY  
NOT BEEN ADEQUATELY FUNDED TO PROVIDE QUALITY ENGI-  
NEERING EDUCATION.

-6-

ANOTHER SERIOUS RELATED PROBLEM IS THE LACK ~~OF~~  
TECHNICALLY TRAINED MINORITIES AT THE TOP MANAGERIAL  
AND PROFESSIONAL LEVELS OF INDUSTRY, GOVERNMENT AND  
EDUCATION. / BESIDES THE OBVIOUS REASON THAT THERE IS  
ONLY A LIMITED POOL OF LOWER LEVEL MINORITY ENGINEERS  
IN THESE ORGANIZATIONS TO PUT INTO THE LEADERSHIP  
POSITIONS, OTHER REASONS HAVE BEEN NOTED. SOME OF  
THESE ARE:

--RIGIDITIES IN THE PROMOTIONAL AND SENIORITY  
SYSTEMS OF THESE ORGANIZATIONS;

--SMALL NUMBER OF THE MINORITY ENGINEERS WITH  
EDUCATIONAL BACKGROUNDS THAT CAN COMPETE WITH THEIR  
PEERS WHO ATTENDED THE U. S. "CENTERS OF EXCELLENCE"  
IN ENGINEERING; AND

--THE PERSISTENCE OF BIAS IN MOST ORGANIZATIONS  
AT MANY LEVELS, DESPITE THE OFFICIAL POLICIES OF  
THESE INSTITUTIONS.

-7-

*now,* WHAT CAN BE DONE TO CORRECT THIS SITUATION,

TO IMPROVE THE SUPPLY OF MINORITY ENGINEERS AND SEE  
TO IT THAT THEY ARE GIVEN FAIR TREATMENT IN MOVING  
UP IN OUR PRIVATE AND PUBLIC INSTITUTIONS?

IT SEEMS TO ME THAT TODAY'S SYMPOSIUM IS A MAJOR  
STEP IN THE RIGHT DIRECTION. THE FIRST STEP IS TO  
RECOGNIZE THE PROBLEM, DEVELOP A STRATEGY FOR DEALING  
WITH IT AND MOBILIZE A BROAD SPECTRUM OF BUSINESS,  
EDUCATION AND GOVERNMENT LEADERS TO WORK TOGETHER  
TOWARD A SOLUTION.

I DON'T HAVE ANY QUICK AND EASY SOLUTION TO  
OFFER. I WISH I DID! THE PEOPLE IN THIS ROOM ARE  
MUCH MORE QUALIFIED THAN I TO CHART THE RIGHT COURSE.

I DO HAVE A COUPLE OF IDEAS, HOWEVER.

FIRST, IT SEEMS TO ME THAT A SERIES OF REGIONAL  
CONSORTIA FOR MINORITY ENGINEERING EDUCATION MIGHT BE  
ESTABLISHED.

WITH MINORITY EDUCATION IN THE LEAD, MINORITY EDUCATIONAL INSTITUTIONS COULD DEVELOP COOPERATIVE PROGRAMS WITH THE VARIOUS "CENTERS OF EXCELLENCE" IN ENGINEERING AROUND THE COUNTRY.

THIS WOULD PROVIDE MINORITY STUDENTS WITH AN OPPORTUNITY TO AVAIL THEMSELVES OF THE FACILITIES AND EXPERTISE OF THESE INSTITUTIONS AND THE "CENTERS OF EXCELLENCE" WITH A POOL OF QUALIFIED MINORITY STUDENTS TO DRAW INTO THEIR PROGRAMS, EXCHANGES OF PROFESSORS, OPPORTUNITIES FOR JOINT APPOINTMENTS OF FACULTY, WITH RESEARCH OPPORTUNITIES FOR ALL, WOULD IMPROVE THE QUALITY OF EDUCATION AT ALL CONSORTIA INSTITUTIONS. PERHAPS, A SERIES OF FEDERAL "INSTITUTION BUILDING" GRANTS COULD BE PROVIDED TO THE MINORITY INSTITUTIONS TO EXPAND ENGINEERING FACULTIES AND FINANCE NEEDED FACILITIES.

*#2* SECOND, A "BLUE RIBBON" TASK FORCE COULD BE ESTABLISHED WITH LEADERS OF INDUSTRY, GOVERNMENT, AND EDUCATION AS MEMBERS. *L* THIS GROUP WOULD BE COMPOSED AT LEAST 50% OF MINORITIES AND BE RESPONSIBLE FOR FOCUSING PUBLIC ATTENTION ON THE MINORITY ENGINEERING PROBLEM. *L* THEY WOULD EMPHASIZE THE GROWING SHORTAGE OF ENGINEERS AND RISING DEMAND FOR MINORITIES IN THIS FIELD.

*National Academy of Engineering*  
*L* THIRD, THIS ~~IS~~ GROUP COULD ESTABLISH DIRECT CONTACT WITH GUIDANCE COUNSELORS IN SECONDARY SCHOOLS IN AREAS WITH LARGE MINORITY POPULATIONS. *L* MINORITY STUDENTS, MORE THAN MOST TEENAGERS, ARE CUT OFF FROM A VIEW OF WHAT CAREER OPPORTUNITIES EXIST IN THE COUNTRY.

-10-

PROVIDING INFORMATION ON FUTURE DEMAND FOR ENGINEERS,  
INDUSTRY DEMAND FOR MINORITY ENGINEERS, IMPORTANCE OF  
THE ENGINEERING PROFESSION IN THE SOLUTION OF INNER CITY  
SOCIO/ECONOMIC PROBLEMS, SOURCES OF FINANCIAL ASSISTANCE  
FOR ENGINEERING EDUCATION, COULD GO A LONG WAY TOWARD  
STIMULATING MORE INTEREST IN ENGINEERING AMONG THE  
GROWING NUMBER OF WELL TRAINED MINORITY YOUTH IN OUR  
HIGH SCHOOLS.

FINALLY, IT SEEMS TO ME THAT THE BEST WAY FOR  
INDUSTRY TO GET MORE MINORITY ENGINEERS IN THEIR  
DRAFTING ROOMS IS BY PUTTING MORE MINORITIES IN THEIR  
BOARD ROOMS. UNLESS THE POSSIBILITY OF RISING TO THE  
TOP CAN BE DEMONSTRATED TO TALENTED YOUNG MINORITIES,  
THEY WILL CHOOSE OTHER PROFESSIONS FOR THEIR CAREERS.



# Minnesota Historical Society

Copyright in this digital version belongs to the Minnesota Historical Society and its content may not be copied without the copyright holder's express written permission. Users may print, download, link to, or email content, however, for individual use.

To request permission for commercial or educational use, please contact the Minnesota Historical Society.



[www.mnhs.org](http://www.mnhs.org)