



1
00:00:00,679 --> 00:00:02,449
>>> GOOD MORNING.

2
00:00:02,449 --> 00:00:09,140
I AM BRENDA MANUEL THE ASSOCIATE ADMINISTRATOR FOR DIVERSITY AND EQUAL OPPORTUNIT

3
00:00:09,140 --> 00:00:11,910
AND I WOULD LIKE TO WELCOME YOU TO THE VERY
FIRST

4
00:00:11,910 --> 00:00:14,390
MISSIONSTEM SUMMIT 2016.

5
00:00:14,390 --> 00:00:20,720
WE ARE PLEASED TO HAVE SO MANY REPRESENTATIVES FROM OUR GRANTEE INSTITUTIONS WITH

6
00:00:20,720 --> 00:00:23,830
BOTH HERE AND PERSON AS WELL AS VIRTUALLY.

7
00:00:23,830 --> 00:00:28,560
AS MANY OF YOU MAY KNOW, NASA HAS FOR MANY
YEARS

8
00:00:28,560 --> 00:00:32,899
CONDUCTED COMPLIANT REVIEW PROGRAMS TO BETTER
ENSURE

9
00:00:32,899 --> 00:00:36,050
THAT OUR GRANTEES ARE OFFERING EQUAL OPPORTUNITIES
TO

10
00:00:36,050 --> 00:00:40,800
THEIR BENEFICIARIES OF THESE BE STUDENTS IN
NASA FUNDED

11
00:00:40,800 --> 00:00:46,700
SCIENCE, TECHNOLOGY ENGINEERING AND MATH OR
STEM

12
00:00:46,700 --> 00:00:52,690
VISITORS TO VISIT VISITOR PLANETARIUMS ACROSS
THE

13
00:00:52,690 --> 00:00:54,030
NATION.

14
00:00:54,030 --> 00:00:57,730
AS OUR PROGRAMMING CHORES, WE SOUGHT TO HEIGHTEN
OUR

15
00:00:57,730 --> 00:01:01,510
EFFORTS BY PROVIDING A MECHANISM FOR TOUCHING
ALL OF

16
00:01:01,510 --> 00:01:02,829
OUR GRANTEES.

17
00:01:02,829 --> 00:01:09,940
THUS THE CREATION OF THE MISSIONSTEM WEBSITE.

18
00:01:09,940 --> 00:01:20,920
MISSIONSTEM IS –
UNDER THE NATION'S CIVIL RIGHTS LAWS

19
00:01:20,920 --> 00:01:25,409
AND TO ENHANCE THEIR DIVERSITY AND INCLUSION
EFFORTS.

20
00:01:25,409 --> 00:01:29,799
OVER THE PAST FOUR YEARS, THE MISSIONSTEM
WEBSITE HAS

21
00:01:29,799 --> 00:01:31,890
SERVED AS MANY THINGS.

22
00:01:31,890 --> 00:01:35,530
AMONG THEM, A CATALYST FOR CHANGE, A VEHICLE
FOR

23

00:01:35,530 --> 00:01:39,159

HIGHLIGHTING BEST PRACTICES, AND A CLEARINGHOUSE
FOR

24

00:01:39,159 --> 00:01:43,189

INFORMATION CRITICAL TO EQUAL OPPORTUNITY
AND DIVERSITY

25

00:01:43,189 --> 00:01:45,640

EFFORTS IN STEM.

26

00:01:45,640 --> 00:01:49,380

TODAY WE BRING YOU OUR GRANT RECIPIENTS, TOGETHER
TO

27

00:01:49,380 --> 00:01:54,369

BRING – AND TO BEGIN AN INTERACTIVE DIALOGUE
WITH NASA

28

00:01:54,369 --> 00:01:58,370

THAT WE BELIEVE IS THE NEXT LOGICAL STEP IN
OUR EFFORTS

29

00:01:58,370 --> 00:02:02,920

TO CREATE DIVERSITY IN STEM AND TO PROVIDE
MORE

30

00:02:02,920 --> 00:02:05,990

INCLUSIVE STEM PROGRAM ENVIRONMENTS.

31

00:02:05,990 --> 00:02:14,279

WE WANT THIS TO BE A RICH AND THOUGHTFUL CONVERSATION
THAT CAN LEAD US TO REAL-WORLD PRACTICAL SOLUTIONS

32

00:02:14,279 --> 00:02:18,309

TO
THE CHALLENGES CONFRONTING US IN STEM.

33

00:02:18,309 --> 00:02:22,659

IT IS OUR INTENTION TO OFFER VALUABLE INFORMATION
ON

34

00:02:22,659 --> 00:02:26,370

NASA'S WORKFORCE OF THE FUTURE, NASA GRANTS
AND

35

00:02:26,370 --> 00:02:29,769

CONTRACTS, AND THE SPECIFIC WAYS IN WHICH
CIVIL-RIGHTS

36

00:02:29,769 --> 00:02:33,909

COMPLIANCE PLAYS A CRITICAL ROLE IN EFFORTS
TO CREATE A

37

00:02:33,909 --> 00:02:37,879

MORE DIVERSE AND INCLUSIVE STEM COMMUNITY.

38

00:02:37,879 --> 00:02:42,069

WE ALSO WANT THIS TO BE A SHOWCASE FOR ALL
THE GOOD

39

00:02:42,069 --> 00:02:45,409

WORK AND THE MANY PROMISING PRACTICES THAT
YOUR

40

00:02:45,409 --> 00:02:50,189

INSTITUTIONS AND OTHER STAKEHOLDERS ARE ALREADY
ENGAGING IN.

41

00:02:50,189 --> 00:02:54,379

THIS IS AN OPPORTUNITY FOR IDEA GENERATION,
THROUGH AN

42

00:02:54,379 --> 00:02:58,249

INTENTIONAL AND DELIBERATE FOCUS ON EQUAL
OPPORTUNITY

43

00:02:58,249 --> 00:03:01,510

AND DIVERSITY AND INCLUSION IN THE STEM FIELD.

44

00:03:01,510 --> 00:03:05,390

THIS IS WHY WE ARE HERE TODAY AND THIS IS
THE WORK THAT

45

00:03:05,390 --> 00:03:09,480

ANY OF US HAVE BEEN DOING FOR A LONG TIME
AND THIS IS A

46

00:03:09,480 --> 00:03:12,549

SETTING FOR COLLABORATIVE AGREEMENT.

47

00:03:12,549 --> 00:03:16,559

IT IS TIME FOR US TO TAKE BOLD STEPS TOGETHER.

48

00:03:16,559 --> 00:03:20,750

AGAIN, I WELCOME YOU TO THE MISSION STEM SUMMIT
AND AT

49

00:03:20,750 --> 00:03:28,219

THIS TIME, WE WILL HEAR FROM THE NASA ADMINISTRATOR,
CHARLIE ODEN.

50

00:03:28,219 --> 00:03:30,959

>> WELCOME TO THE FIRST EVER MISSIONSTEM SUMMIT.

51

00:03:30,959 --> 00:03:36,010

I WANT TO SAY HOW PROUD I AM OF THE WORK THAT
NASA HAS

52

00:03:36,010 --> 00:03:41,430

BEEN DOING IN THE FIELDS OF EQUAL OPPORTUNITY,
DIVERSITY AND INCLUSION IN STEM AND ALSO HOW

53

00:03:41,430 --> 00:03:46,299

SAD I AM
AND SORRY THAT I CANNOT BE HERE TODAY BECAUSE

54

00:03:46,299 --> 00:03:48,659

I THINK
IT IS GOING TO BE INCREDIBLE.

55

00:03:48,659 --> 00:03:51,889

WE ARE MAKING GREAT STRIDES, BUT WE RECOGNIZE
THAT

56

00:03:51,889 --> 00:03:54,260

THERE IS STILL MUCH TO DO.

57

00:03:54,260 --> 00:03:57,579

TODAY, WE ARE TAKING ANOTHER IMPORTANT STEP
IN OUR

58

00:03:57,579 --> 00:04:01,239

SHARED JOURNEY TOWARD MORE DIVERSE STEM ACADEMIC
AND

59

00:04:01,239 --> 00:04:02,859

WORKPLACE ENVIRONMENTS.

60

00:04:02,859 --> 00:04:04,269

THIS BENEFITS NASA.

61

00:04:04,269 --> 00:04:08,219

OUR MANY GRANT RECIPIENT INSTITUTIONS AND
OUR ENTIRE

62

00:04:08,219 --> 00:04:09,249

NATION.

63

00:04:09,249 --> 00:04:12,510

WE SEEK THIS DIVERSITY AND THE INCLUSIVE PRACTICE
TO

64

00:04:12,510 --> 00:04:15,169

SUPPORT IT BECAUSE THEY ARE CRITICAL TO THE
NATION

65

00:04:15,169 --> 00:04:17,959

SCIENTIFIC AND ECONOMIC FUTURE.

66

00:04:17,959 --> 00:04:21,209

WE MUST ENSURE THAT EQUAL OPPORTUNITIES ARE
BEING

67

00:04:21,209 --> 00:04:24,919

AFFORDED REGARDLESS OF ONE'S RACE, GENDER,
OR OTHER

68

00:04:24,919 --> 00:04:26,060

LEGALLY PROTECTED STATUS.

69

00:04:26,060 --> 00:04:30,729

THE NATIONAL SCIENCE FOUNDATION DATA TELLS
US THAT

70

00:04:30,729 --> 00:04:36,259

WOMEN ACCOUNT FOR ONLY 19 PERCENT OF ALL ENGINEERING
AND PHYSICS DEGREES.

71

00:04:36,259 --> 00:04:39,070

AFRICAN AMERICANS ACCOUNT FOR ONLY FOUR PERCENT
OF ALL

72

00:04:39,070 --> 00:04:43,460

ENGINEERING AND 2.4 PERCENT OF PHYSICS DEGREES.

73

00:04:43,460 --> 00:04:46,520

THESE DISPARITIES ARE OF GREAT CONCERN.

74

00:04:46,520 --> 00:04:50,340

AND WE, AS A NATION, CAN AND MUST DO BETTER.

75

00:04:50,340 --> 00:04:53,590

WE MUST NURTURE AND EMBRACE ALL OF THE TALENT
THAT WE

76

00:04:53,590 --> 00:04:57,860

HAVE AVAILABLE TO US, BOTH TAPPED AND UNTAPPED.

77

00:04:57,860 --> 00:05:01,080

AS A WORLD LEADER IN SCIENCE, AERONAUTICS,
SPACE

78

00:05:01,080 --> 00:05:04,449

EXPLORATION AND TECH KNOWLEDGE HE, NASA CANNOT
AFFORD

79

00:05:04,449 --> 00:05:06,620

TO DO ANYTHING LESS.

80

00:05:06,620 --> 00:05:10,229

THIS AWESOME AND UNPRECEDENTED NATURE OF THE
MISSIONS

81

00:05:10,229 --> 00:05:13,960

WE UNDERTAKE DEMANDS TALENT FROM EVERY CORNER
OF THE

82

00:05:13,960 --> 00:05:14,960

COUNTRY.

83

00:05:14,960 --> 00:05:17,360

FROM EVERY WALK OF LIFE.

84

00:05:17,360 --> 00:05:20,370

TALENT THAT REFLECTS A VAST DIVERSITY OF DISCIPLINE
AND

85

00:05:20,370 --> 00:05:21,690

THOUGHT.

86

00:05:21,690 --> 00:05:24,949

WITHOUT THESE, WE CAN NEVER ACHIEVE THE KIND
OF COMPLEX

87

00:05:24,949 --> 00:05:28,500

SOLUTIONS TO TECHNICAL PROBLEMS THAT WE NEED.

88

00:05:28,500 --> 00:05:32,020

TODAY, NASA IS ON A JOURNEY TO MARS THAT WILL
PLACE

89

00:05:32,020 --> 00:05:35,360

HUMAN BEINGS ON ANOTHER BODY IN OUR SOLAR
SYSTEM FOR

90

00:05:35,360 --> 00:05:38,310

ONLY THE SECOND TIME IN HISTORY.

91

00:05:38,310 --> 00:05:41,750

AFTER MORE THAN 40 YEARS WITHOUT HUMAN SPACE
LIFE

92

00:05:41,750 --> 00:05:43,759

BEYOND OUR BORDERS.

93

00:05:43,759 --> 00:05:46,610

WE ARE EXTENDING THE HUMAN PRESENCE TO THE
FARTHEST

94

00:05:46,610 --> 00:05:49,711

REACHES OF OUR SOLAR SYSTEM WITH ROBOTIC ASIANS
TO

95

00:05:49,711 --> 00:05:53,719

JUPITER, EUROPA AND PLUTO TO NAME A FEW.

96

00:05:53,719 --> 00:05:56,740

RIGHT HERE AT HOME WE ARE INVOLVED IN A HOST
OF EFFORTS

97

00:05:56,740 --> 00:05:59,759

TO BETTER LIFE ON EARTH FROM GATHERING DATA
ABOUT

98

00:05:59,759 --> 00:06:03,449

CLIMATE CHANGE TO DEVELOPING SAFER AIR TRAVEL
TO HELP

99

00:06:03,449 --> 00:06:05,509

FIGHTING FOREST FIRES.

100

00:06:05,509 --> 00:06:09,180

TO DO ALL THESE AMAZING THINGS, OUR NATION
NEEDS A

101

00:06:09,180 --> 00:06:12,439

VIBRANT, INNOVATIVE AND DIVERSE STEM COMMUNITY.

102

00:06:12,439 --> 00:06:15,009

THAT'S WHAT THIS SUMMIT IS ALL ABOUT.

103

00:06:15,009 --> 00:06:18,280

HELPING US TO DO A BETTER JOB OF DIVERSIFYING
STEM,

104

00:06:18,280 --> 00:06:22,449

NURTURING THE TALENT WE HAVE, AND INSPIRING
A NEW

105

00:06:22,449 --> 00:06:23,449

GENERATION.

106

00:06:23,449 --> 00:06:26,819

I CANNOT TELL YOU HOW PLEASED I AM AT THE
TEAM WE HAVE

107

00:06:26,819 --> 00:06:28,749

GATHERED TO DO THIS.

108

00:06:28,749 --> 00:06:31,650

JOINING US OUR LEADERS FROM THE WHITE HOUSE,
AND

109

00:06:31,650 --> 00:06:33,909

MEMBERS OF CONGRESS AND THEIR STAFFS.

110

00:06:33,909 --> 00:06:39,719

AS WELL AS TOP OFFICIALS FROM ACROSS GOVERNMENT,
ACADEMIA, SCIENTIFIC CULTURAL INSTITUTIONS

111

00:06:39,719 --> 00:06:40,719

AND
INDUSTRY.

112

00:06:40,719 --> 00:06:44,150

NOW, I WOULD LIKE TO SHARE WITH YOU AN IMPORTANT
VIDEO

113

00:06:44,150 --> 00:06:50,960

MESSAGE FROM SEVERAL MEMBERS OF CONGRESS DOES
ON

114

00:06:50,960 --> 00:06:54,130

PROMOTING STEM DIVERSITY AND INCLUSION AT
ACADEMIC

115

00:06:54,130 --> 00:06:56,930

INSTITUTIONS AND IN THE WORK PLACE.

116

00:06:56,930 --> 00:07:00,360

AND HOW DOING SO CAN CONTRIBUTE TO THE STRENGTH
AND

117

00:07:00,360 --> 00:07:03,430

PRODUCT VIDEO OF THE AMERICAN WORKFORCE.

118

00:07:03,430 --> 00:07:06,479

NO MISTAKE ABOUT IT, THOUGH, LEADERSHIP FROM
THE VERY

119

00:07:06,479 --> 00:07:10,060

TOP IS WHAT IS NEEDED TO REALIZE OUR OBJECTIVES
AND

120
00:07:10,060 --> 00:07:12,160
THIS WE HAVE TODAY.

121
00:07:12,160 --> 00:07:16,240
THEREFORE, I WOULD LIKE TO THANK THESE MEMBERS,
AS WELL

122
00:07:16,240 --> 00:07:19,219
AS THE MANY OTHER MEMBERS OF CONGRESS, WHO
HAVE

123
00:07:19,219 --> 00:07:23,169
CONSISTENTLY SUPPORTED NASA'S STEM OUTREACH
RECORDS.

124
00:07:23,169 --> 00:07:26,610
AFTER YOU HEAR FROM THE MEMBERS, I INVITE
YOU TO BE

125
00:07:26,610 --> 00:07:30,750
SURE TO STRETCH YOUR PERSPECTIVE IT'S AT THIS
EVENT.

126
00:07:30,750 --> 00:07:32,590
LEARNING COLLABORATE.

127
00:07:32,590 --> 00:07:37,039
ENJOY THE REST OF THESE EXCITING TWO DAYS
ON THIS VERY

128
00:07:37,039 --> 00:07:38,870
CRITICAL TOPIC.

129
00:07:38,870 --> 00:07:44,259
>> AS A CONGRESSWOMAN – I'M CONGRESSMAN
JOHNSON AND I

130
00:07:44,259 --> 00:07:48,660
LIKE TO WELCOME YOU TO THE FIRST NASA ASIAN
STEM

131
00:07:48,660 --> 00:07:50,460
SUMMIT.

132
00:07:50,460 --> 00:07:55,430
FOR MY ENTIRE CAREER I HAVE CHAMPION POLICIES
THAT

133
00:07:55,430 --> 00:07:58,540
ENCOURAGE WOMEN AND MEN IRONY STUDENTS TO
OBTAIN

134
00:07:58,540 --> 00:08:03,360
ADVANCED DEGREES IN STEM, AS A RANKING MEMBER
ON THE

135
00:08:03,360 --> 00:08:10,229
COMMITTEE OF SPACE AND TECHNOLOGY IN THE FIRST
AFRICAN-AMERICAN AND THE FIRST WOMAN TO HOLD

136
00:08:10,229 --> 00:08:14,419
THIS
POSITION, I AM PUSHING FOR STEM EDUCATION

137
00:08:14,419 --> 00:08:18,020
AND
BROADENING PARTICIPATION TO BE ON THE PRIORITY

138
00:08:18,020 --> 00:08:20,340
LIST OF
ALL OF MY COLLEAGUES.

139
00:08:20,340 --> 00:08:25,080
I RECALL HOW A GENERATION WAS INSPIRED TO
PURSUE

140

00:08:25,080 --> 00:08:30,349

CAREERS IN MATH AND SCIENCE THE CUSS OF THE
SPACE RACE.

141

00:08:30,349 --> 00:08:33,190

STUDENTS ARE STILL INSPIRED BY ASTRONOMY AND
SPACE

142

00:08:33,190 --> 00:08:34,909

EXPLORATION.

143

00:08:34,909 --> 00:08:38,729

AND THAT IS WHY IT IS SO IMPORTANT THAT NASA
IS WORKING

144

00:08:38,729 --> 00:08:43,500

TO PURSUE INNOVATIVE WAYS TO INCREASE ACCESS
TO AND

145

00:08:43,500 --> 00:08:49,980

INTEREST IN STEM FIELDS AND WORKING WITH GRANTEE
INSTITUTIONS.

146

00:08:49,980 --> 00:08:53,740

THEIR BENEFICIARIES AND OTHER STAKEHOLDERS
TO REALIZE

147

00:08:53,740 --> 00:08:57,199

THAT THE BENEFITS OF OUR SHARED INTERESTS
IN STEM

148

00:08:57,199 --> 00:09:02,380

EXCELLENT, EQUAL OPPORTUNITY, DIVERSITY AND
INCLUSION,

149

00:09:02,380 --> 00:09:07,510

BECAUSE THIS IS NOT JUST AN ISSUE, IT'S AN
ECONOMIC

150

00:09:07,510 --> 00:09:12,270

ISSUE, IT'S ABOUT THE COMPETITIVENESS OF OUR
ENTIRE

151

00:09:12,270 --> 00:09:13,270
NATION.

152

00:09:13,270 --> 00:09:17,600
STEM INITIATIVES LIKE THIS ARE CRUCIAL TO
THE FUTURE OF

153

00:09:17,600 --> 00:09:21,440
INNOVATION IN THE UNITED STATES AND THE WORLD.

154

00:09:21,440 --> 00:09:29,529
RESEARCH SHOWS THAT WOMEN AND UNDERREPRESENTED
MINORITIES WHO, BY 2050 COMPRISE MORE THAN

155

00:09:29,529 --> 00:09:33,050
SIX PERCENT
OF THE POPULATION, ARE DISPROPORTIONATELY

156

00:09:33,050 --> 00:09:38,540
LOST AT EVERY
TRANSITION POINT IN THEIR STEM STUDIES.

157

00:09:38,540 --> 00:09:40,430
AND AT RESEARCH CAREERS.

158

00:09:40,430 --> 00:09:45,389
I STRONGLY FEEL THAT THE FUTURE SUCCESS OF
OUR NATION

159

00:09:45,389 --> 00:09:47,600
IS DEPENDENT UPON OUR ABILITY TO INNOVATE.

160

00:09:47,600 --> 00:09:54,220
AND OUR ABILITY TO INNOVATE IS DIRECTLY TIED
TO FEDERAL

161

00:09:54,220 --> 00:09:59,300

RESEARCH EFFORTS AND OUR SUCCESS IN STEM EDUCATION.

162

00:09:59,300 --> 00:10:02,420

I THINK AND APPLAUD ALL OF YOU FOR BEING PART
OF

163

00:10:02,420 --> 00:10:06,270

TODAY'S CONVERSATION AND TO ENCOURAGE YOU
TO CONTINUE

164

00:10:06,270 --> 00:10:10,630

THESE CONVERSATIONS SO THAT WE CAN MAKE SURE
THAT THE

165

00:10:10,630 --> 00:10:13,670

UNITED STATES REMAINS THE TECHNOLOGY LEADER
OF THE

166

00:10:13,670 --> 00:10:17,199

WORLD AND THAT EVERY DEMOGRAPHIC GROUP IN
OUR GREAT

167

00:10:17,199 --> 00:10:22,040

NATION HAS THE SAME OPPORTUNITY TO BE A PART
OF THAT

168

00:10:22,040 --> 00:10:23,040

FUTURE.

169

00:10:23,040 --> 00:10:25,160

>>> WELCOME TO WASHINGTON DC AND WELCOMED
TO NASA'S

170

00:10:25,160 --> 00:10:26,160

MISSION STEM.

171

00:10:26,160 --> 00:10:27,160

WE ARE GLAD YOU ARE HERE.

172
00:10:27,160 --> 00:10:30,180
THIS IS AN IMPORTANT SUBJECT TO BE FOCUSED
ON, THAT

173
00:10:30,180 --> 00:10:33,680
QUESTION OF HOW TO REOPEN UP STEM FIELDS TO
EVERYBODY?

174
00:10:33,680 --> 00:10:36,519
NASA NEEDS OUR BEST AND BRIGHTEST AND IF WE
ARE

175
00:10:36,519 --> 00:10:39,430
EXCLUDING CERTAIN PEOPLE BECAUSE OF WHERE
THEY'RE FROM

176
00:10:39,430 --> 00:10:42,339
OR THEIR RACE OR THEIR SEX, WE ARE LOSING
OUT ON

177
00:10:42,339 --> 00:10:45,620
POTENTIAL PEOPLE WHO COULD BE A KEY PART OF
ASIANS IN

178
00:10:45,620 --> 00:10:49,040
THE FUTURE OR DISCOVERY IN THE FUTURE OR FINDING
CURES

179
00:10:49,040 --> 00:10:50,120
IN THE FUTURE.

180
00:10:50,120 --> 00:10:52,259
SO WE HAVE TO CONTINUALLY ASK A QUESTION OF
HOW DO WE

181
00:10:52,259 --> 00:10:56,180
OPEN UP STEM FIELDS TO EVERYBODY, FINDING
THOSE BEST

182

00:10:56,180 --> 00:10:59,889
AND BRIGHTEST GEMS AND YOUNG PEOPLE WHO CAN
RISE UP TO

183
00:10:59,889 --> 00:11:02,010
BE A PART OF NASA INTO THE FUTURE?

184
00:11:02,010 --> 00:11:04,620
I HAD THE PRIVILEGE JUST A FEW WEEKS AGO TO
BE IN ST.

185
00:11:04,620 --> 00:11:09,630
LOUIS AT THE WORLD CHAMPIONSHIP OF THE FIRST
COMPETITION IN ROBOTICS.

186
00:11:09,630 --> 00:11:12,310
I HAD THE GREAT PRIVILEGE OF BEING LED AROUND
BY A

187
00:11:12,310 --> 00:11:14,589
COUPLE OF YOUNG WOMEN WHO ARE PART OF TEAMS
FOR MY

188
00:11:14,589 --> 00:11:18,389
DISTRICT READ ONE, ANNIE HUBBARD, WHO IS FROM
OSWEGO;

189
00:11:18,389 --> 00:11:20,840
ALLIE BALDWIN WHO IS FROM SAINT CHARLESTON.

190
00:11:20,840 --> 00:11:23,810
THEY TOOK ME AROUND TO SHOW ME THEIR PROJECTS
WITH

191
00:11:23,810 --> 00:11:27,301
ROBOTICS BUT I WAS ABLE TO HEAR FROM THEM
THAT JUST A

192
00:11:27,301 --> 00:11:30,670
FEW YEARS AGO THEY HAD NO INTEREST IN ENGINEERING.

193

00:11:30,670 --> 00:11:33,970

BUT BECAUSE THEY WERE INTRODUCED TO ENGINEERING
IN STEM

194

00:11:33,970 --> 00:11:37,400

FIELDS THROUGH ROBOTICS, NOW THEY'RE LOOKING
TO STUDY

195

00:11:37,400 --> 00:11:39,970

THIS IN COLLEGE AND HOPEFULLY, HAVE A CAREER
IN

196

00:11:39,970 --> 00:11:43,350

ENGINEERING OR AEROSPACE, AERONAUTICS, OTHER
THINGS

197

00:11:43,350 --> 00:11:44,350

LIKE THAT.

198

00:11:44,350 --> 00:11:47,329

AND HE IS GOING TO BE GOING WITH A SCHOLARSHIP
TO THE

199

00:11:47,329 --> 00:11:50,220

UNIVERSITY OF ALABAMA TO STUDY AERONAUTICAL
ENGINEERING

200

00:11:50,220 --> 00:11:53,180

AND ALLEY IS LOOKING AT THE UNIVERSITY OF
ENGINEER FOR

201

00:11:53,180 --> 00:11:54,190

ENGINEERING.

202

00:11:54,190 --> 00:11:57,720

SO YOU SEE HOW CAPTURING, SPARKING THAT INTEREST
AT AN

203

00:11:57,720 --> 00:12:00,500

EARLY AGE IS WHAT MAKES THE DIFFERENCE.

204

00:12:00,500 --> 00:12:02,610

FOR THEM, IT WAS FRESHMAN, SOPHOMORE YEARS
OF HIGH

205

00:12:02,610 --> 00:12:03,610

SCHOOL.

206

00:12:03,610 --> 00:12:05,000

SOMETIMES IT'S EARLIER THAN THAT BUT WE HAVE
TO MAKE

207

00:12:05,000 --> 00:12:06,490

SURE WE DO NOT MISS ANYBODY.

208

00:12:06,490 --> 00:12:07,600

WE NEED YOUR HELP.

209

00:12:07,600 --> 00:12:10,120

WE NEED TO REACH OUT TO THESE YOUNG PEOPLE
TO LET THEM

210

00:12:10,120 --> 00:12:12,480

KNOW THAT WE ARE DEPENDING ON THEM.

211

00:12:12,480 --> 00:12:13,770

NASA IS DEPENDING ON THEM.

212

00:12:13,770 --> 00:12:16,630

>> THANK YOU FOR THE INVITATION TO BE WITH
YOU TODAY.

213

00:12:16,630 --> 00:12:19,389

THIS IS SUCH AN IMPORTANT CONVERSATION AND
I COMMEND

214

00:12:19,389 --> 00:12:23,520

YOU FOR WORKING TO MAKE SCIENCE TRULY INCLUSIVE.

215

00:12:23,520 --> 00:12:27,320

BUT INCLUSIVE MEANS MORE THAN HAVING YOUR
WOMEN AND

216

00:12:27,320 --> 00:12:30,759

MORE PEOPLE OF DIVERSITY WORKING IN SCIENCE.

217

00:12:30,759 --> 00:12:34,800

IT ALSO MEANS HAVING AN ENVIRONMENT THAT IS
HOSPITABLE

218

00:12:34,800 --> 00:12:39,560

FOR THOSE WHO ARE BEING INVITED TO JOIN IN
THE

219

00:12:39,560 --> 00:12:40,600

CONVERSATION.

220

00:12:40,600 --> 00:12:43,140

I HAVE BEEN FIGHTING SEXUAL ASSAULT IN THE
MILITARY AND

221

00:12:43,140 --> 00:12:45,660

ON COLLEGE CAMPUSES FOR YEARS.

222

00:12:45,660 --> 00:12:49,760

AND I HAVE SEEN THE SAME PATTERN OVER AND
OVER AGAIN.

223

00:12:49,760 --> 00:12:52,410

TYPICALLY, PREDATORS ARE IN ENVIRONMENTS WHERE
THERE IS

224

00:12:52,410 --> 00:12:55,389

A CLOSED INSTITUTION, WHERE THERE IS A SEPARATE
CODE OF

225

00:12:55,389 --> 00:12:59,589

CONDUCT, SO THEY HAVE LOTS OF POWER TO SWEEP
CASES

226

00:12:59,589 --> 00:13:01,519

UNDER THE PROVERBIAL RUG.

227

00:13:01,519 --> 00:13:06,310

OFTEN, IT IS SIX OR SEVEN TIMES BEFORE A PREDATOR
IS

228

00:13:06,310 --> 00:13:07,930

ACTUALLY CAUGHT.

229

00:13:07,930 --> 00:13:11,660

BECAUSE EVERYONE BELIEVES THE INCIDENT TO
BE IN

230

00:13:11,660 --> 00:13:12,660

OUTLIER.

231

00:13:12,660 --> 00:13:17,480

WELL, SURVIVORS, OFTEN GRADUATE STUDENTS AND
POSTDOCS,

232

00:13:17,480 --> 00:13:23,980

LOSING YEARS OF RESEARCH, THEIR FUNDING, THEIR
CONFIDENCE AND OFTEN THEY ABANDON THE FIELD

233

00:13:23,980 --> 00:13:25,480

ALTOGETHER.

234

00:13:25,480 --> 00:13:27,589

AND THOSE CAREERS.

235

00:13:27,589 --> 00:13:31,170

TAKE THE ACTIONS OF PROFESSOR TIM SLATER WHO
ENGAGED IN

236

00:13:31,170 --> 00:13:35,670
TRULY DISGUSTING HARASSMENT GRADUATE STUDENTS
HE WAS

237
00:13:35,670 --> 00:13:36,670
ADVISING.

238
00:13:36,670 --> 00:13:40,410
BY TELLING THEM THEY WOULD TEACH BETTER WITHOUT
UNDERWEAR.

239
00:13:40,410 --> 00:13:43,319
AND REQUIRING THEM TO MEET HIM FOR OFFICE
HOURS AT A

240
00:13:43,319 --> 00:13:44,480
STRIP CLUB.

241
00:13:44,480 --> 00:13:48,639
THERE WERE NO CONSEQUENCES FOR HIS ACTIONS
ASIDE FROM

242
00:13:48,639 --> 00:13:50,610
SENSITIVITY TRAINING.

243
00:13:50,610 --> 00:13:54,440
AND THE REPORT OF HIS MALFEASANCE WAS SEALED.

244
00:13:54,440 --> 00:13:56,860
HE NOW HOLDS AN ENDOWED CHARITY AT THE UNIVERSITY
OF

245
00:13:56,860 --> 00:14:01,079
WYOMING WHERE UNIVERSITY OF OFFICIALS WERE
UNAWARE OF

246
00:14:01,079 --> 00:14:04,079
THE GRAVITY OF HIS BEHAVIOR BEFORE HIRING
THEM.

247

00:14:04,079 --> 00:14:07,200

NOW HE SAYS HE IS NOW REFORMED.

248

00:14:07,200 --> 00:14:10,980

THE STUDENTS HE HARASSED LOST YEARS OF WORK
AND MANY OF

249

00:14:10,980 --> 00:14:13,270

THEM LEFT THE FIELD.

250

00:14:13,270 --> 00:14:17,240

THE JEFF MARCY AND JASON LEAD CASES WERE SIMILAR.

251

00:14:17,240 --> 00:14:20,879

FEDERAL FUNDING AGENCIES AND UNIVERSITIES
NEED TO STAND

252

00:14:20,879 --> 00:14:26,810

UP FOR SURVIVORS AND STOP FUNDING AND HIRING
HARASSERS.

253

00:14:26,810 --> 00:14:32,930

THAT'S WHY I'M WORKING ON LEGISLATURES ACT.

254

00:14:32,930 --> 00:14:46,470

THIS WILL BILL WILL REQUIRE FACULTIES – SEXUAL
ASSAULT

255

00:14:46,470 --> 00:14:47,470

AND HARASSMENT.

256

00:14:47,470 --> 00:14:50,009

>> SUCCESSFUL – IT'S REALLY JUST ONE EXAMPLE
OF THE

257

00:14:50,009 --> 00:14:53,329

ASTONISHING WINS THAT OUR SCIENTISTS AND ENGINEERS
CAN

258
00:14:53,329 --> 00:14:56,160
ACHIEVE FROM EXPLORING OUR SOLAR SYSTEM TO
EXPLORING

259
00:14:56,160 --> 00:14:57,470
OUR OWN PLANET.

260
00:14:57,470 --> 00:15:02,310
AND EVEN LAUNCHING HUMANS INTO THE UNFORGIVING
ENVIRONMENT OF SPACE.

261
00:15:02,310 --> 00:15:05,490
HOW ARE STEM PROFESSIONAL AND THE ONES – GET
US THERE.

262
00:15:05,490 --> 00:15:08,350
THEY ENABLE US TO MAKE THOSE GREAT LEAPS.

263
00:15:08,350 --> 00:15:14,230
IN SCIENTIFIC INVASION IS THE PRODUCT NOT
ONLY OF HARD

264
00:15:14,230 --> 00:15:18,300
WORK, BUT IT IS BRINGING TOGETHER ALL THE
JEWS OF –

265
00:15:18,300 --> 00:15:20,899
THAT'S WHY IT'S CRITICAL TO PUT STRUCTURES
IN PLACE AT

266
00:15:20,899 --> 00:15:26,610
INCREASING NUMBER OF UNDERREPRESENTED IN AND
ORTIZ AND

267
00:15:26,610 --> 00:15:27,610
WOMEN IN THE STEM FIELD.

268
00:15:27,610 --> 00:15:29,180
NOW THE GOAL OF INCREASING DIVERSITY IN THE

STEM FIELD

269

00:15:29,180 --> 00:15:31,680

ISN'T JUST ONE OF ETHICS AND MORALITY.

270

00:15:31,680 --> 00:15:34,379

IT'S ALSO A RENTED AND PRACTICAL ROLE.

271

00:15:34,379 --> 00:15:38,490

THERE IS NO ONE TYPE OF SCIENTIST ENGINEER
OR

272

00:15:38,490 --> 00:15:40,529

MATHEMATICIAN AND BRINGING THOSE DIVERSE INTO
OUR

273

00:15:40,529 --> 00:15:41,529

AGENCIES AND BUSINESSES STRENGTHENS THE WORK
THAT THOSE

274

00:15:41,529 --> 00:15:43,050

ORGANIZATIONS ARE DOING.

275

00:15:43,050 --> 00:15:49,899

SCIENCE AND TECHNOLOGY HAVE IMMENSE CAPABILITIES
TO DO

276

00:15:49,899 --> 00:15:56,060

AMAZING THINGS AND WE MUST ENSURE THAT WE
ARE USING ALL

277

00:15:56,060 --> 00:15:59,480

THE BRAINPOWER AND INGENUITY THAT IS AVAILABLE
TO US.

278

00:15:59,480 --> 00:16:05,231

I INCREASING THE RIGHTS OF THE TRULY STEM
WORKFORCE IN

279

00:16:05,231 --> 00:16:10,339
F8 ARE SPIRIT OUR TEAMS WILL BENEFIT.

280
00:16:10,339 --> 00:16:12,610
WE'VE SEEN EFFORTS TO INCREASE DIVERSITY SINCE
MY TIME

281
00:16:12,610 --> 00:16:14,400
BACK IN THE 80S.

282
00:16:14,400 --> 00:16:20,980
BUT TODAY, 84 PERCENT OF STEM RELATED JOBS
IN THIS

283
00:16:20,980 --> 00:16:25,589
COUNTRY ARE FILLED BY WIDER ASIAN AMERICAN.

284
00:16:25,589 --> 00:16:27,520
WE NEED TO BRING THE PERSPECTIVE, PROBLEM
SOLVING

285
00:16:27,520 --> 00:16:28,990
SKILLS AND RESOURCEFULNESS OF MINORITIES AND
WOMEN

286
00:16:28,990 --> 00:16:31,990
RIGHT TO THE TABLE SO WE CAN CONTINUE TO SOLVE
THE

287
00:16:31,990 --> 00:16:37,360
PROBLEM THAT OF CAPTAIN AMERICA ON THE FOREFRONT
OF

288
00:16:37,360 --> 00:16:38,500
SCIENTIFIC INNOVATION.

289
00:16:38,500 --> 00:16:41,350
GOOD LUCK IN YOUR WORK.

290

00:16:41,350 --> 00:16:44,319

THANK YOU, VERY MUCH HIGH EVERYONE.

291

00:16:44,319 --> 00:16:47,199

I WISH I COULD BE THERE WITH YOU AT NASA'S
FIRST

292

00:16:47,199 --> 00:16:49,160

MISSION STEM SUMMIT.

293

00:16:49,160 --> 00:16:51,800

DIVERSITY IS ESSENTIAL TO THE FREE FLOW OF
INFORMATION

294

00:16:51,800 --> 00:16:54,699

AND THE EXCHANGE OF GROUNDBREAKING IDEAS.

295

00:16:54,699 --> 00:16:58,040

I APPLAUD THE MISSION STEM PROGRAM FOR WORKING
TO

296

00:16:58,040 --> 00:17:02,170

ENSURE DIVERSITY AND INCLUSION WITHIN NASA.

297

00:17:02,170 --> 00:17:05,730

THE THEME OF THIS CONFERENCE, EATING THE NATIONS
STEM

298

00:17:05,730 --> 00:17:09,460

CHALLENGES, IS AN ISSUE THAT I AM WORKING
TO TACKLE IN

299

00:17:09,460 --> 00:17:10,570

THE SENATE.

300

00:17:10,570 --> 00:17:13,100

HOW CAN WE GET MORE WOMEN AND MINORITIES INTERESTED
IN

301

00:17:13,100 --> 00:17:15,080
STEM FIELDS?

302
00:17:15,080 --> 00:17:17,660
HOW DO WE ENCOURAGE YOUNG PEOPLE TO PURSUE
TRAINING AND

303
00:17:17,660 --> 00:17:21,730
CAREERS IN SCIENCE, TECHNOLOGY AND MATH FIELDS?

304
00:17:21,730 --> 00:17:24,560
THESE ARE QUESTIONS THAT AFFECT ALL OF US
AS WE SHIFT

305
00:17:24,560 --> 00:17:27,090
TO AN INNOVATION-BASED ECONOMY.

306
00:17:27,090 --> 00:17:30,050
I AM CONFIDENT THAT YOU'LL WALK AWAY FROM
THE SUMMIT OR

307
00:17:30,050 --> 00:17:33,720
IN LIGHT WHENEVER AND HOPE YOU ENJOY THE NEXT
TWO DAYS.

308
00:17:33,720 --> 00:17:38,700
THANK YOU.

309
00:17:38,700 --> 00:17:40,080
GOOD MORNING EVERYONE.

310
00:17:40,080 --> 00:17:43,530
HELLO, HOW ARE YOU DOING?

311
00:17:43,530 --> 00:17:49,330
WE ARE HERE TO RUN TWO DAYS OF THE MOST IMPORTANT
CONVERSATION I CAN THINK OF.

312
00:17:49,330 --> 00:17:50,520

IT'S CRITICALLY IMPORTANT.

313
00:17:50,520 --> 00:17:53,650
DIVERSITY, INCLUSION AND EQUAL OPPORTUNITY
IN THE STEM

314
00:17:53,650 --> 00:17:54,650
FIELDS.

315
00:17:54,650 --> 00:17:57,570
IN MANY WAYS, WE ARE GATHERED HERE TO TALK
ABOUT HOW WE

316
00:17:57,570 --> 00:18:00,600
GO FROM HERE TO HERE?

317
00:18:00,600 --> 00:18:02,340
RIGHT NOW WE ARE ONLY PROGRESSING AT THIS
RATE.

318
00:18:02,340 --> 00:18:04,010
HOW DO WE GO FROM HERE TO HERE?

319
00:18:04,010 --> 00:18:09,080
A MAJOR STEP CHANGE AND WHY HAS IT BEEN SO
SLOW?

320
00:18:09,080 --> 00:18:12,710
WE KNOW WITH THE NUMBER – THE NUMBERS ARE
NOT WHAT WE

321
00:18:12,710 --> 00:18:13,710
WANT THEM TO BE.

322
00:18:13,710 --> 00:18:15,280
WE ARE ALL WORKING ON THIS.

323
00:18:15,280 --> 00:18:16,970
WE ARE COMMITTED.

324
00:18:16,970 --> 00:18:20,690
THE STATISTICS AND WELCOMING REMARKS, BUT
I WANT TO

325
00:18:20,690 --> 00:18:24,650
REMIND US THAT IN 2013, IN THE UNITED STATES
WOMEN

326
00:18:24,650 --> 00:18:27,900
ACCOUNTED FOR 25 PERCENT OF EARNED DOCTORATE
DEGREES IN

327
00:18:31,380 --> 00:18:28,900
ENGINEERING.

328
00:18:31,380 --> 00:18:32,680
I'M IN AEROSPACE ENGINEER.

329
00:18:32,680 --> 00:18:36,200
ISN'T THIS WHAT ALL ROCKET SCIENTIST LOOK
LIKE?

330
00:18:36,200 --> 00:18:38,720
SO WHY ARE OUR NUMBERS POOR?

331
00:18:38,720 --> 00:18:43,020
AFRICAN-AMERICAN LESSON FIVE PERCENT AND HISPANICS
ARE

332
00:18:43,020 --> 00:18:45,630
ALSO LESS THAN FIVE PERCENT.

333
00:18:45,630 --> 00:18:50,440
HERE AT NASA, WE ARE 23 PERCENT ENGINEERING
WOMEN AND

334
00:18:50,440 --> 00:18:53,720
20 PERCENT WOMEN IN THE PHYSICAL SCIENCES.

335

00:18:53,720 --> 00:18:55,160
THAT'S NOT GOOD ENOUGH.

336

00:18:55,160 --> 00:18:56,160
CALL IT WHAT IT IS.

337

00:18:56,160 --> 00:18:57,800
WE ARE LOOKING FOR PARITY.

338

00:18:57,800 --> 00:19:00,690
HOW CAN WE REALLY MAKE THESE STEP CHANGES?

339

00:19:00,690 --> 00:19:04,790
THE GOOD NEWS IS DOCTORAL ENGINEERING HAS
DOUBLED IN

340

00:19:04,790 --> 00:19:05,890
THE US.

341

00:19:05,890 --> 00:19:08,310
WE CAN SAY THAT THAT IS PROGRESS.

342

00:19:08,310 --> 00:19:12,670
BUT FOR UNDERREPRESENTED POPULATIONS, EVEN
EXPONENTIAL

343

00:19:12,670 --> 00:19:18,290
ONES, TO REACH PARITY, THE 30 PERCENT FOR
UNDERREPRESENTED POPULATIONS, IT WILL TAKE

344

00:19:18,290 --> 00:19:20,710
UNTIL 2130.

345

00:19:20,710 --> 00:19:23,610
I WON'T BE ALIVE.

346

00:19:23,610 --> 00:19:25,370

WE ARE GOING TO MARS.

347

00:19:25,370 --> 00:19:28,130

BOOTS ON MARS AS YOU HEARD THE BEEN A STRAIGHTER
SAY WE

348

00:19:28,130 --> 00:19:29,950

NEED TO TAKE EVERYONE WITH US.

349

00:19:29,950 --> 00:19:33,240

SO I DID A SECOND FIT JUST TO SEE IF I COULD
INCREASE

350

00:19:33,240 --> 00:19:35,160

MY DATA LITTLE BIT.

2150.

351

00:19:35,160 --> 00:19:39,640

WE WILL BE ON MARS BEFORE WE REACH PARITY
IF WE DO NOT

352

00:19:39,640 --> 00:19:41,600

DO SOMETHING AND THAT IS WHY WE ARE HERE TOGETHER.

353

00:19:41,600 --> 00:19:44,160

WE'RE HERE TOGETHER BECAUSE THERE ARE GREAT
PROMISING

354

00:19:44,160 --> 00:19:45,350

PRACTICES OUT THERE.

355

00:19:45,350 --> 00:19:48,440

SOME FOLKS ARE DOING EXCEPTIONAL JOBS, BUT
WE NEED TO

356

00:19:48,440 --> 00:19:49,510

SHARE THOSE.

357

00:19:49,510 --> 00:19:52,250

WE NEED TO ALL BE IN THIS TOGETHER AND FRANKLY,
WE JUST

358
00:19:52,250 --> 00:19:55,000
NEED TO LOOK FOR THAT STEP CHANGE TO MAKE
CHANGE AND

359
00:19:55,000 --> 00:19:56,850
MAKE OUR GOALS TO SAY WE CAN DO THIS.

360
00:19:56,850 --> 00:19:59,200
WE CAN DO THIS WITHIN THE DECADE, BUT WE ARE
GOING TO

361
00:19:59,200 --> 00:20:00,200
DO IT TOGETHER.

362
00:20:00,200 --> 00:20:03,450
WHY IS IT SO CRITICAL TO NASA?

363
00:20:03,450 --> 00:20:04,450
OUR DOORS ARE OPEN.

364
00:20:04,450 --> 00:20:05,450
THIS IS THE PIPELINE.

365
00:20:05,450 --> 00:20:07,750
THAT'S WHY I CARE SO DEEPLY ABOUT THAT.

366
00:20:07,750 --> 00:20:08,750
CHANGING THAT.

367
00:20:08,750 --> 00:20:12,210
OPENING OUR DOORS UP AND BRINGING EVERYONE
IN.

368
00:20:12,210 --> 00:20:14,080
WE ALSO KNOW IT GOES BEYOND THE NUMBERS.

369

00:20:14,080 --> 00:20:15,780

IT'S THE UNCONSCIOUS BIAS.

370

00:20:15,780 --> 00:20:19,490

IT HAS SERIOUS NEGATIVE IMPACTS ON WHO PURSUES DEGREES

371

00:20:27,150 --> 00:20:20,920

IN STEM.

372

00:20:27,150 --> 00:20:31,010

WE JUST HEARD AND WE KNOW ABOUT THE TROUBLING SEXUAL-HARASSMENT REPORTS.

373

00:20:31,010 --> 00:20:32,930

I WANT TO BE VERY CLEAR.

374

00:20:32,930 --> 00:20:36,420

SEXUAL-HARASSMENT IS A DENIAL OF EQUAL OPPORTUNITY IN

375

00:20:36,420 --> 00:20:39,530

OUR WORKFORCES, IN OUR UNIVERSITIES.

376

00:20:39,530 --> 00:20:41,850

FACULTY MEMBERS ENGAGING IN SEXUAL HARASSMENT, THEY ARE

377

00:20:41,850 --> 00:20:45,220

DENYING EQUAL OPPORTUNITIES IN EDUCATION.

378

00:20:45,220 --> 00:20:49,580

IT'S NOT JUST SEXUAL-HARASSMENT, THERE IS ALSO

379

00:20:49,580 --> 00:20:53,830

HARASSMENT ON RACE, NATIONAL ORIGIN, DISABILITY, AND

380
00:20:53,830 --> 00:20:58,280
OTHER CHARACTERISTICS THAT ARE PART BY OUR
LAWS.

381
00:20:58,280 --> 00:21:01,790
SO THAT IS WHY WE ARE HERE TO TALK ABOUT THIS,
TO HAVE

382
00:21:01,790 --> 00:21:05,050
CANDID, OPEN AND FRANK CONVERSATION.

383
00:21:05,050 --> 00:21:06,070
WE ARE LOOKING FOR SOLUTIONS.

384
00:21:06,070 --> 00:21:09,080
WE ARE LOOKING AT THE INNOVATIONS OUT THERE
AND WHAT

385
00:21:09,080 --> 00:21:11,300
ARE THE PROMISING PRACTICES THAT GO HAND-IN-HAND
TO

386
00:21:11,300 --> 00:21:14,920
REALLY ACHIEVE, TO FINALLY ACHIEVE WHERE WE
SEE PARITY

387
00:21:14,920 --> 00:21:18,520
IS, WHERE WE SEE ALL OF OURSELVES GOING READ
I'VE

388
00:21:18,520 --> 00:21:20,930
CHANGE THE CONVERSATION A LITTLE BIT AND I
ACTUALLY

389
00:21:20,930 --> 00:21:22,430
CALL IT STEM.

390
00:21:22,430 --> 00:21:25,600
I THINK WE CAN HAVE AN IMPACT IN THE STEM

FIELD, BUT WE

391
00:21:25,600 --> 00:21:28,150
NEED TO BE MORE INCLUSIVE AND SO I ACTUALLY
INCLUDE THE

392
00:21:28,150 --> 00:21:31,720
ARTS BECAUSE EVERY GIRL AND BOY THAT I TALKED
TO, I SAY

393
00:21:31,720 --> 00:21:32,780
YOU ARE THE VISIONARIES.

394
00:21:32,780 --> 00:21:34,320
YOU ARE THE STORYTELLERS.

395
00:21:34,320 --> 00:21:35,320
>>> GOOD MORNING.
I AM BRAD EMANUEL.

396
00:21:35,320 --> 00:21:36,320
AND I WOULD LIKE TO WELCOME YOU TO THE VERY
FIRST

397
00:21:36,320 --> 00:21:37,320
MISSIONSTEM SUMMIT 2016.
WE ARE PLEASED TO HAVE SOMEBODY ASSOCIATES

398
00:21:37,320 --> 00:21:38,320
WITH US.
BOTH HERE AND PERSON AS WELL AS VIRTUALLY.

399
00:21:38,320 --> 00:21:39,320
AS MANY OF YOU MAY KNOW, NASA HAS FOR MANY
YEARS

400
00:21:39,320 --> 00:21:40,320
CONDUCTED COMPLIANT REVIEW PROGRAMS TO BETTER
ENSURE

401
00:21:40,320 --> 00:21:41,320
THAT OUR GRANTEES ARE OFFERING EQUAL OPPORTUNITIES
TO

402
00:21:41,320 --> 00:21:42,320
THEIR BENEFICIARIES OF THESE BE STUDENTS IN
NASA FUNDED

403
00:21:42,320 --> 00:21:43,320
SCIENCE, TECHNOLOGY ENGINEERING AND MATH OR
STEM

404
00:21:43,320 --> 00:21:44,320
VISITORS TO VISIT VISITOR PLANETARIUMS ACROSS
THE

405
00:21:44,320 --> 00:21:45,320
NATION.

406
00:21:45,320 --> 00:21:46,320
AS OUR PROGRAMMING CHORES, WE SOUGHT TO HEIGHTEN
OUR

407
00:21:46,320 --> 00:21:47,320
EFFORTS BY PROVIDING A MECHANISM FOR TOUCHING
ALL OF

408
00:21:47,320 --> 00:21:48,320
OUR GRANTEES.
THUS THE CREATION OF THE MISSIONSTEM WEBSITE.

409
00:21:48,320 --> 00:21:49,320
MISSIONSTEM IS – UNDER THE NATION'S CIVIL
RIGHTS LAWS

410
00:21:49,320 --> 00:21:50,320
AND TO ENHANCE THEIR DIVERSITY AND INCLUSION
EFFORTS.

411

00:21:50,320 --> 00:21:51,320
OVER THE PAST FOUR YEARS, THE MISSIONSTEM
WEBSITE HAS

412
00:21:51,320 --> 00:21:52,320
SERVED AS MANY THINGS.
AMONG THEM, A CATALYST FOR CHANGE, A VEHICLE

413
00:21:52,320 --> 00:21:53,320
FOR
HIGHLIGHTING BEST PRACTICES, AND A CLEARINGHOUSE

414
00:21:53,320 --> 00:21:54,320
FOR
INFORMATION CRITICAL TO EQUAL OPPORTUNITY

415
00:21:54,320 --> 00:21:55,320
AND DIVERSITY
EFFORTS IN STEM.

416
00:21:55,320 --> 00:21:56,320
TODAY WE BRING YOU OUR GRANT RECIPIENTS, TOGETHER
TO

417
00:21:56,320 --> 00:21:57,320
BRING – AND TO BEGIN AN INTERACTIVE DIALOGUE
WITH NASA

418
00:21:57,320 --> 00:21:58,320
THAT WE BELIEVE IS THE NEXT LOGICAL STEP IN
OUR EFFORTS

419
00:21:58,320 --> 00:21:59,320
TO CREATE DIVERSITY IN STEM AND TO PROVIDE
MORE

420
00:21:59,320 --> 00:22:00,320
INCLUSIVE STEM PROGRAM ENVIRONMENTS.

421
00:22:00,320 --> 00:22:01,320

WE WANT THIS TO BE A RICH AND THOUGHTFUL CONVERSATION
THAT CAN LEAD US TO REAL-WORLD PRACTICAL SOLUTIONS

422

00:22:01,320 --> 00:22:02,320

TO
THE CHALLENGES CONFRONTING US IN STEM.

423

00:22:02,320 --> 00:22:03,320

IT IS OUR INTENTION TO OFFER VALUABLE INFORMATION
ON

424

00:22:03,320 --> 00:22:04,320

NASA'S WORKFORCE OF THE FUTURE, NASA GRANTS
AND

425

00:22:04,320 --> 00:22:05,320

CONTRACTS, AND THE SPECIFIC WAYS IN WHICH
CIVIL-RIGHTS

426

00:22:05,320 --> 00:22:06,320

COMPLIANCE PLAYS A CRITICAL ROLE IN EFFORTS
TO CREATE A

427

00:22:06,320 --> 00:22:07,320

MORE DIVERSE AND INCLUSIVE STEM COMMUNITY.
WE ALSO WANT THIS TO BE A SHOWCASE FOR ALL

428

00:22:07,320 --> 00:22:08,320

THE GOOD
WORK AND THE MANY PROMISING PRACTICES THAT

429

00:22:08,320 --> 00:22:09,320

YOUR
INSTITUTIONS AND OTHER STAKEHOLDERS ARE ALREADY

430

00:22:09,320 --> 00:22:10,320

ENGAGING IN.
THIS IS AN OPPORTUNITY FOR IDEA GENERATION,

431

00:22:10,320 --> 00:22:11,320

THROUGH AN
INTENTIONAL AND DELIBERATE FOCUS ON EQUAL

432
00:22:11,320 --> 00:22:12,320
OPPORTUNITY
AND DIVERSITY AND INCLUSION IN THE STEM FIELD.

433
00:22:12,320 --> 00:22:13,320
THIS IS WHY WE ARE HERE TODAY AND THIS IS
THE WORK THAT

434
00:22:13,320 --> 00:22:14,320
ANY OF US HAVE BEEN DOING FOR A LONG TIME
AND THIS IS A

435
00:22:14,320 --> 00:22:15,320
SETTING FOR COLLABORATIVE AGREEMENT.
IT IS TIME FOR US TO TAKE BOLD STEPS TOGETHER.

436
00:22:15,320 --> 00:22:16,320
AGAIN, I WELCOME YOU TO THE MISSION STEM SUMMIT
AND AT

437
00:22:16,320 --> 00:22:17,320
THIS TIME, WE WILL HEAR FROM THE NASA ADMINISTRATOR,
CHARLIE ODEN.

438
00:22:17,320 --> 00:22:18,320
>> WELCOME TO THE FIRST EVER MISSIONSTEM SUMMIT.
I WANT TO SAY HOW PROUD I AM OF THE WORK THAT

439
00:22:18,320 --> 00:22:19,320
NASA HAS
BEEN DOING IN THE FIELDS OF EQUAL OPPORTUNITY,

440
00:22:19,320 --> 00:22:20,320
DIVERSITY AND INCLUSION IN STEM AND ALSO HOW
SAD I AM

441
00:22:20,320 --> 00:22:21,320

AND SORRY THAT I CANNOT BE HERE TODAY BECAUSE
I THINK

442
00:22:21,320 --> 00:22:22,320
IT IS GOING TO BE INCREDIBLE.
WE ARE MAKING GREAT STRIDES, BUT WE RECOGNIZE

443
00:22:22,320 --> 00:22:23,320
THAT
THERE IS STILL MUCH TO DO.

444
00:22:23,320 --> 00:22:24,320
TODAY, WE ARE TAKING ANOTHER IMPORTANT STEP
IN OUR

445
00:22:24,320 --> 00:22:25,320
SHARED JOURNEY TOWARD MORE DIVERSE STEM ACADEMIC
AND

446
00:22:25,320 --> 00:22:26,320
WORKPLACE ENVIRONMENTS.

447
00:22:26,320 --> 00:22:27,320
THIS BENEFITS NASA.
OUR MANY GRANT RECIPIENT INSTITUTIONS AND

448
00:22:27,320 --> 00:22:28,320
OUR ENTIRE
NATION.

449
00:22:28,320 --> 00:22:29,320
WE SEEK THIS DIVERSITY AND THE INCLUSIVE PRACTICE
TO

450
00:22:29,320 --> 00:22:30,320
SUPPORT IT BECAUSE THEY ARE CRITICAL TO THE
NATION

451
00:22:30,320 --> 00:22:31,320
SCIENTIFIC AND ECONOMIC FUTURE.

WE MUST ENSURE THAT EQUAL OPPORTUNITIES ARE

452
00:22:31,320 --> 00:22:32,320
BEING
AFFORDED REGARDLESS OF ONE'S RACE, GENDER,

453
00:22:32,320 --> 00:22:33,320
OR OTHER
LEGALLY PROTECTED STATUS.

454
00:22:33,320 --> 00:22:34,320
THE NATIONAL SCIENCE FOUNDATION DATA TELLS
US THAT

455
00:22:34,320 --> 00:22:35,320
WOMEN ACCOUNT FOR ONLY 19 PERCENT OF ALL ENGINEERING
AND PHYSICS DEGREES.

456
00:22:35,320 --> 00:22:36,320
AFRICAN AMERICANS ACCOUNT FOR ONLY FOUR PERCENT
OF ALL

457
00:22:36,320 --> 00:22:37,320
ENGINEERING AND 2.4 PERCENT OF PHYSICS DEGREES.
THESE DISPARITIES ARE OF GREAT CONCERN.

458
00:22:37,320 --> 00:22:38,320
AND WE, AS A NATION, CAN AND MUST DO BETTER.
WE MUST NURTURE AND EMBRACE ALL OF THE TALENT

459
00:22:38,320 --> 00:22:39,320
THAT WE
HAVE AVAILABLE TO US, BOTH TAPPED AND UNTAPPED.

460
00:22:39,320 --> 00:22:40,320
AS A WORLD LEADER IN SCIENCE, AERONAUTICS,
SPACE

461
00:22:40,320 --> 00:22:41,320
EXPLORATION AND TECH KNOWLEDGE HE, NASA CANNOT

AFFORD

462

00:22:41,320 --> 00:22:42,320

TO DO ANYTHING LESS.

THIS AWESOME AND UNPRECEDENTED NATURE OF THE

463

00:22:42,320 --> 00:22:43,320

MISSIONS

WE UNDERTAKE DEMANDS TALENT FROM EVERY CORNER

464

00:22:43,320 --> 00:22:44,320

OF THE

COUNTRY.

465

00:22:44,320 --> 00:22:45,320

FROM EVERY WALK OF LIFE.

TALENT THAT REFLECTS A VAST DIVERSITY OF DISCIPLINE

466

00:22:45,320 --> 00:22:46,320

AND

THOUGHT.

467

00:22:46,320 --> 00:22:47,320

WITHOUT THESE, WE CAN NEVER ACHIEVE THE KIND

OF COMPLEX

468

00:22:47,320 --> 00:22:48,320

SOLUTIONS TO TECHNICAL PROBLEMS THAT WE NEED.

TODAY, NASA IS ON A JOURNEY TO MARS THAT WILL

469

00:22:48,320 --> 00:22:49,320

PLACE

HUMAN BEINGS ON ANOTHER BODY IN OUR SOLAR

470

00:22:49,320 --> 00:22:50,320

SYSTEM FOR

ONLY THE SECOND TIME IN HISTORY.

471

00:22:50,320 --> 00:22:51,320

AFTER MORE THAN 40 YEARS WITHOUT HUMAN SPACE

LIFE

472
00:22:51,320 --> 00:22:52,320
BEYOND OUR BORDERS.
WE ARE EXTENDING THE HUMAN PRESENCE TO THE

473
00:22:52,320 --> 00:22:53,320
FARTHEST
REACHES OF OUR SOLAR SYSTEM WITH ROBOTIC ASIANS

474
00:22:53,320 --> 00:22:54,320
TO
JUPITER, EUROPA AND PLUTO TO NAME A FEW.

475
00:22:54,320 --> 00:22:55,320
RIGHT HERE AT HOME WE ARE INVOLVED IN A HOST
OF EFFORTS

476
00:22:55,320 --> 00:22:56,320
TO BETTER LIFE ON EARTH FROM GATHERING DATA
ABOUT

477
00:22:56,320 --> 00:22:57,320
CLIMATE CHANGE TO DEVELOPING SAFER AIR TRAVEL
TO HELP

478
00:22:57,320 --> 00:22:58,320
FIGHTING FOREST FIRES.
TO DO ALL THESE AMAZING THINGS, OUR NATION

479
00:22:58,320 --> 00:22:59,320
NEEDS A
VIBRANT, INNOVATIVE AND DIVERSE STEM COMMUNITY.

480
00:22:59,320 --> 00:23:00,320
THAT'S WHAT THIS SUMMIT IS ALL ABOUT.
HELPING US TO DO A BETTER JOB OF DIVERSIFYING

481
00:23:00,320 --> 00:23:01,320
STEM,

NURTURING THE TALENT WE HAVE, AND INSPIRING

482

00:23:01,320 --> 00:23:02,320

A NEW
GENERATION.

483

00:23:02,320 --> 00:23:03,320

I CANNOT TELL YOU HOW PLEASED I AM AT THE
TEAM WE HAVE

484

00:23:03,320 --> 00:23:04,320

GATHERED TO DO THIS.
JOINING US OUR LEADERS FROM THE WHITE HOUSE,

485

00:23:04,320 --> 00:23:05,320

AND
MEMBERS OF CONGRESS AND THEIR STAFFS.

486

00:23:05,320 --> 00:23:06,320

AS WELL AS TOP OFFICIALS FROM ACROSS GOVERNMENT,
ACADEMIA, SCIENTIFIC CULTURAL INSTITUTIONS

487

00:23:06,320 --> 00:23:07,320

AND
INDUSTRY.

488

00:23:07,320 --> 00:23:08,320

NOW, I WOULD LIKE TO SHARE WITH YOU AN IMPORTANT
VIDEO

489

00:23:08,320 --> 00:23:09,320

MESSAGE FROM SEVERAL MEMBERS OF CONGRESS DOES
ON

490

00:23:09,320 --> 00:23:10,320

PROMOTING STEM DIVERSITY AND INCLUSION AT
ACADEMIC

491

00:23:10,320 --> 00:23:11,320

INSTITUTIONS AND IN THE WORK PLACE.

AND HOW DOING SO CAN CONTRIBUTE TO THE STRENGTH

492

00:23:11,320 --> 00:23:12,320

AND
PRODUCT VIDEO OF THE AMERICAN WORKFORCE.

493

00:23:12,320 --> 00:23:13,320

NO MISTAKE ABOUT IT, THOUGH, LEADERSHIP FROM
THE VERY

494

00:23:13,320 --> 00:23:14,320

TOP IS WHAT IS NEEDED TO REALIZE OUR OBJECTIVES
AND

495

00:23:14,320 --> 00:23:15,320

THIS WE HAVE TODAY.
THEREFORE, I WOULD LIKE TO THANK THESE MEMBERS,

496

00:23:15,320 --> 00:23:16,320

AS WELL
AS THE MANY OTHER MEMBERS OF CONGRESS, WHO

497

00:23:16,320 --> 00:23:17,320

HAVE
CONSISTENTLY SUPPORTED NASA'S STEM OUTREACH

498

00:23:17,320 --> 00:23:18,320

RECORDS.
AFTER YOU HEAR FROM THE MEMBERS, I INVITE

499

00:23:18,320 --> 00:23:19,320

YOU TO BE
SURE TO STRETCH YOUR PERSPECTIVE IT'S AT THIS

500

00:23:19,320 --> 00:23:20,320

EVENT.
LEARNING COLLABORATE.

501

00:23:20,320 --> 00:23:21,320

ENJOY THE REST OF THESE EXCITING TWO DAYS

ON THIS VERY

502

00:23:21,320 --> 00:23:22,320

CRITICAL TOPIC.

>> AS A CONGRESSWOMAN – I'M CONGRESSMAN

503

00:23:22,320 --> 00:23:23,320

JOHNSON AND I

LIKE TO WELCOME YOU TO THE FIRST NASA ASIAN

504

00:23:23,320 --> 00:23:24,320

STEM

SUMMIT.

505

00:23:24,320 --> 00:23:25,320

FOR MY ENTIRE CAREER I HAVE CHAMPION POLICIES

THAT

506

00:23:25,320 --> 00:23:26,320

ENCOURAGE WOMEN AND MEN IRONY STUDENTS TO

OBTAIN

507

00:23:26,320 --> 00:23:27,320

ADVANCED DEGREES IN STEM, AS A RANKING MEMBER

ON THE

508

00:23:27,320 --> 00:23:28,320

COMMITTEE OF SPACE AND TECHNOLOGY IN THE FIRST

AFRICAN-AMERICAN AND THE FIRST WOMAN TO HOLD

509

00:23:28,320 --> 00:23:29,320

THIS

POSITION, I AM PUSHING FOR STEM EDUCATION

510

00:23:29,320 --> 00:23:30,320

AND

BROADENING PARTICIPATION TO BE ON THE PRIORITY

511

00:23:30,320 --> 00:23:31,320

LIST OF

ALL OF MY COLLEAGUES.

512

00:23:31,320 --> 00:23:32,320

I RECALL HOW A GENERATION WAS INSPIRED TO PURSUE

513

00:23:32,320 --> 00:23:33,320

CAREERS IN MATH AND SCIENCE THE CUSS OF THE SPACE RACE.

514

00:23:33,320 --> 00:23:34,320

STUDENTS ARE STILL INSPIRED BY ASTRONOMY AND SPACE

515

00:23:34,320 --> 00:23:35,320

EXPLORATION.

AND THAT IS WHY IT IS SO IMPORTANT THAT NASA

516

00:23:35,320 --> 00:23:36,320

IS WORKING

TO PURSUE INNOVATIVE WAYS TO INCREASE ACCESS

517

00:23:36,320 --> 00:23:37,320

TO AND

INTEREST IN STEM FIELDS AND WORKING WITH GRANTEE

518

00:23:37,320 --> 00:23:38,320

INSTITUTIONS.

THEIR BENEFICIARIES AND OTHER STAKEHOLDERS

519

00:23:38,320 --> 00:23:39,320

TO REALIZE

THAT THE BENEFITS OF OUR SHARED INTERESTS

520

00:23:39,320 --> 00:23:40,320

IN STEM

EXCELLENT, EQUAL OPPORTUNITY, DIVERSITY AND

521

00:23:40,320 --> 00:23:41,320

INCLUSION,

BECAUSE THIS IS NOT JUST AN ISSUE, IT'S AN

522
00:23:41,320 --> 00:23:42,320
ECONOMIC
ISSUE, IT'S ABOUT THE COMPETITIVENESS OF OUR

523
00:23:42,320 --> 00:23:43,320
ENTIRE
NATION.

524
00:23:43,320 --> 00:23:44,320
STEM INITIATIVES LIKE THIS ARE CRUCIAL TO
THE FUTURE OF

525
00:23:44,320 --> 00:23:45,320
INNOVATION IN THE UNITED STATES AND THE WORLD.
RESEARCH SHOWS THAT WOMEN AND UNDERREPRESENTED

526
00:23:45,320 --> 00:23:46,320
MINORITIES WHO, BY 2050 COMPRISE MORE THAN
SIX PERCENT

527
00:23:46,320 --> 00:23:47,320
OF THE POPULATION, ARE DISPROPORTIONATELY
LOST AT EVERY

528
00:23:47,320 --> 00:23:48,320
TRANSITION POINT IN THEIR STEM STUDIES.
AND AT RESEARCH CAREERS.

529
00:23:48,320 --> 00:23:49,320
I STRONGLY FEEL THAT THE FUTURE SUCCESS OF
OUR NATION

530
00:23:49,320 --> 00:23:50,320
IS DEPENDENT UPON OUR ABILITY TO INNOVATE.
AND OUR ABILITY TO INNOVATE IS DIRECTLY TIED

531
00:23:50,320 --> 00:23:51,320
TO FEDERAL

RESEARCH EFFORTS AND OUR SUCCESS IN STEM EDUCATION.

532
00:23:51,320 --> 00:23:52,320
I THINK AND APPLAUD ALL OF YOU FOR BEING PART
OF

533
00:23:52,320 --> 00:23:53,320
TODAY'S CONVERSATION AND TO ENCOURAGE YOU
TO CONTINUE

534
00:23:53,320 --> 00:23:54,320
THESE CONVERSATIONS SO THAT WE CAN MAKE SURE
THAT THE

535
00:23:54,320 --> 00:23:55,320
UNITED STATES REMAINS THE TECHNOLOGY LEADER
OF THE

536
00:23:55,320 --> 00:23:56,320
WORLD AND THAT EVERY DEMOGRAPHIC GROUP IN
OUR GREAT

537
00:23:56,320 --> 00:23:57,320
NATION HAS THE SAME OPPORTUNITY TO BE A PART
OF THAT

538
00:23:57,320 --> 00:23:58,320
FUTURE.

539
00:23:58,320 --> 00:23:59,320
>>> WELCOME TO WASHINGTON DC AND WELCOMED
TO NASA'S

540
00:23:59,320 --> 00:24:00,320
MISSION STEM.
WE ARE GLAD YOU ARE HERE.

541
00:24:00,320 --> 00:24:01,320
THIS IS AN IMPORTANT SUBJECT TO BE FOCUSED
ON, THAT

542
00:24:01,320 --> 00:24:02,320
QUESTION OF HOW TO REOPEN UP STEM FIELDS TO
EVERYBODY?

543
00:24:02,320 --> 00:24:03,320
NASA NEEDS OUR BEST AND BRIGHTEST AND IF WE
ARE

544
00:24:03,320 --> 00:24:04,320
EXCLUDING CERTAIN PEOPLE BECAUSE OF WHERE
THEY'RE FROM

545
00:24:04,320 --> 00:24:05,320
OR THEIR RACE OR THEIR SEX, WE ARE LOSING
OUT ON

546
00:24:05,320 --> 00:24:06,320
POTENTIAL PEOPLE WHO COULD BE A KEY PART OF
ASIANS IN

547
00:24:06,320 --> 00:24:07,320
THE FUTURE OR DISCOVERY IN THE FUTURE OR FINDING
CURES

548
00:24:07,320 --> 00:24:08,320
IN THE FUTURE.
SO WE HAVE TO CONTINUALLY ASK A QUESTION OF

549
00:24:08,320 --> 00:24:09,320
HOW DO WE
OPEN UP STEM FIELDS TO EVERYBODY, FINDING

550
00:24:09,320 --> 00:24:10,320
THOSE BEST
AND BRIGHTEST GEMS AND YOUNG PEOPLE WHO CAN

551
00:24:10,320 --> 00:24:11,320
RISE UP TO
BE A PART OF NASA INTO THE FUTURE?

552
00:24:11,320 --> 00:24:12,320
I HAD THE PRIVILEGE JUST A FEW WEEKS AGO TO
BE IN ST.

553
00:24:12,320 --> 00:24:13,320
LOUIS AT THE WORLD CHAMPIONSHIP OF THE FIRST
COMPETITION IN ROBOTICS.

554
00:24:13,320 --> 00:24:14,320
I HAD THE GREAT PRIVILEGE OF BEING LED AROUND
BY A

555
00:24:14,320 --> 00:24:15,320
COUPLE OF YOUNG WOMEN WHO ARE PART OF TEAMS
FOR MY

556
00:24:15,320 --> 00:24:16,320
DISTRICT READ ONE, ANNIE HUBBARD, WHO IS FROM
OSWEGO;

557
00:24:16,320 --> 00:24:17,320
ALLIE BALDWIN WHO IS FROM SAINT CHARLESTON.
THEY TOOK ME AROUND TO SHOW ME THEIR PROJECTS

558
00:24:17,320 --> 00:24:18,320
WITH
ROBOTICS BUT I WAS ABLE TO HEAR FROM THEM

559
00:24:18,320 --> 00:24:19,320
THAT JUST A
FEW YEARS AGO THEY HAD NO INTEREST IN ENGINEERING.

560
00:24:19,320 --> 00:24:20,320
BUT BECAUSE THEY WERE INTRODUCED TO ENGINEERING
IN STEM

561
00:24:20,320 --> 00:24:21,320
FIELDS THROUGH ROBOTICS, NOW THEY'RE LOOKING
TO STUDY

562
00:24:21,320 --> 00:24:22,320
THIS IN COLLEGE AND HOPEFULLY, HAVE A CAREER
IN

563
00:24:22,320 --> 00:24:23,320
ENGINEERING OR AEROSPACE, AERONAUTICS, OTHER
THINGS

564
00:24:23,320 --> 00:24:24,320
LIKE THAT.
AND HE IS GOING TO BE GOING WITH A SCHOLARSHIP

565
00:24:24,320 --> 00:24:25,320
TO THE
UNIVERSITY OF ALABAMA TO STUDY AERONAUTICAL

566
00:24:25,320 --> 00:24:26,320
ENGINEERING
AND ALLEY IS LOOKING AT THE UNIVERSITY OF

567
00:24:26,320 --> 00:24:27,320
ENGINEER FOR
ENGINEERING.

568
00:24:27,320 --> 00:24:28,320
SO YOU SEE HOW CAPTURING, SPARKING THAT INTEREST
AT AN

569
00:24:28,320 --> 00:24:29,320
EARLY AGE IS WHAT MAKES THE DIFFERENCE.
FOR THEM, IT WAS FRESHMAN, SOPHOMORE YEARS

570
00:24:29,320 --> 00:24:30,320
OF HIGH
SCHOOL.

571
00:24:30,320 --> 00:24:31,320
SOMETIMES IT'S EARLIER THAN THAT BUT WE HAVE
TO MAKE

572

00:24:31,320 --> 00:24:32,320

SURE WE DO NOT MISS ANYBODY.
WE NEED YOUR HELP.

573

00:24:32,320 --> 00:24:33,320

WE NEED TO REACH OUT TO THESE YOUNG PEOPLE
TO LET THEM

574

00:24:33,320 --> 00:24:34,320

KNOW THAT WE ARE DEPENDING ON THEM.
NASA IS DEPENDING ON THEM.

575

00:24:34,320 --> 00:24:35,320

>> THANK YOU FOR THE INVITATION TO BE WITH
YOU TODAY.

576

00:24:35,320 --> 00:24:36,320

THIS IS SUCH AN IMPORTANT CONVERSATION AND
I COMMEND

577

00:24:36,320 --> 00:24:37,320

YOU FOR WORKING TO MAKE SCIENCE TRULY INCLUSIVE.
BUT INCLUSIVE MEANS MORE THAN HAVING YOUR

578

00:24:37,320 --> 00:24:38,320

WOMEN AND
MORE PEOPLE OF DIVERSITY WORKING IN SCIENCE.

579

00:24:38,320 --> 00:24:39,320

IT ALSO MEANS HAVING AN ENVIRONMENT THAT IS
HOSPITABLE

580

00:24:39,320 --> 00:24:40,320

FOR THOSE WHO ARE BEING INVITED TO JOIN IN
THE

581

00:24:40,320 --> 00:24:41,320

CONVERSATION.
I HAVE BEEN FIGHTING SEXUAL ASSAULT IN THE

582

00:24:41,320 --> 00:24:42,320

MILITARY AND
ON COLLEGE CAMPUSES FOR YEARS.

583

00:24:42,320 --> 00:24:43,320

AND I HAVE SEEN THE SAME PATTERN OVER AND
OVER AGAIN.

584

00:24:43,320 --> 00:24:44,320

TYPICALLY, PREDATORS ARE IN ENVIRONMENTS WHERE
THERE IS

585

00:24:44,320 --> 00:24:45,320

A CLOSED INSTITUTION, WHERE THERE IS A SEPARATE
CODE OF

586

00:24:45,320 --> 00:24:46,320

CONDUCT, SO THEY HAVE LOTS OF POWER TO SWEEP
CASES

587

00:24:46,320 --> 00:24:47,320

UNDER THE PROVERBIAL RUG.
OFTEN, IT IS SIX OR SEVEN TIMES BEFORE A PREDATOR

588

00:24:47,320 --> 00:24:48,320

IS
ACTUALLY CAUGHT.

589

00:24:48,320 --> 00:24:49,320

BECAUSE EVERYONE BELIEVES THE INCIDENT TO
BE IN

590

00:24:49,320 --> 00:24:50,320

OUTLIER.
WELL, SURVIVORS, OFTEN GRADUATE STUDENTS AND

591

00:24:50,320 --> 00:24:51,320

POSTDOCS,
LOSING YEARS OF RESEARCH, THEIR FUNDING, THEIR

592
00:24:51,320 --> 00:24:52,320
CONFIDENCE AND OFTEN THEY ABANDON THE FIELD
ALTOGETHER.

593
00:24:52,320 --> 00:24:53,320
AND THOSE CAREERS.
TAKE THE ACTIONS OF PROFESSOR TIM SLATER WHO

594
00:24:53,320 --> 00:24:54,320
ENGAGED IN
TRULY DISGUSTING HARASSMENT GRADUATE STUDENTS

595
00:24:54,320 --> 00:24:55,320
HE WAS
ADVISING.

596
00:24:55,320 --> 00:24:56,320
BY TELLING THEM THEY WOULD TEACH BETTER WITHOUT
UNDERWEAR.

597
00:24:56,320 --> 00:24:57,320
AND REQUIRING THEM TO MEET HIM FOR OFFICE
HOURS AT A

598
00:24:57,320 --> 00:24:58,320
STRIP CLUB.
THERE WERE NO CONSEQUENCES FOR HIS ACTIONS

599
00:24:58,320 --> 00:24:59,320
ASIDE FROM
SENSITIVITY TRAINING.

600
00:24:59,320 --> 00:25:00,320
AND THE REPORT OF HIS MALFEASANCE WAS SEALED.
HE NOW HOLDS AN ENDOWED CHARITY AT THE UNIVERSITY

601
00:25:00,320 --> 00:25:01,320
OF
WYOMING WHERE UNIVERSITY OF OFFICIALS WERE

602
00:25:01,320 --> 00:25:02,320
UNAWARE OF
THE GRAVITY OF HIS BEHAVIOR BEFORE HIRING

603
00:25:02,320 --> 00:25:03,320
THEM.
NOW HE SAYS HE IS NOW REFORMED.

604
00:25:03,320 --> 00:25:04,320
THE STUDENTS HE HARASSED LOST YEARS OF WORK
AND MANY OF

605
00:25:04,320 --> 00:25:05,320
THEM LEFT THE FIELD.
THE JEFF MARCY AND JASON LEAD CASES WERE SIMILAR.

606
00:25:05,320 --> 00:25:06,320
FEDERAL FUNDING AGENCIES AND UNIVERSITIES
NEED TO STAND

607
00:25:06,320 --> 00:25:07,320
UP FOR SURVIVORS AND STOP FUNDING AND HIRING
HARASSERS.

608
00:25:07,320 --> 00:25:08,320
THAT'S WHY I'M WORKING ON LEGISLATURES ACT.
THIS WILL BILL WILL REQUIRE FACULTIES – SEXUAL

609
00:25:08,320 --> 00:25:09,320
ASSAULT
AND HARASSMENT.

610
00:25:09,320 --> 00:25:10,320
>> SUCCESSFUL – IT'S REALLY JUST ONE EXAMPLE
OF THE

611
00:25:10,320 --> 00:25:11,320
ASTONISHING WINS THAT OUR SCIENTISTS AND ENGINEERS
CAN

612
00:25:11,320 --> 00:25:12,320
ACHIEVE FROM EXPLORING OUR SOLAR SYSTEM TO
EXPLORING

613
00:25:12,320 --> 00:25:13,320
OUR OWN PLANET.
AND EVEN LAUNCHING HUMANS INTO THE UNFORGIVING

614
00:25:13,320 --> 00:25:14,320
ENVIRONMENT OF SPACE.
HOW ARE STEM PROFESSIONAL AND THE ONES – GET

615
00:25:14,320 --> 00:25:15,320
US THERE.
THEY ENABLE US TO MAKE THOSE GREAT LEAPS.

616
00:25:15,320 --> 00:25:16,320
IN SCIENTIFIC INVASION IS THE PRODUCT NOT
ONLY OF HARD

617
00:25:16,320 --> 00:25:17,320
WORK, BUT IT IS BRINGING TOGETHER ALL THE
JEWS OF –

618
00:25:17,320 --> 00:25:18,320
THAT'S WHY IT'S CRITICAL TO PUT STRUCTURES
IN PLACE AT

619
00:25:18,320 --> 00:25:19,320
INCREASING NUMBER OF UNDERREPRESENTED IN AND
ORTIZ AND

620
00:25:19,320 --> 00:25:20,320
WOMEN IN THE STEM FIELD.
NOW THE GOAL OF INCREASING DIVERSITY IN THE

621
00:25:20,320 --> 00:25:21,320
STEM FIELD
ISN'T JUST ONE OF ETHICS AND MORALITY.

622
00:25:21,320 --> 00:25:22,320
IT'S ALSO A RENTED AND PRACTICAL ROLE.
THERE IS NO ONE TYPE OF SCIENTIST ENGINEER

623
00:25:22,320 --> 00:25:23,320
OR
MATHEMATICIAN AND BRINGING THOSE DIVERSE INTO

624
00:25:23,320 --> 00:25:24,320
OUR
AGENCIES AND BUSINESSES STRENGTHENS THE WORK

625
00:25:24,320 --> 00:25:25,320
THAT THOSE
ORGANIZATIONS ARE DOING.

626
00:25:25,320 --> 00:25:26,320
SCIENCE AND TECHNOLOGY HAVE IMMENSE CAPABILITIES
TO DO

627
00:25:26,320 --> 00:25:27,320
AMAZING THINGS AND WE MUST ENSURE THAT WE
ARE USING ALL

628
00:25:27,320 --> 00:25:28,320
THE BRAINPOWER AND INGENUITY THAT IS AVAILABLE
TO US.

629
00:25:28,320 --> 00:25:29,320
I INCREASING THE RIGHTS OF THE TRULY STEM
WORKFORCE IN

630
00:25:29,320 --> 00:25:30,320
F8 ARE SPIRIT OUR TEAMS WILL BENEFIT.

631
00:25:30,320 --> 00:25:31,320
WE'VE SEEN EFFORTS TO INCREASE DIVERSITY SINCE
MY TIME

632
00:25:31,320 --> 00:25:32,320
BACK IN THE 80S.
BUT TODAY, 84 PERCENT OF STEM RELATED JOBS

633
00:25:32,320 --> 00:25:33,320
IN THIS
COUNTRY ARE FILLED BY WIDER ASIAN AMERICAN.

634
00:25:33,320 --> 00:25:34,320
WE NEED TO BRING THE PERSPECTIVE, PROBLEM
SOLVING

635
00:25:34,320 --> 00:25:35,320
SKILLS AND RESOURCEFULNESS OF MINORITIES AND
WOMEN

636
00:25:35,320 --> 00:25:36,320
RIGHT TO THE TABLE SO WE CAN CONTINUE TO SOLVE
THE

637
00:25:36,320 --> 00:25:37,320
PROBLEM THAT OF CAPTAIN AMERICA ON THE FOREFRONT
OF

638
00:25:37,320 --> 00:25:38,320
SCIENTIFIC INNOVATION.
GOOD LUCK IN YOUR WORK.

639
00:25:38,320 --> 00:25:39,320
THANK YOU, VERY MUCH HIGH EVERYONE.
I WISH I COULD BE THERE WITH YOU AT NASA'S

640
00:25:39,320 --> 00:25:40,320
FIRST
MISSION STEM SUMMIT.

641
00:25:40,320 --> 00:25:41,320
DIVERSITY IS ESSENTIAL TO THE FREE FLOW OF
INFORMATION

642
00:25:41,320 --> 00:25:42,320
AND THE EXCHANGE OF GROUNDBREAKING IDEAS.
I APPLAUD THE MISSION STEM PROGRAM FOR WORKING

643
00:25:42,320 --> 00:25:43,320
TO
ENSURE DIVERSITY AND INCLUSION WITHIN NASA.

644
00:25:43,320 --> 00:25:44,320
THE THEME OF THIS CONFERENCE, EATING THE NATIONS
STEM

645
00:25:44,320 --> 00:25:45,320
CHALLENGES, IS AN ISSUE THAT I AM WORKING
TO TACKLE IN

646
00:25:45,320 --> 00:25:46,320
THE SENATE.
HOW CAN WE GET MORE WOMEN AND MINORITIES INTERESTED

647
00:25:46,320 --> 00:25:47,320
IN
STEM FIELDS?

648
00:25:47,320 --> 00:25:48,320
HOW DO WE ENCOURAGE YOUNG PEOPLE TO PURSUE
TRAINING AND

649
00:25:48,320 --> 00:25:49,320
CAREERS IN SCIENCE, TECHNOLOGY AND MATH FIELDS?
THESE ARE QUESTIONS THAT AFFECT ALL OF US

650
00:25:49,320 --> 00:25:50,320
AS WE SHIFT
TO AN INNOVATION-BASED ECONOMY.

651
00:25:50,320 --> 00:25:51,320
I AM CONFIDENT THAT YOU'LL WALK AWAY FROM
THE SUMMIT OR

652
00:25:51,320 --> 00:25:52,320
IN LIGHT WHENEVER AND HOPE YOU ENJOY THE NEXT
TWO DAYS.

653
00:25:52,320 --> 00:25:53,320
THANK YOU.
GOOD MORNING EVERYONE.

654
00:25:53,320 --> 00:25:54,320
HELLO, HOW ARE YOU DOING?
WE ARE HERE TO RUN TWO DAYS OF THE MOST IMPORTANT

655
00:25:54,320 --> 00:25:55,320
CONVERSATION I CAN THINK OF.
IT'S CRITICALLY IMPORTANT.

656
00:25:55,320 --> 00:25:56,320
DIVERSITY, INCLUSION AND EQUAL OPPORTUNITY
IN THE STEM

657
00:25:56,320 --> 00:25:57,320
FIELDS.
IN MANY WAYS, WE ARE GATHERED HERE TO TALK

658
00:25:57,320 --> 00:25:58,320
ABOUT HOW WE
GO FROM HERE TO HERE?

659
00:25:58,320 --> 00:25:59,320
RIGHT NOW WE ARE ONLY PROGRESSING AT THIS
RATE.

660
00:25:59,320 --> 00:26:00,320
HOW DO WE GO FROM HERE TO HERE?
A MAJOR STEP CHANGE AND WHY HAS IT BEEN SO

661
00:26:00,320 --> 00:26:01,320
SLOW?
WE KNOW WITH THE NUMBER – THE NUMBERS ARE

662

00:26:01,320 --> 00:26:02,320

NOT WHAT WE
WANT THEM TO BE.

663

00:26:02,320 --> 00:26:03,320

WE ARE ALL WORKING ON THIS.
WE ARE COMMITTED.

664

00:26:03,320 --> 00:26:04,320

THE STATISTICS AND WELCOMING REMARKS, BUT
I WANT TO

665

00:26:04,320 --> 00:26:05,320

REMIND US THAT IN 2013, IN THE UNITED STATES
WOMEN

666

00:26:05,320 --> 00:26:06,320

ACCOUNTED FOR 25 PERCENT OF EARNED DOCTORATE
DEGREES IN

667

00:26:06,320 --> 00:26:07,320

ENGINEERING.
16 PERCENT OF THOSE WERE IN AEROSPACE ENGINEERING.

668

00:26:07,320 --> 00:26:08,320

I'M IN AEROSPACE ENGINEER.
ISN'T THIS WHAT ALL ROCKET SCIENTIST LOOK

669

00:26:08,320 --> 00:26:09,320

LIKE?
SO WHY ARE OUR NUMBERS POOR?

670

00:26:09,320 --> 00:26:10,320

AFRICAN-AMERICAN LESSON FIVE PERCENT AND HISPANICS
ARE

671

00:26:10,320 --> 00:26:11,320

ALSO LESS THAN FIVE PERCENT.
HERE AT NASA, WE ARE 23 PERCENT ENGINEERING

672
00:26:11,320 --> 00:26:12,320
WOMEN AND
20 PERCENT WOMEN IN THE PHYSICAL SCIENCES.

673
00:26:12,320 --> 00:26:13,320
THAT'S NOT GOOD ENOUGH.
CALL IT WHAT IT IS.

674
00:26:13,320 --> 00:26:14,320
WE ARE LOOKING FOR PARITY.
HOW CAN WE REALLY MAKE THESE STEP CHANGES?

675
00:26:14,320 --> 00:26:15,320
THE GOOD NEWS IS DOCTORAL ENGINEERING HAS
DOUBLED IN

676
00:26:15,320 --> 00:26:16,320
THE US.
WE CAN SAY THAT THAT IS PROGRESS.

677
00:26:16,320 --> 00:26:17,320
BUT FOR UNDERREPRESENTED POPULATIONS, EVEN
EXPONENTIAL

678
00:26:17,320 --> 00:26:18,320
ONES, TO REACH PARITY, THE 30 PERCENT FOR
UNDERREPRESENTED POPULATIONS, IT WILL TAKE

679
00:26:18,320 --> 00:26:19,320
UNTIL 2130.
I WON'T BE ALIVE.

680
00:26:19,320 --> 00:26:20,320
WE ARE GOING TO MARS.
BOOTS ON MARS AS YOU HEARD THE BEEN A STRAIGHTER

681
00:26:20,320 --> 00:26:21,320
SAY WE
NEED TO TAKE EVERYONE WITH US.

682

00:26:21,320 --> 00:26:22,320

SO I DID A SECOND FIT JUST TO SEE IF I COULD
INCREASE

683

00:26:22,320 --> 00:26:23,320

MY DATA LITTLE BIT.
2150.

684

00:26:23,320 --> 00:26:24,320

WE WILL BE ON MARS BEFORE WE REACH PARITY
IF WE DO NOT

685

00:26:24,320 --> 00:26:25,320

DO SOMETHING AND THAT IS WHY WE ARE HERE TOGETHER.

686

00:26:25,320 --> 00:26:26,320

WE'RE HERE TOGETHER BECAUSE THERE ARE GREAT
PROMISING

687

00:26:26,320 --> 00:26:27,320

PRACTICES OUT THERE.
SOME FOLKS ARE DOING EXCEPTIONAL JOBS, BUT

688

00:26:27,320 --> 00:26:28,320

WE NEED TO
SHARE THOSE.

689

00:26:28,320 --> 00:26:29,320

WE NEED TO ALL BE IN THIS TOGETHER AND FRANKLY,
WE JUST

690

00:26:29,320 --> 00:26:30,320

NEED TO LOOK FOR THAT STEP CHANGE TO MAKE
CHANGE AND

691

00:26:30,320 --> 00:26:31,320

MAKE OUR GOALS TO SAY WE CAN DO THIS.
WE CAN DO THIS WITHIN THE DECADE, BUT WE ARE

692

00:26:31,320 --> 00:26:32,320

GOING TO
DO IT TOGETHER.

693

00:26:32,320 --> 00:26:33,320

WHY IS IT SO CRITICAL TO NASA?
OUR DOORS ARE OPEN.

694

00:26:33,320 --> 00:26:34,320

THIS IS THE PIPELINE.
THAT'S WHY I CARE SO DEEPLY ABOUT THAT.

695

00:26:34,320 --> 00:26:35,320

CHANGING THAT.
OPENING OUR DOORS UP AND BRINGING EVERYONE

696

00:26:35,320 --> 00:26:36,320

IN.
WE ALSO KNOW IT GOES BEYOND THE NUMBERS.

697

00:26:36,320 --> 00:26:37,320

IT'S THE UNCONSCIOUS BIAS.
IT HAS SERIOUS NEGATIVE IMPACTS ON WHO PURSUES

698

00:26:37,320 --> 00:26:38,320

DEGREES
IN STEM.

699

00:26:38,320 --> 00:26:39,320

WE SEE THAT IT'S A POSSIBILITY DEGREE IN STEM.
WE JUST HEARD AND WE KNOW ABOUT THE TROUBLING

700

00:26:39,320 --> 00:26:40,320

SEXUAL-HARASSMENT REPORTS.
I WANT TO BE VERY CLEAR.

701

00:26:40,320 --> 00:26:41,320

SEXUAL-HARASSMENT IS A DENIAL OF EQUAL OPPORTUNITY
IN

702

00:26:41,320 --> 00:26:42,320
OUR WORKFORCES, IN OUR UNIVERSITIES.
FACULTY MEMBERS ENGAGING IN SEXUAL HARASSMENT,

703
00:26:42,320 --> 00:26:43,320
THEY ARE
DENYING EQUAL OPPORTUNITIES IN EDUCATION.

704
00:26:43,320 --> 00:26:44,320
IT'S NOT JUST SEXUAL-HARASSMENT, THERE IS
ALSO

705
00:26:44,320 --> 00:26:45,320
HARASSMENT ON RACE, NATIONAL ORIGIN, DISABILITY,
AND

706
00:26:45,320 --> 00:26:46,320
OTHER CHARACTERISTICS THAT ARE PART BY OUR
LAWS.

707
00:26:46,320 --> 00:26:47,320
SO THAT IS WHY WE ARE HERE TO TALK ABOUT THIS,
TO HAVE

708
00:26:47,320 --> 00:26:48,320
CANDID, OPEN AND FRANK CONVERSATION.
WE ARE LOOKING FOR SOLUTIONS.

709
00:26:48,320 --> 00:26:49,320
WE ARE LOOKING AT THE INNOVATIONS OUT THERE
AND WHAT

710
00:26:49,320 --> 00:26:50,320
ARE THE PROMISING PRACTICES THAT GO HAND-IN-HAND
TO

711
00:26:50,320 --> 00:26:51,320
REALLY ACHIEVE, TO FINALLY ACHIEVE WHERE WE
SEE PARITY

712

00:26:51,320 --> 00:26:52,320
IS, WHERE WE SEE ALL OF OURSELVES GOING READ
I'VE

713
00:26:52,320 --> 00:26:53,320
CHANGE THE CONVERSATION A LITTLE BIT AND I
ACTUALLY

714
00:26:53,320 --> 00:26:54,320
CALL IT STEM.
I THINK WE CAN HAVE AN IMPACT IN THE STEM

715
00:26:54,320 --> 00:26:55,320
FIELD, BUT WE
NEED TO BE MORE INCLUSIVE AND SO I ACTUALLY

716
00:26:55,320 --> 00:26:56,320
INCLUDE THE
ARTS BECAUSE EVERY GIRL AND BOY THAT I TALKED

717
00:26:56,320 --> 00:26:57,320
TO, I SAY
YOU ARE THE VISIONARIES.

718
00:26:57,320 --> 00:26:58,320
YOU ARE THE STORYTELLERS.
AND NOW I PUT A D ON THE END.

719
00:26:58,320 --> 00:26:59,320
THAT IS FOR DESIGN.
WE HAVE A 3-D MAKER GENERATION OUT THERE AND

720
00:26:59,320 --> 00:27:00,320
IF THEY
SEE THEMSELVES AS 3-D MAKERS, I SAY GUESS

721
00:27:00,320 --> 00:27:01,320
WHAT?
YOU'RE GOING TO MAKE IT WITH US.

722

00:27:01,320 --> 00:27:02,320

WE NEED YOU ALL.
SO BEING INCLUSIVE.

723

00:27:02,320 --> 00:27:03,320

I WANT TO FILTER EVERYONE IN.
NO MORE FILTERING PEOPLE OUT.

724

00:27:03,320 --> 00:27:04,320

YOU DON'T HAVE TO BE THE BEST IN PHYSICS AND
CALCULUS

725

00:27:04,320 --> 00:27:05,320

AND MATH TO JOIN THE STEM FIELD.
THAT MAKES IT SOMETHING THAT PEOPLE CANNOT

726

00:27:05,320 --> 00:27:06,320

SEE
THEMSELVES IN.

727

00:27:06,320 --> 00:27:07,320

NO MORE FILTERING PEOPLE OUT LET'S FILTER
EVERYONE IN

728

00:27:07,320 --> 00:27:08,320

WITH INCLUSIVE CONVERSATION, BUT MORE IMPORTANTLY,
INCLUSIVE ACTION.

729

00:27:08,320 --> 00:27:09,320

MAKING SURE THAT EVERY GIRL AND BOY OUT THERE
SO THEY

730

00:27:09,320 --> 00:27:10,320

CAN SEE THEMSELVES AND THEN I THINK HE WILL
REALLY

731

00:27:10,320 --> 00:27:11,320

ATTAIN THE RESULTS WE WANT TO HAVE IN THE
STEM FIELD.

732

00:27:11,320 --> 00:27:12,320

I THINK THAT IS HOW WE GET THERE FROM WHERE WE ARE AT.

733

00:27:12,320 --> 00:27:13,320

SO I'M SPEAKING TO EVERYBODY IN THE AUDIENCE TODAY, THE

734

00:27:13,320 --> 00:27:14,320

UNIVERSITY PRESIDENT, TOP ADMINISTRATORS, THE FACULTY

735

00:27:14,320 --> 00:27:15,320

MEMBERS, OUR FEDERAL OFFICIALS AS WELL AS INDUSTRY

736

00:27:15,320 --> 00:27:16,320

PROFESSIONALS THAT WE HAVE GATHERED TODAY FOR THE

737

00:27:16,320 --> 00:27:17,320

PRESENCE AND HIGH-LEVEL ADMINISTRATORS I EMPLOY YOU TO

738

00:27:17,320 --> 00:27:18,320

SHOW THE LEADERSHIP AND DEMONSTRATE THAT EQUAL OPPORTUNITY IS FOR ALL OF US.

739

00:27:18,320 --> 00:27:19,320

IT WILL BE YOUR LEADERSHIP THAT REALLY IS AND ARE THE

740

00:27:19,320 --> 00:27:20,320

PROMISING PRACTICES THAT WE ALL NEED TO LEARN FROM TO

741

00:27:20,320 --> 00:27:21,320

REALLY CHANGE THE TIDE. FOR THE FACULTY IN PRINCIPLE INVESTIGATORS

742

00:27:21,320 --> 00:27:22,320

WHO ARE
RECEIVING OUR GOVERNMENT AWARDS, YOU ARE THE

743

00:27:22,320 --> 00:27:23,320

ONES ON

744

00:27:23,320 --> 00:27:24,320

THE FRONT LINE.
IT'S YOUR BEHAVIOR CREATING THE TEAM, THE

745

00:27:24,320 --> 00:27:25,320

INCLUSIVE
TEAM, LEADING THOSE TEENS, NURTURING THEM

746

00:27:25,320 --> 00:27:26,320

THOSE OF THE
NEXT GENERATIONS, THE FUTURE SCIENTISTS AND

747

00:27:26,320 --> 00:27:27,320

ENGINEERS,
LEADERS IN THEIR OWN RIGHTS, BUT THEY NEED

748

00:27:27,320 --> 00:27:28,320

YOUR
MENTORING.

749

00:27:28,320 --> 00:27:29,320

YOU HAVE AN AWESOME RESPONSIBILITY BECAUSE
YOU ARE AT

750

00:27:29,320 --> 00:27:30,320

THE FRONT LINE IN THE MENTORING AND RESPONSIBILITY
YOU

751

00:27:30,320 --> 00:27:31,320

HAVE THAT WE PLACE ON YOU BUT THAT WE ENTRUSTED
YOU AS

752

00:27:31,320 --> 00:27:32,320

WELL.
THE FEDERAL OFFICIALS, TO ALL OF US TO MAKE

753
00:27:32,320 --> 00:27:33,320
SURE THAT
THE GRANTING INSTITUTIONS ARE OPERATING WITHIN

754
00:27:33,320 --> 00:27:34,320
THE LAW
BUT MORE IMPORTANTLY, THAT THEY ARE PROVIDING

755
00:27:34,320 --> 00:27:35,320
ALL THESE
OPPORTUNITIES AND REALIZING THE STREAM THAT

756
00:27:35,320 --> 00:27:36,320
WE HAVE.
AND WE ARE HERE IN THE GOVERNMENT AND SISTER

757
00:27:36,320 --> 00:27:37,320
AGENCIES
TO PROVIDE WHAT ASSISTANCE YOU NEED.

758
00:27:37,320 --> 00:27:38,320
HOW CAN WE CONTINUE THE CONVERSATION?
WE'RE IN THIS TOGETHER.

759
00:27:38,320 --> 00:27:39,320
WE WILL BE LOOKING AT COMPLIANCE, BUT WEARINESS
ALTOGETHER AND KNOWING WHAT WORKS AND SHARING

760
00:27:39,320 --> 00:27:40,320
THOSE
STORIES IS WHAT WE'RE ALL ABOUT SO THAT WE

761
00:27:40,320 --> 00:27:41,320
CAN ALL BE
BETTER.

762
00:27:41,320 --> 00:27:42,320

FOR THE INDUSTRY PROFESSIONALS, WE ASK YOU
TO CONTINUE

763
00:27:42,320 --> 00:27:43,320
TO PARTNER WITH THE GOVERNMENT IN ACADEMIA.
WE ARE ALL DOING THIS BUT SOMETIMES OUR EFFORTS

764
00:27:43,320 --> 00:27:44,320
ARE
INDIVIDUAL.

765
00:27:44,320 --> 00:27:45,320
FROM THE THREE, FROM INDUSTRY ACADEMIA AND
GOVERNMENT.

766
00:27:45,320 --> 00:27:46,320
I THINK THE ONLY WAY TO GET THERE IS TO THINK
OF NEW

767
00:27:46,320 --> 00:27:47,320
INNOVATIONS.
HOW DO WE DO IT ALL TOGETHER?

768
00:27:47,320 --> 00:27:48,320
SAME RESOURCES, BUT HOW CAN WE DO IT TOGETHER
TO BRING

769
00:27:48,320 --> 00:27:49,320
UP OUT THE STEP CHANGE THAT WE WANT FOR EQUAL
OPPORTUNITY, INCLUSION AND TO BRING ABOUT

770
00:27:49,320 --> 00:27:50,320
PARITY.
SO FOR ALL OF US, IN ONE WAY OR ANOTHER, TO

771
00:27:50,320 --> 00:27:51,320
ME IT BOILS
DOWN TO EXCELLENCE.

772
00:27:51,320 --> 00:27:52,320

WE ARE ONLY EXCELLENT THROUGH DIVERSITY.
HAVE SOME PRETTY AWESOME BODACIOUS GOALS THAT

773

00:27:52,320 --> 00:27:53,320

NASA.
EXPLORING THE SOLAR SYSTEM.

774

00:27:53,320 --> 00:27:54,320

WE NEED ALL OF YOUR EXCELLENCE.
WE NEED ALL THE EXCELLENCE THAT IS COMING

775

00:27:54,320 --> 00:27:55,320

IN THE FUTURE
GENERATIONS AND WE DO NOT HAVE THE LUXURY

776

00:27:55,320 --> 00:27:56,320

TO ELIMINATE
EVEN ONE OF THE GREAT BRAINS, THE GREAT WINES,

777

00:27:56,320 --> 00:27:57,320

THE
GREAT SUPERSTARS.

778

00:27:57,320 --> 00:27:58,320

PLEASE HELP US, WORK WITH US.
ENSURE THAT EVERY GIRL AND BOY SEE THEMSELVES

779

00:27:58,320 --> 00:27:59,320

IN THE
STEM FIELD, INCLUDING THEM IN WHATEVER THEY

780

00:27:59,320 --> 00:28:00,320

WANT TO BE.
I CAN RELATE TO THAT.

781

00:28:00,320 --> 00:28:01,320

AN ARTIST, DESIGNER, JOURNALIST, STORYTELLER,
AN

782

00:28:01,320 --> 00:28:02,320

ENGINEER OR A POET, I CAN SAY GUESS WHAT?
GUESS WHAT.

783
00:28:02,320 --> 00:28:03,320
[BLEEP] DOING?
GUESS WHAT ALL THIS GOOD WORK LEADS TO?

784
00:28:03,320 --> 00:28:04,320
IT LEADS TO DREAMS AND EXPLORING TOMORROW'S
AND BEYOND

785
00:28:04,320 --> 00:28:05,320
AND THEN ALSO, MOST IMPORTANTLY, THINKING
ABOUT OUR

786
00:28:05,320 --> 00:28:06,320
EARTH -RELATED ISSUES AND PROBLEMS.
AND NOT IS WHY WE ARE HERE TO CELEBRATE WITH

787
00:28:06,320 --> 00:28:07,320
OUR SISTER
AGENCIES HOW THE DISCUSSION WITH ALL OF YOU

788
00:28:07,320 --> 00:28:08,320
TO REALLY
ACCOMPLISH, THIS TIME REALLY ACCOMPLISH, THIS

789
00:28:08,320 --> 00:28:09,320
STEP
CHANGE THAT WE DESIRE.

790
00:28:09,320 --> 00:28:10,320
THANK YOU SO MUCH FOR JOINING US.
I HAVE THE GREAT PLEASURE TO DO AN INTRODUCTION

791
00:28:10,320 --> 00:28:11,320
NOW TO
OUR KEYNOTE SPEAKER AND ALSO TO THINK AND

792
00:28:11,320 --> 00:28:12,320

ACKNOWLEDGE
OUR PARTNERS AND DOCTOR FRANCE CORDOVA AND

793
00:28:12,320 --> 00:28:13,320
RACHEL
GARTNER IS HERE FROM THE DEPARTMENT OF EDUCATION

794
00:28:13,320 --> 00:28:14,320
WHO
CARRIES THE RESPONSIBILITY FOR THE GOVERNMENT

795
00:28:14,320 --> 00:28:15,320
AGENCY
WHEN IT COMES TO COMPLIANCE AND TITLE IX AND

796
00:28:15,320 --> 00:28:16,320
TITLE VI
THAT WE WORK CLOSELY WITH OUR WHITE HOUSE

797
00:28:16,320 --> 00:28:17,320
OFFICE OF
SCIENCE AND TECH KNOWLEDGE HE POLICY, WANT

798
00:28:17,320 --> 00:28:18,320
AWARD IS
WITH US.

799
00:28:18,320 --> 00:28:19,320
ALSO FROM OUR NATIONAL SCIENCE AND TECHNICAL
COUNSEL,

800
00:28:19,320 --> 00:28:20,320
ROOS IS HERE AND NOW I GET YOU INTRODUCED
DOCTOR JO

801
00:28:20,320 --> 00:28:21,320
HANDELSMAN AS OUR KEYNOTE.
CAN'T THINK OF ANYONE MORE QUALIFIED TO GIVE

802
00:28:21,320 --> 00:28:22,320

US REMARKS
RIGHT NOW.

803
00:28:22,320 --> 00:28:23,320
JOE IS THE ASSOCIATE DIRECTOR FOR SCIENCE
AT THE WHITE

804
00:28:23,320 --> 00:28:24,320
HOUSE OFFICE OF SCIENCE AND ELEGY POLICY.

805
00:28:24,320 --> 00:28:25,320
SHE WAS APPOINTED BY PRESIDENT OBAMA AND CONFIRMED
BY

806
00:28:25,320 --> 00:28:26,320
THE SENATE IN JUNE OF 2014.
I WATCHED HER CONFIRMATION TO THINK ABOUT

807
00:28:26,320 --> 00:28:27,320
HOW THIS GOES
AND HOW MY OWN MIGHT GO FROM ACADEMIA AS WELL.

808
00:28:27,320 --> 00:28:28,320
SO THANKS, FOR SHOWING ME THAT.
AND SHE HELPS ADVISE THE PRESIDENT ON IMPLICATIONS

809
00:28:28,320 --> 00:28:29,320
OF
SCIENCE FOR THE NATION AND HOW IT FORMS – IN

810
00:28:29,320 --> 00:28:30,320
FORMS US
POLICY AND HOW THE FEDERAL EFFORTS TO SUPPORT

811
00:28:30,320 --> 00:28:31,320
ONLY
SCIENTIFIC RESEARCH GOING OUT.

812
00:28:31,320 --> 00:28:32,320
HOW ARE WE PROGRESSING?

HOW ARE WE DOING?

813
00:28:32,320 --> 00:28:33,320
PRIOR TO JOINING OSC P DOCTOR JO HANDELSMAN
WAS A

814
00:28:33,320 --> 00:28:34,320
PROFESSOR.
I THINK YOU KNOW HOW DISTINGUISH THAT ONEROUS.

815
00:28:34,320 --> 00:28:35,320
SHE WAS ALSO THE PROFESSOR IN THE DEPARTMENT
OF

816
00:28:35,320 --> 00:28:36,320
MOLECULAR, CELLULAR AND – AT THE L UNIVERSITY.
SHE SERVED ON THE FACULTY AS THE LESSER OF

817
00:28:36,320 --> 00:28:37,320
PLANT
PATHOLOGY IN THE PROFESSOR AND CHAIR OF THE

818
00:28:37,320 --> 00:28:38,320
DEPARTMENT
OF ACTIVITY ALLERGY.

819
00:28:38,320 --> 00:28:39,320
SHE WAS ALSO PRESENT OF THE AMERICAN SOCIETY
OF

820
00:28:39,320 --> 00:28:40,320
MICROBIOLOGY.
SHE RECEIVED THE PRESIDENTIAL WORD FOR EXCELLENCE,

821
00:28:40,320 --> 00:28:41,320
SCIENCE AND MENTORING IN 2011, AND SHE COCHAIRLED
THE

822
00:28:41,320 --> 00:28:42,320
WORKING GROUP THAT DEVELOPED THE 2012 REPORT,

ENGAGED

823

00:28:42,320 --> 00:28:43,320

TO EXCEL.

EACH CONTAIN THE RECOMMENDATIONS TO THE PRESIDENT

824

00:28:43,320 --> 00:28:44,320

OF

HOW DO WE STRENGTHEN STEM EDUCATION TO MEET

825

00:28:44,320 --> 00:28:45,320

THE

WORKFORCE NEEDS IN THE COMING DECADE?

826

00:28:45,320 --> 00:28:46,320

JUST ONE DECADE, HOW CAN WE DO THIS?

DOCTOR HANDELSMAN COFOUNDED THE WISCONSIN

827

00:28:46,320 --> 00:28:47,320

PROGRAM FOR

SCIENTIFIC TEACHING AS WELL AS THE L CENTER

828

00:28:47,320 --> 00:28:48,320

FOR

SCIENTIFIC TEACHING AND THE NATIONAL ACADEMY

829

00:28:48,320 --> 00:28:49,320

SUMMER

INSTITUTE ON UNDERGRADUATE EDUCATION.

830

00:28:49,320 --> 00:28:50,320

THESE PROGRAMS HAVE LEARNED HER A VERY DISTINGUISHED

NATIONAL AND INTERNATIONAL RECOGNITION AND

831

00:28:50,320 --> 00:28:51,320

SHE'S DOWN

THERE AT THE FRONT LINES FOR TEACHING VISIBLE

832

00:28:51,320 --> 00:28:52,320

SOME

PRACTICES AND NOW ALL THE WAY UP INTO ADVISING

833

00:28:52,320 --> 00:28:53,320

US IN
THE PRESIDENT AND WITH JOE'S LEADERSHIP I

834

00:28:53,320 --> 00:28:54,320

THINK WE'LL

835

00:28:54,320 --> 00:28:55,320

GET THIS DONE.
I'M LOOKING FORWARD TO HER KEYNOTE.

836

00:28:55,320 --> 00:28:56,320

THANK YOU, JO.
[APPLAUSE]

837

00:28:56,320 --> 00:28:57,320

>> THANK YOU FOR ALL BEING HERE AND TO ALL
OF THE GREAT

838

00:28:57,320 --> 00:28:58,320

REPORTED STATEMENTS THAT WE HEARD FROM GENERAL
BOLDEN

839

00:28:58,320 --> 00:28:59,320

AND MANY MEMBERS OF CONGRESS.
I WAS REMINDED THIS MORNING OF NASA'S GREATNESS

840

00:28:59,320 --> 00:29:00,320

IN
PROBLEM-SOLVING ABILITY WHEN I GOT AN EMAIL

841

00:29:00,320 --> 00:29:01,320

SAYING THAT
MY SLIDES MIGHT NOT BE ABLE TO BE SHOWN AND

842

00:29:01,320 --> 00:29:02,320

I THOUGHT
WELL, WE'VE HEARD THIS PROBLEM BEFORE, RIGHT?

843

00:29:02,320 --> 00:29:03,320

SMALL THINGS THAT CAN BLOCK EVENTS?
AND I MENTIONED IT TO MY HUSBAND.

844

00:29:03,320 --> 00:29:04,320

I SAID AFTER ALL THAT WORK, MY SLIDES MIGHT
NOT BE USED

845

00:29:04,320 --> 00:29:05,320

AND HE SAID, WHAT?
AND HE STARTED DOING THIS IMITATION OF RUTH

846

00:29:05,320 --> 00:29:06,320

WILLIS IN
ARMAGEDDON IF YOU'VE EVER SEEN THAT HE SAID

847

00:29:06,320 --> 00:29:07,320

THIS IS THE
GOVERNMENT.

848

00:29:07,320 --> 00:29:08,320

THIS IS NASA.
THIS IS THE GROUP THAT SENT PEOPLE TO THE

849

00:29:08,320 --> 00:29:09,320

MOON!
IF THEY CAN'T DO IT, NOBODY CAN.

850

00:29:09,320 --> 00:29:10,320

AND SO I WOULD LIKE TO JUST PUT THAT CHALLENGE
TO NASA

851

00:29:10,320 --> 00:29:11,320

IN TERMS OF DIVERSITY AS WELL.
I THINK THEY SOLVED MY SLIDE PROBLEM.

852

00:29:11,320 --> 00:29:12,320

WE WILL FIND OUT AND I THINK NASA CAN ALSO
SOLVE THE

853
00:29:12,320 --> 00:29:13,320
INNOVATION PROBLEM OF GETTING MORE AND MORE
DIVERSE

854
00:29:13,320 --> 00:29:16,170
PEOPLE INTO THE STEM FIELD.
WITH THE ENERGY AND KNOWLEDGE AND EXPERTISE

855
00:29:16,170 --> 00:29:19,130
THAT IS
HERE TODAY, THE MAKE ENORMOUS STRIDES IN THE

856
00:29:19,130 --> 00:29:22,520
NEXT TWO
DAYS TO SOLVE THIS PROBLEM.

857
00:29:22,520 --> 00:29:26,591
AND SO, IN THE SPIRIT OF BRUCE WILLIS, I WOULD
LIKE US

858
00:29:26,591 --> 00:29:30,510
TO THINK AS PROBABLY AND AS BIG AND AS AGGRESSIVELY
AND

859
00:29:30,510 --> 00:29:35,260
CREATIVELY AS WE CAN ABOUT WHAT IT WILL TAKE
TO BROADEN

860
00:29:35,260 --> 00:29:39,390
– SEE THEY SOLD IT.
THERE WE ARE.

861
00:29:39,390 --> 00:29:46,150
[APPLAUSE] THIS IS NASA.
SO, I BRING YOU GREETINGS FROM THE WHITE HOUSE,

862
00:29:46,150 --> 00:29:49,590
FROM
THE PRESIDENT, WHY SHOULD MENTION I READ RECENTLY

863

00:29:49,590 --> 00:29:50,590

THAT

864

00:29:50,590 --> 00:29:53,680

HIS FAVORITE MOVIE OF 2015 WAS THE MARTIAN,
WHICH I

865

00:29:53,680 --> 00:29:58,330

THINK IS SICK AGAIN FOR TODAY'S DISCUSSION
AND YOU WILL

866

00:29:58,330 --> 00:30:00,830

SEE WHY AS I TALK.

867

00:30:00,830 --> 00:30:04,400

I ALSO WOULD LIKE TO SHARE WITH YOU ONE OF
OUR MOST

868

00:30:04,400 --> 00:30:08,340

RECENT ADDITION TO THE STEM PORTFOLIO OF THE
WHITE

869

00:30:08,340 --> 00:30:13,730

HOUSE AND THAT IS THE STEM FOR ALL INITIATIVE.
AND SO I WOULD LIKE TO START TALKING ABOUT

870

00:30:13,730 --> 00:30:17,010

SOME OF THE
GOALS OF STEM OR ALL, WHERE THIS INITIATIVE

871

00:30:17,010 --> 00:30:21,120

CAME FROM.
SOME OF ITS ROOTS IN GOVERNMENT AND IN VARIOUS

872

00:30:21,120 --> 00:30:24,780

REPORTS
FROM ACADEMIA AS WELL AS GOVERNMENT AGENCIES

873

00:30:24,780 --> 00:30:27,810
AND THEN
TALKED ABOUT THE THREE ELEMENTS OF STEM FOR

874
00:30:27,810 --> 00:30:31,810
ALL, WHICH
ARE ACTIVE LEARNING, PROVIDING COURSE ACCESS

875
00:30:31,810 --> 00:30:34,920
TO HIGH
SCHOOL AND MIDDLE SCHOOL STUDENTS, AND THEN

876
00:30:34,920 --> 00:30:40,240
THE ISSUES
OF ISN THE IMAGE OF STEM FOR CLOSING.

877
00:30:40,240 --> 00:30:44,980
SO THE PRINCIPLES OF MAKING CHANGE IN THIS
WHITE HOUSE

878
00:30:44,980 --> 00:30:48,320
ARE THAT WE WORK FROM AN EVIDENCE-BASED STANDPOINT
AND

879
00:30:48,320 --> 00:30:54,910
THAT WE WORK COLLABORATIVE.
AND SO THE PRESIDENTS STEM AND PROBABLY EDUCATION

880
00:30:54,910 --> 00:30:59,010
EFFORTS HAVE INVOLVED EVERY LEVEL OF EDUCATION,
HAVE

881
00:30:59,010 --> 00:31:04,570
INVOLVED EVERY GROUP THAT CONTRIBUTES TO EDUCATION,
FROM THE PRIVATE-SECTOR FOUNDATION, NGOS,

882
00:31:04,570 --> 00:31:09,440
TO THE
GOVERNMENT AND UNIVERSITIES, AND IT HAS ALWAYS

883

00:31:09,440 --> 00:31:11,460
INVOLVED
EVIDENCE-BASED PRACTICE.

884
00:31:11,460 --> 00:31:14,830
IN LOOKING AT WHERE THE BEST EVIDENCE IS OF
THE – FOR

885
00:31:14,830 --> 00:31:19,600
THE CHANGES THAT WE DESIRE TO MAKE.
AND SO, ONE OF THE GROUPS THAT HAS BEEN A

886
00:31:19,600 --> 00:31:23,830
GREAT
CONTRIBUTOR HAS BEEN THE FC STEM AND CO-STEM

887
00:31:23,830 --> 00:31:27,540
COMMITTEES
THAT ARE FORMED BY THE NATIONAL SCIENCE AND

888
00:31:27,540 --> 00:31:32,660
ELEGY
COUNSEL WHICH IS RUN BY OSC P MY OFFICE AND

889
00:31:32,660 --> 00:31:35,300
IN THAT
GROUP THERE HAVE BEEN GREAT DISCUSSIONS AND

890
00:31:35,300 --> 00:31:38,500
STRATEGIC
PLANNING THAT HAS SUGGESTED THE WAY FORWARD

891
00:31:38,500 --> 00:31:42,090
FOR
BROADENING PARTICIPATION AND INCREASING THE

892
00:31:42,090 --> 00:31:46,240
QUALITY OF
STEM EDUCATION ACROSS ALL LEVELS OF EDUCATION

893

00:31:46,240 --> 00:31:47,970

IN THIS
COUNTRY.

894

00:31:47,970 --> 00:31:52,270

AND SO, IF YOU LOOK AT THE STRATEGIC PLAN,
FROM THE SC

895

00:31:52,270 --> 00:31:56,170

STEM GROUP THEIR FIVE-YEAR PLAN EMPHASIZED
A FEW

896

00:31:56,170 --> 00:32:00,780

ELEMENTS THAT I THINK ARE CRITICAL.
WE SHOULD FOLLOW THE EVIDENCE IN CONSISTENT

897

00:32:00,780 --> 00:32:03,720

WITH
PRESIDENT OBAMA'S PHILOSOPHY, WE SHOULD LOOK

898

00:32:03,720 --> 00:32:06,330

AT WHAT
THE EXPERIMENTS ARE, WHAT THIS DATA DATA AND

899

00:32:06,330 --> 00:32:07,420

STUDY
SHOW.

900

00:32:07,420 --> 00:32:11,160

THEY WILL HELP US TOWARD THE BEST PRACTICES
THAT WILL

901

00:32:11,160 --> 00:32:17,840

MAKE CHANGE MOST EFFECTIVELY THAT WE CAN.
SECONDLY, THEY FOCUSED ON THE IMPORTANCE OF

902

00:32:17,840 --> 00:32:19,060

COMMUNITY
COLLEGES.

903

00:32:19,060 --> 00:32:21,970

THIS IS A GROUP THAT IS OFTEN LEFT OUT OF
THE

904

00:32:21,970 --> 00:32:25,510

CONVERSATION WITH HIGHER EDUCATION AND YET,
THIS IS THE

905

00:32:25,510 --> 00:32:29,320

GROUP THAT TRAINS MORE OF OUR COLLEGE STUDENTS
THAN ANY

906

00:32:29,320 --> 00:32:34,980

OTHER GROUP OF INSTITUTIONS IN THE COUNTRY.
MORE THAN HALF OF OUR STUDENTS WHO ARE AT

907

00:32:34,980 --> 00:32:37,250

THE
UNIVERSITIES AND THE FOUR-YEAR UNIVERSITIES

908

00:32:37,250 --> 00:32:41,860

– FOR YOUR
COLLEGES AND UNIVERSITIES HAVE A 10 DID COMMUNITY

909

00:32:41,860 --> 00:32:45,680

COLLEGES.
SO THIS IS AN IMPORTANT ELEMENT OF ADDRESSING

910

00:32:45,680 --> 00:32:49,720

THE
CHANGE THAT WE NEED TO MAKE IN STEM MORE BROADLY.

911

00:32:49,720 --> 00:32:52,260

AND I URGE THE UNIVERSITIES THAT ARE REPRESENTED
HERE

912

00:32:52,260 --> 00:32:56,140

TODAY TO CONSIDER THE COLLABORATIONS AND ALLIANCES
THAT

913

00:32:56,140 --> 00:32:59,650

YOU CAN FORM WITH THE COMMUNITY COLLEGES WHO
REACH INTO

914

00:32:59,650 --> 00:33:02,950

MANY OF THE COMMUNITIES THAT WE SO MUCH WANT
TO DRAW

915

00:33:02,950 --> 00:33:10,220

UPON FOR OUR FUTURE STEM WORKFORCE.
THEY ALSO, IN THE FC STEM FIVE-YEAR PLAN,

916

00:33:10,220 --> 00:33:13,680

EMPHASIZE
RESEARCH EXPERIENCES AND THE IMPORTANCE OF

917

00:33:13,680 --> 00:33:17,690

GETTING
AUTHENTIC EXPERIENCES TO OUR STEM STUDENTS

918

00:33:17,690 --> 00:33:19,890

EARLY ON IN
THEIR CAREERS.

919

00:33:19,890 --> 00:33:23,340

HAVING THEM UNDERSTAND WHAT A STEM EXPERIENCE
MEANS,

920

00:33:23,340 --> 00:33:26,570

WHAT A STEM CAREER MEANS, WHAT IT MEANS TO
DO RESEARCH

921

00:33:26,570 --> 00:33:29,290

AND INVESTIGATE NOT JUST MEMORIZE INFORMATION
THAT

922

00:33:29,290 --> 00:33:34,990

SOMEBODY ELSE HAD DISCOVERED.
AND FINALLY, THEY EMPHASIZE MATHEMATICS SUCCESS.

923

00:33:34,990 --> 00:33:37,950
THAT IS ABSOLUTELY CRITICAL IN THE FIELDS
THAT

924
00:33:37,950 --> 00:33:44,020
CONTRIBUTE TO NASA.
AND WE NEED TO BE FOCUSING ON MATH, PARTICULARLY,

925
00:33:44,020 --> 00:33:45,020
JUST

926
00:33:45,020 --> 00:33:48,460
ABOUT OVER THE MINUTE TALK ABOUT TODAY WILL
CONNECT

927
00:33:48,460 --> 00:33:53,220
WITH THE MATH CURRICULUM.
SO I HOPE YOU WILL THINK ABOUT AS WE GO THROUGH

928
00:33:53,220 --> 00:33:56,560
THE
THOUGHTS THAT I LIKE TO SHARE WITH YOU TODAY.

929
00:33:56,560 --> 00:33:59,740
PRESIDENT OBAMA, FOLLOWING THE T CAST REPORT
CALLED

930
00:33:59,740 --> 00:34:03,730
ENGAGE TO EXCEL THE DAVID MENTION, I PUT OUT
THE GOAL

931
00:34:03,730 --> 00:34:08,510
OF TRAINING 100 – OR 1 MILLION MORE STEM
COLLEGE

932
00:34:08,510 --> 00:34:11,839
GRADUATES OVER THE NEXT – AT THAT POINT
IT WAS OVER THE

933
00:34:11,839 --> 00:34:14,950

NEXT DECADE.
IT IS NO LONGER A DECADE.

934
00:34:14,950 --> 00:34:18,770
THAT WAS ACCOMPANIED BY HIS EARLIER COMMITMENT
TO TRAIN

935
00:34:18,770 --> 00:34:27,310
100,000 MORE OUTSTANDING STEM TEACHERS.
MADE ENORMOUS ADVANCES IN BOTH OF THESE, PARTICULARLY

936
00:34:27,310 --> 00:34:34,159
IN THE TRAINING OF STEM TEACHERS.
THE K-12 WORKFORCE, OF COURSE, NEEDS MORE

937
00:34:34,159 --> 00:34:37,319
TEACHERS
TRAINED IN STEM FIELDS BECAUSE SO MANY OF

938
00:34:37,319 --> 00:34:43,460
THE EARLIER
YEAR TEACHERS IN K-6 ACTUALLY HAVE AN ALLERGY

939
00:34:43,460 --> 00:34:46,690
TO STEM.
A WANT TO AVOID STEM AT ALL COSTS AND THEY

940
00:34:46,690 --> 00:34:49,609
PASS ON THAT
ALLERGY TO THEIR STUDENTS.

941
00:34:49,609 --> 00:34:52,029
AND SO THAT IS AN IMPORTANT AUDIENCE THAT
WE NEED TO

942
00:34:52,029 --> 00:34:58,470
REACH ARE THE K-12 TEACHERS.
THE PRESIDENTS INITIATIVE OF 100,000 MORE

943
00:34:58,470 --> 00:35:02,039

TRAINED STEM
TEACHERS IS ABOUT HALFWAY THROUGH.

944
00:35:02,039 --> 00:35:05,170
SINCE THE BEGINNING OF THAT INITIATIVE, WE
HAVE SEEN

945
00:35:05,170 --> 00:35:08,760
THE INTRODUCTION OF 50,000 MORE STEM TEACHERS
INTO THE

946
00:35:08,760 --> 00:35:12,430
WORKFORCE AND THERE SHOULD BE ANOTHER 50,000
IN

947
00:35:12,430 --> 00:35:16,500
TRAINING BY THE END OF THE ADMINISTRATION.
SO I THINK THAT IS ONE OF THE ADMINISTRATION'S

948
00:35:16,500 --> 00:35:19,859
MOST
SUCCESSFUL EFFORTS AND BE AN IMPORTANT ELEMENT

949
00:35:19,859 --> 00:35:23,869
IN
LEADING THE MILLION MORE STEM GRADUATES OF

950
00:35:23,869 --> 00:35:28,460
COLLEGE THAT
WE AIM FOR IN 2022.

951
00:35:28,460 --> 00:35:31,850
SO WHAT ELSE TO WE NEED TO DO TO ACHIEVE THAT
WORK

952
00:35:31,850 --> 00:35:35,509
FORCE?
AND SO, WE LOOKED AT THIS IN THE GROUP THAT

953
00:35:35,509 --> 00:35:39,770

WROTE THE
ENGAGE TO EXCEL REPORT AND WE FOUND THAT THERE

954
00:35:39,770 --> 00:35:42,800
WAS A
REAL CHALLENGE AND OPPORTUNITY, PARTICULARLY

955
00:35:42,800 --> 00:35:43,800
IN
COLLEGE.

956
00:35:43,800 --> 00:35:48,700
I'M GOING TO FOCUS ON THIS TYPE OF EDUCATION
BECAUSE OF

957
00:35:48,700 --> 00:35:51,470
OUR AUDIENCE TODAY, AS WE'RE DEALING WITH
UNIVERSITIES

958
00:35:51,470 --> 00:35:55,069
AND COLLEGES.
YOU ARE THE LEADERS THAT CAN MAKE THE DIFFERENCE

959
00:35:55,069 --> 00:35:58,470
HERE.
WE KNOW FROM THE EVIDENCE THAT 60 PERCENT

960
00:35:58,470 --> 00:36:03,140
OR MORE OF
STUDENTS WHO START COLLEGE INTERESTED IN STEM

961
00:36:03,140 --> 00:36:06,800
AND UP
GRADUATING IN A NON-STEM FIELD.

962
00:36:06,800 --> 00:36:11,759
THAT IS APPALLING.
THAT SAYS THAT WE ARE OUTSTANDING AT DRIVING

963
00:36:11,759 --> 00:36:14,540

STUDENTS
AWAY FROM STEM FIELDS.

964
00:36:14,540 --> 00:36:18,369
RATHER THAN FUNNELING THEM INTO THEM AS DAVID
SAID.

965
00:36:18,369 --> 00:36:21,170
WE HAVE THE OPPORTUNITY IN OUR INTRODUCTORY
COURSES TO

966
00:36:21,170 --> 00:36:25,420
EXCITE STUDENTS ABOUT – TO SHOW THEM THE
THRILL OF THE

967
00:36:25,420 --> 00:36:29,289
STEM CAREER, THE CHALLENGES, THE EXCITEMENT
OF SOLVING

968
00:36:29,289 --> 00:36:33,550
BIG PROBLEMS, SERVING SOCIETY, CHANGING THE
WORLD AND

969
00:36:33,550 --> 00:36:36,690
YET, WHAT WE DO INSTEAD IS CONVINCING THEM THAT
STEM IS

970
00:36:36,690 --> 00:36:40,470
NOT FOR THEM.
WE NEED TO GET RID OF THAT WEED OUT UNTALENTED

971
00:36:40,470 --> 00:36:43,980
THAT SO
MANY OF OUR INTRODUCTORY COURSES HAVE AN INSTEAD,

972
00:36:43,980 --> 00:36:46,990
MAKE
THEM MORE WELCOMING TWO MORE KINDS OF STUDENTS

973
00:36:46,990 --> 00:36:50,570

AND NOT
TAKE PRIDE IN THE FACT THAT MANY OF OUR STUDENTS

974
00:36:50,570 --> 00:36:52,450
DO NOT
DO WELL IN THOSE COURSES.

975
00:36:52,450 --> 00:36:56,279
WE SHOULD BE ASHAMED OF THAT.
WE SHOULD BE WORKING TO ASSURE THAT EVERY

976
00:36:56,279 --> 00:37:01,220
STUDENT WHO
WANTS TO BE A STEM MAJOR CAN SUCCEED IN STEM.

977
00:37:01,220 --> 00:37:05,200
SO, WHAT WE FOUND WAS THAT THE PROBLEM GOES
BEYOND JUST

978
00:37:05,200 --> 00:37:09,819
A GENERAL STATISTIC.
IT IS EVEN WORSE WHEN YOU LOOK AT STATISTIC

979
00:37:09,819 --> 00:37:14,519
GROUPS.
THIS IS FROM A REPORT THAT WAS PRODUCED BY

980
00:37:14,519 --> 00:37:16,400
THE NATIONAL
ACADEMY.

981
00:37:16,400 --> 00:37:20,329
IT SHOWED THAT RETENTION OF CERTAIN MINORITY
GROUPS IS

982
00:37:20,329 --> 00:37:25,460
SO MUCH WORSE, THAT IS LOW IS HALF OF THE
RATE OF

983
00:37:25,460 --> 00:37:30,390

RETENTION OCCURS IN SOME OF THE – THE MINORITY GROUPS

984

00:37:30,390 --> 00:37:34,630

AS WITH WHITE MEN.

SO WITH WHITE MEN, YOU MAY HAVE – IN SOME

985

00:37:34,630 --> 00:37:38,400

STUDIES, A

FIVE YEAR DEGREE COMPLETION RATE IN STEM FIELDS

986

00:37:38,400 --> 00:37:42,520

OF

ABOUT 34 PERCENT AND IN SEVERAL MINORITY GROUPS,

987

00:37:42,520 --> 00:37:45,269

IT'S

AROUND 17 AND 18 PERCENT.

988

00:37:45,269 --> 00:37:46,500

THAT IS SIMPLY NOT ACCEPTABLE.

989

00:37:46,500 --> 00:37:49,980

IT IS NOT ACCEPTABLE THAT STUDENTS GENERALLY

DO NOT

990

00:37:49,980 --> 00:37:52,150

GRADUATE WHEN THEY ARE INTERESTED IN STEM,

BUT IT'S

991

00:37:52,150 --> 00:37:58,660

EVEN MORE APPALLING THAT WE HAVE AN FORM OF

DISCRIMINATION GOING ON THAT DRIVES MINORITY

992

00:37:58,660 --> 00:38:01,910

STUDENTS

OUT OF STEM FIELDS.

993

00:38:01,910 --> 00:38:05,130

SO WHAT CAN WE DO?

WHAT CAN WE DO TO CHANGE THAT?

994

00:38:05,130 --> 00:38:08,519

IF WE WANT TO MEET THIS GOAL OF 1 MILLION
MORE STEM

995

00:38:08,519 --> 00:38:13,470

WORKERS WITH COLLEGE DEGREES BY 2022, WE HAVE
TO BE

996

00:38:13,470 --> 00:38:17,150

AGGRESSIVE ABOUT NOT ONLY RETAINING ALL STUDENTS
IN

997

00:38:17,150 --> 00:38:20,589

STEM, BUT FOCUSING SPECIFICALLY ON MINORITY
GROUPS AND

998

00:38:20,589 --> 00:38:23,609

WOMEN TO ENSURE THAT WE HAVE THE DIVERSITY
IN THE

999

00:38:23,609 --> 00:38:26,350

WORKFORCE THAT WILL MAKE IT A TRULY POWERFUL
WORK

1000

00:38:26,350 --> 00:38:29,780

FORCE.
WE KNOW FROM EXTENSIVE RESEARCH THAT MORE

1001

00:38:29,780 --> 00:38:32,980

DIVERSE
GROUPS ARE MORE CREATIVE AND COME UP WITH

1002

00:38:32,980 --> 00:38:35,759

MORE
SOLUTIONS AND MORE INTERESTING SOLUTIONS TO

1003

00:38:35,759 --> 00:38:39,030

PROBLEMS

AND THEY ALSO WILL BE ABLE TO DEFEND THEIR

1004

00:38:39,030 --> 00:38:41,280

SOLUTIONS TO
PROBLEMS BETTER.

1005

00:38:41,280 --> 00:38:45,609

ALL OF THOSE ARE IMPORTANT ELEMENTS FOR OUR
STEM FIELD.

1006

00:38:45,609 --> 00:38:48,619

SO LET'S TAKE ADVANTAGE OF THE TREMENDOUS
DIVERSITY,

1007

00:38:48,619 --> 00:38:52,569

THE HALLMARK OF THE UNITED STATES IS OUR DIVERSITY
AND

1008

00:38:52,569 --> 00:38:56,500

TO USE IT AS OUR GREATEST STRENGTH AS IT IS
AND NOT

1009

00:38:56,500 --> 00:39:01,380

IGNORE IT AND SQUEEZE OUT SOME GROUPS FROM
OUR STEM

1010

00:39:01,380 --> 00:39:05,240

FIELD.
SO I WOULD LIKE TO TURN OUT TO THE THREE ELEMENTS

1011

00:39:05,240 --> 00:39:08,789

OF
STEM FOR ALL, WHICH I SEE IS ON HUNTING ALL

1012

00:39:08,789 --> 00:39:13,819

OF THE WORK
THAT THE PRESIDENT HAS DONE ON DIVERSITY AND

1013

00:39:13,819 --> 00:39:16,599

EDUCATION

AND IN STEM SPECIFICALLY FOR THE PREVIOUS

1014

00:39:16,599 --> 00:39:21,210

SEVEN YEARS.

THESE, I THINK, ARE ELEMENTS OF THE PLAN THAT

1015

00:39:21,210 --> 00:39:25,690

WILL

AUGMENT OF EVERYTHING THAT WE'VE DONE IS A

1016

00:39:25,690 --> 00:39:29,140

GOVERNMENT.

WE WILL MAKE SURE THEY HAVE THE IMPACT THAT

1017

00:39:29,140 --> 00:39:32,839

THEY HAVE

WITHOUT CREATING BOTTLENECKS AT VARIOUS POINTS

1018

00:39:32,839 --> 00:39:34,440

IN

EDUCATION SYSTEM.

1019

00:39:34,440 --> 00:39:38,390

I'D LIKE TO START WITH THE ACTIVE LEARNING

ASPECT.

1020

00:39:38,390 --> 00:39:41,010

MANY OF YOU MAY BE FAMILIAR WITH ACTIVE LEARNING,

WHICH

1021

00:39:41,010 --> 00:39:47,050

IS, BY THE WAY, NOT WHAT I'M DOING RIGHT NOW.

UNFORTUNATELY, MOST OF OUR STEM COURSES ARE

1022

00:39:47,050 --> 00:39:48,050

TAUGHT –

1023

00:39:48,050 --> 00:39:51,400

ESPECIALLY THE INTRODUCTORY ONES – IN A

VERY DIDACTIC

1024

00:39:51,400 --> 00:39:56,420

WAY WHERE WE LECTURE AT OUR STUDENTS.
WE TELL THEM WHAT WE WANT THEM TO KNOW RATHER

1025

00:39:56,420 --> 00:39:59,849

THAN
HAVING THEM TRULY ENGAGE WITH KNOWLEDGE.

1026

00:39:59,849 --> 00:40:03,250

THERE IS WORK GOING BACK MORE THAN 50 YEARS
SHOWING

1027

00:40:03,250 --> 00:40:06,660

THAT WHEN PEOPLE ENGAGE AT ANY LEVEL, ENGAGE
WITH

1028

00:40:06,660 --> 00:40:09,890

KNOWLEDGE, THEREFORE MORE LIKELY TO LEARNED
THAT IF

1029

00:40:09,890 --> 00:40:14,579

THEY ARE SIMPLY TOLD IT.
THIS IS A VERY SIMPLE EXAMPLE FROM SOME OF

1030

00:40:14,579 --> 00:40:18,529

THE EARLY
WORK THAT IF YOU ASK PEOPLE TO REMEMBER A

1031

00:40:18,529 --> 00:40:23,800

WORD, SAYING
FAST AND RAPID ARE RELATED WORDS, HAVE SIMILAR

1032

00:40:23,800 --> 00:40:26,450

MEANING,
THEY WILL BE MUCH LESS LIKELY TO REMEMBER

1033

00:40:26,450 --> 00:40:31,029

THE TWO WORDS
YOU SAID THAT IF YOU ASKED THEM TO SOLVE A

1034

00:40:31,029 --> 00:40:34,079

PROBLEM, A

SIMPLE PROBLEM LIKE THIS BEING ABLE TO FILL

1035

00:40:34,079 --> 00:40:36,799

IN THE

LETTERS OF THE WORD RAPID WHERE THEY HAVE

1036

00:40:36,799 --> 00:40:41,079

TO THINK AND

ENGAGE IN THE PROBLEM RATHER THAN SIMPLY MEMORIZE

1037

00:40:41,079 --> 00:40:43,039

THE

WORK THAT YOU GAVE THEM.

1038

00:40:43,039 --> 00:40:46,480

AND SO, USING THAT AS A PRINCIPAL, WE CAN

EXPAND THAT

1039

00:40:46,480 --> 00:40:50,049

AN EXTENDED TO ALL OF STEM EDUCATION AND IT

IS NOT A

1040

00:40:50,049 --> 00:40:53,980

PRESCRIPTIVE APPROACH.

IT'S A PRINCIPLE OF GETTING STUDENT INVOLVED

1041

00:40:53,980 --> 00:40:57,400

AND

ENGAGED IN IN THEIR STEM EDUCATION.

1042

00:40:57,400 --> 00:41:00,660

THE BEAUTY OF ACTIVE LEARNING IS THAT THERE

ARE MANY

1043

00:41:00,660 --> 00:41:04,569

DIFFERENT WAYS OF CONDUCT IT IN ANY SIZE CLASS

IN ANY

1044

00:41:04,569 --> 00:41:08,069

MATCH.

AND SO IT CAN BE ANYTHING FROM CASE STUDIES

1045

00:41:08,069 --> 00:41:11,650

TO SIMPLY

ASKING STUDENTS TO WRITE A QUESTION ON A NOTE

1046

00:41:11,650 --> 00:41:15,080

CARD AS

THEY ARE LEAVING CLASS OR DOING QUIZZES BEFORE

1047

00:41:15,080 --> 00:41:18,740

CLASS.

THERE IS A BEAUTIFUL STUDY FROM STANFORD SHOWING

1048

00:41:18,740 --> 00:41:21,859

THAT

WHEN STUDENTS ENGAGE BEFORE A LECTURE, THEY

1049

00:41:21,859 --> 00:41:24,609

ARE FAR

MORE LIKELY TO LEARN OF THE LECTURE THAN IF

1050

00:41:24,609 --> 00:41:26,720

THEY ENGAGE

AFTER THE LECTURE.

1051

00:41:26,720 --> 00:41:30,599

SO AN IMPORTANT ELEMENT MIGHT BE TO DEVELOP

QUIZZES OR

1052

00:41:30,599 --> 00:41:34,750

ACTIVE PROBLEM-SOLVING BEFORE STUDENTS ENTER

THEIR

1053

00:41:34,750 --> 00:41:37,259

LECTURES.

SO IT DOESN'T MEAN THROWING OUT EVERYTHING

1054

00:41:37,259 --> 00:41:41,190

WE'VE DONE
FOR THE LAST 30 YEARS OF OUR CAREERS.

1055

00:41:41,190 --> 00:41:44,519

A LOT OF PEOPLE ARE INTIMIDATED BY THAT.

1056

00:41:44,519 --> 00:41:46,820

THEY SAY UP IN TEACHING MY PHYSICS COURSE
THE SAME WAY

1057

00:41:46,820 --> 00:41:50,530

FOR DECADES.
I DON'T REALLY WANT OVER HOLLY COMPLETELY.

1058

00:41:50,530 --> 00:41:55,859

IT DOES NOT REQUIRE THAT.
IT REQUIRES INTERJECTING STRATEGIC USE OF

1059

00:41:55,859 --> 00:41:59,420

ACTIVE
LEARNING, ANYTHING THAT WILL ENGAGE STUDENTS

1060

00:41:59,420 --> 00:42:03,470

IN THE
PROCESS OF THINKING, PROBLEM-SOLVING AND HELPING

1061

00:42:03,470 --> 00:42:05,579

OTHERS
LEARN AS WELL.

1062

00:42:05,579 --> 00:42:08,519

AND SO, ENGAGEMENT IS A VERY IMPORTANT ELEMENT
OF THAT

1063

00:42:08,519 --> 00:42:12,960

AND IT DOES NOT HAVE TO HAPPEN IN THE CLASSROOM,
ALTHOUGH IT CERTAINLY CAN, EVEN IN MASSIVE

1064

00:42:12,960 --> 00:42:15,430

LECTURES OF
1000 PEOPLE.

1065

00:42:15,430 --> 00:42:19,519

IF THERE IS NO PROBLEM INVOLVING STUDENTS
DURING THE

1066

00:42:19,519 --> 00:42:22,349

LECTURE.
BUT IT CAN HAPPEN OUTSIDE AS WELL, WHICH IS

1067

00:42:22,349 --> 00:42:25,499

OFTEN LESS
INTIMIDATING TO FACULTY.

1068

00:42:25,499 --> 00:42:28,349

STUDENTS TEACHING STUDENTS IS ONE OF THE VERY
BEST WAYS

1069

00:42:28,349 --> 00:42:32,130

WE KNOW IT HAS BEEN SHOWN FOR YEARS TO HAPPEN
IN OR

1070

00:42:32,130 --> 00:42:35,550

MISLEAD POSITIVE AFFECT ON LEARNING, BUT ON
MUCH MORE

1071

00:42:35,550 --> 00:42:39,250

THAN LEARNING.
WHAT WE HAVE FOUND HER RESEARCH IS THAT NOT

1072

00:42:39,250 --> 00:42:43,380

ONLY IS
LEARNING INCREASED BY ACTIVE LEARNING APHIDS,

1073

00:42:43,380 --> 00:42:46,740

BUT IT
ALSO INCREASES RETENTION OF STEM MAJORS.

1074

00:42:46,740 --> 00:42:49,279

STUDENTS THAT HAVE BEEN ACTIVELY GAUGED ARE MORE LIKELY

1075

00:42:49,279 --> 00:42:52,319

TO BE RETAINED IN THE STEM MAJORS, BUT THEY ARE MORE

1076

00:42:52,319 --> 00:42:54,790

LIKELY TO BE RETAINED IN COLLEGE GENERALLY WHICH I

1077

00:42:54,790 --> 00:42:57,940

THINK IS AN INTERESTING STATEMENT ABOUT WHAT WE HAVE

1078

00:42:57,940 --> 00:43:00,670

BEEN DOING IN TERMS OF A COMFORT, THE EXCITEMENT, THE

1079

00:43:00,670 --> 00:43:04,930

GAUGE MEANT IN THE SUCCESS OF OUR STUDENTS GENERALLY

1080

00:43:04,930 --> 00:43:08,250

WITH THE PASSIVE FORMS OF TEACHING THAT WE HAVE USED.

1081

00:43:08,250 --> 00:43:13,170

THE REDUCTION IN VERY POOR GRADES IS QUITE STRIKING IN

1082

00:43:13,170 --> 00:43:20,210

MOST OF THE STUDIES OF ACTIVE LEARNING. STUDENTS ARE MORE LIKELY TO DEVELOP NOT ONLY

1083

00:43:20,210 --> 00:43:22,299

THE MEMORIZATION OF KNOWLEDGE SKILLS, BUT THE

1084

00:43:22,299 --> 00:43:27,519

HIGHER ORDER

THINKING SKILLS OF EVALUATION, SYNTHESIS,

1085

00:43:27,519 --> 00:43:32,190

AND

UNDERSTANDING OF DATA AND INFORMATION.

1086

00:43:32,190 --> 00:43:34,359

AND ONE OF THE THINGS I THINK IS SO IMPORTANT

AND

1087

00:43:34,359 --> 00:43:37,329

ACTIVE LEARNING AND PARTICULARLY IN THE RESEARCH

1088

00:43:37,329 --> 00:43:40,349

ENGAGEMENT THAT I TALKED ABOUT EARLIER THAT

FC STEM IS

1089

00:43:40,349 --> 00:43:44,529

RECOMMENDED IS THAT STUDENTS DEVELOP AN IDENTITY

A

1090

00:43:44,529 --> 00:43:47,859

SCIENTIST.

AND THAT IS CRITICAL FOR THEM TO FEEL PART

1091

00:43:47,859 --> 00:43:51,140

OF THE

SCIENTIFIC COMMUNITY AND PARTICULARLY, FOR

1092

00:43:51,140 --> 00:43:54,619

STUDENTS

LIKE WOMEN AND MINORITIES WHO HAVE NOT NECESSARILY

1093

00:43:54,619 --> 00:43:58,450

SEEN

ROLE MODELS IN THEIR PAST THAT LOOK LIKE THEM.

1094

00:43:58,450 --> 00:44:01,509

AND THEY CAN'T QUITE IMAGINE THEMSELVES PART
OF THAT

1095

00:44:01,509 --> 00:44:03,920

SCIENTIFIC COMMUNITY BECAUSE THEY DO NOT LOOK
LIKE THE

1096

00:44:03,920 --> 00:44:08,720

SCIENTIST THAT THEY HAVE SEEN.
IT'S CRITICAL THAT THEY, EARLY ON IN THEIR

1097

00:44:08,720 --> 00:44:11,509

SCHOOLING,
DEVELOP AN UNDERSTANDING OF WHAT IT FEELS

1098

00:44:11,509 --> 00:44:15,069

LIKE TO BE A
SCIENTIST TO BE PART OF THE GROUP OF SCIENTISTS

1099

00:44:15,069 --> 00:44:21,579

THAT'S
WHAT ME MEAN BY THE IDENTITY OF SCIENTISTS.

1100

00:44:21,579 --> 00:44:24,559

ONE OF THE EXCITING RINGS THAT WE'RE LOOKING
FORWARD TO

1101

00:44:24,559 --> 00:44:29,380

COMING UP THIS FALL IS ACTIVE LEARNING DATE
THAT WAS

1102

00:44:29,380 --> 00:44:33,089

ANNOUNCED BY THE NATIONAL SCIENCE FOUNDATION
AT SCIENCE

1103

00:44:33,089 --> 00:44:37,299

FAIR LAST APRIL.
THIS IS A BACK TO SCHOOL AFTER THAT WE'LL

1104

00:44:37,299 --> 00:44:41,499

ENGAGE

INSTRUCTORS AT ALL LEVELS FROM K-12 THROUGH

1105

00:44:41,499 --> 00:44:43,190

GRADUATE

SCHOOL.

1106

00:44:43,190 --> 00:44:48,309

AND WE HOPE THAT IT WILL BE FOLLOWED.

IT WILL BE OCCURRING EARLY AND SET TEMPER

1107

00:44:48,309 --> 00:44:51,140

AND THEN WE

ARE HOPING THAT IT WILL BE FOLLOWED BY ENGAGEMENT

1108

00:44:51,140 --> 00:44:54,769

BY

COLLEGES AND UNIVERSITIES ACROSS THE COUNTRY

1109

00:44:54,769 --> 00:44:57,600

AND

COMMITTING TO INVOLVING THEIR FACULTY AND

1110

00:44:57,600 --> 00:45:01,279

THEIR

STUDENTS AND ACTIVE LEARNING IN STEM CLASSES.

1111

00:45:01,279 --> 00:45:04,420

WE DO NOT EXPECT A RADICAL CHANGE AT THE BEGINNING,

BUT

1112

00:45:04,420 --> 00:45:08,980

WE FEEL THAT IF MANY, MANY INSTITUTIONS ENGAGE,

EVEN A

1113

00:45:08,980 --> 00:45:12,119

SMALL AMOUNT AND ACTIVE LEARNING, MANY OF

OUR

1114

00:45:12,119 --> 00:45:15,029

INSTRUCTORS WOULD OVERCOME THE INITIAL BARRIERS
TO

1115

00:45:15,029 --> 00:45:17,470

USING ACTIVE LEARNING.
IT'S NEW AND DIFFERENT.

1116

00:45:17,470 --> 00:45:20,099

IT'S SCARY.
THEY DON'T FEEL EXPERT AT IT.

1117

00:45:20,099 --> 00:45:23,420

BUT IF WE GET MANY PEOPLE TO TRY IT, PERHAPS
THEY WILL

1118

00:45:23,420 --> 00:45:26,859

FIND THE EXCITEMENT OF ENGAGING THEIR STUDENTS,
SEE THE

1119

00:45:26,859 --> 00:45:30,279

VALUABLE FOR THEIR STUDENTS AND THEMSELVES
IN USING AN

1120

00:45:30,279 --> 00:45:34,160

ACTIVE APPROACH IN THE CLASSROOM AND WILL
BEGIN TO SEE

1121

00:45:34,160 --> 00:45:38,692

CHANGE.
THE NEXT AREA OF STEM FOR ALL IS OF COURSE

1122

00:45:38,692 --> 00:45:42,119

ACCESS.
AND I WOULD LIKE TO JUST MENTION IT BRIEFLY.

1123

00:45:42,119 --> 00:45:48,829

IT'S FOCUSING ON K-12 BECAUSE THAT'S WHERE
ACCESS TENDS

1124

00:45:48,829 --> 00:45:54,609

TO BE MORE DISCRIMINATORY THAN AT OTHER LEVELS.
SO I WILL NOT SPEND A LOT OF TIME ON IT SINCE

1125

00:45:54,609 --> 00:45:57,859

THIS IS
REALLY FOCUSED MORE ON THE UNIVERSITY AND

1126

00:45:57,859 --> 00:45:58,859

COLLEGE
LEVEL.

1127

00:45:58,859 --> 00:46:02,730

SO THERE ARE SEVERAL APPROACHES THAT WE'VE
SUGGESTED TO

1128

00:46:02,730 --> 00:46:06,859

INCREASE COURSE ACCESS AND SEVERAL OF THESE
ARE UNDER

1129

00:46:06,859 --> 00:46:11,259

WAY.
THE CHALLENGES THAT THE REPRESENTATION OF

1130

00:46:11,259 --> 00:46:14,420

OUR AP
COURSES, THE ADVANCED COURSES, AS WELL AS

1131

00:46:14,420 --> 00:46:19,869

COMPUTER
SCIENCE AT ALL LEVELS IS DIFFERENTIAL ACCORDING

1132

00:46:19,869 --> 00:46:23,960

TO
SCHOOL DISTRICT AND ACCORDING TO STATE AND

1133

00:46:23,960 --> 00:46:26,030

ACCORDING TO
PART OF THE COUNTRY.

1134

00:46:26,030 --> 00:46:28,400

SO THERE ARE, FOR EXAMPLE, MANY SOUTHERN STATES
AND

1135

00:46:28,400 --> 00:46:32,770

WESTERN STATES THAT HAVE VERY LOW RATES OF
AP COURSE

1136

00:46:32,770 --> 00:46:36,640

COMPLETION AND THOSE RATES ARE EVEN LOWER,
MUCH LOWER,

1137

00:46:36,640 --> 00:46:43,890

AMONG WOMEN AND NUMBERS OF NORDIC GROUPS.
AND SO, WE NEED TO BE OFFERING THE AP CURRICULUM

1138

00:46:43,890 --> 00:46:47,749

OR
BROADLY, MORE EVENLY, ACROSS THE UNITED STATES

1139

00:46:47,749 --> 00:46:50,650

AND MAKE
SURE THAT ALL STUDENTS IN HIGH SCHOOLS WHO

1140

00:46:50,650 --> 00:46:54,230

ARE
INTERESTED IN ADVANCED COURSES CAN TAKE THEM.

1141

00:46:54,230 --> 00:46:57,819

THERE IS A STRONG ASSOCIATION BETWEEN ADVANCED
COURSES

1142

00:46:57,819 --> 00:47:01,810

ACCESS AND RETENTION IN COLLEGE AND SUCCESS
IN COLLEGE

1143

00:47:01,810 --> 00:47:04,650

CURRICULUM GENERALLY, NOT JUST IN STEM, BUT
MORE

1144

00:47:04,650 --> 00:47:09,920

BROADLY.

AND SO WE ARE DEPRIVING STUDENTS OF AN EXPERIENCE

1145

00:47:09,920 --> 00:47:13,299

THAT

WILL DO HATE MUCH OF THEIR SUCCESS LATER ON,

1146

00:47:13,299 --> 00:47:17,099

NOT JUST A

HIGH SCHOOL EXPERIENCE, BY DENYING THEM ACCESS

1147

00:47:17,099 --> 00:47:19,240

TO AP

ACCESS.

1148

00:47:19,240 --> 00:47:28,710

ONE OF THE EFFORTS OF THE INITIATIVE IS TO

FOCUS ON

1149

00:47:28,710 --> 00:47:33,309

COMPUTER SCIENCE.

YOU MAY HAVE HEARD COMPUTER SCIENCE FOR ALL

1150

00:47:33,309 --> 00:47:37,710

ANOTHER

WHITE HOUSE INITIATIVE THAT GENERATED \$4 BILLION

1151

00:47:37,710 --> 00:47:41,540

OF

SUPPORT FROM PRIVATE INDUSTRY TO HELP STUDENTS

1152

00:47:41,540 --> 00:47:42,540

ACQUIRE

1153

00:47:42,540 --> 00:47:44,660

THE SKILLS IN COMPUTER SCIENCE THAT ARE NEEDED

FOR

1154

00:47:44,660 --> 00:47:49,670

TODAY'S AND TOMORROW'S WORKFORCE.
THAT HAS BEEN AN INCREDIBLE SUCCESS ACROSS

1155
00:47:49,670 --> 00:47:53,239
PRIVATE
INDUSTRY COMMITTED TO HELPING STUDENTS AND

1156
00:47:53,239 --> 00:47:58,339
SCHOOLS HAVE
ACCESS TO THE RIGHT EQUIPMENT, THE RIGHT EXPERTISE

1157
00:47:58,339 --> 00:48:00,930
AND
THE EXPERIENCES THAT WILL TRULY EQUIP THEM

1158
00:48:00,930 --> 00:48:02,630
FOR THE
FUTURE.

1159
00:48:02,630 --> 00:48:06,150
WE'RE TRYING ALSO TO ACHIEVE FEDERAL FUNDING
FOR THAT

1160
00:48:06,150 --> 00:48:14,290
AND WE ARE HOPING THAT THE COLLABORATIVE PRIVATE
PARTNER WILL REALLY CHANGE THE FACE OF COMPUTER

1161
00:48:14,290 --> 00:48:17,190
SCIENCE
AND K-12 TEACHING BECAUSE AS WE ALL KNOW,

1162
00:48:17,190 --> 00:48:21,529
THE ABILITY
TO CODING USE COMPUTERS THE ABILITY TO PROGRAM

1163
00:48:21,529 --> 00:48:25,109
ARE TO
BE SKILLS THAT ARE NEEDED NOT ONLY IN STEM

1164
00:48:25,109 --> 00:48:33,690

FIELDS, BUT
ACROSS ALL OF OUR WORKFORCE ON THIS ISSUE

1165
00:48:33,690 --> 00:48:37,440
OF VIRUS.
AND THAT IS SOMETHING THAT DAVID MENTIONED

1166
00:48:37,440 --> 00:48:42,150
IMPLICIT
BIAS OR THE ASSUMPTIONS MADE ABOUT PEOPLE

1167
00:48:42,150 --> 00:48:46,900
CUSS OF
STEREOTYPES THAT WE ARE FAMILIAR WITH.

1168
00:48:46,900 --> 00:48:51,200
IT IS ONE OF THE – IT REPRESENTS ONE OF
THE MOST

1169
00:48:51,200 --> 00:48:55,670
INSIDIOUS FORMS OF DISCRIMINATION ACROSS ALL
OF OUR

1170
00:48:55,670 --> 00:48:59,869
SECTORS AND PARTICULARLY AFFECTS MINORITIES
AND WOMEN

1171
00:48:59,869 --> 00:49:03,700
IN STEM FIELDS.
SO I WOULD LIKE TO TALK ABOUT A FEW KINDS

1172
00:49:03,700 --> 00:49:08,460
OF EVIDENCE
THAT BIAS IS GREATLY AFFECTING OUR STEM WORK

1173
00:49:08,460 --> 00:49:11,599
FORCE.
I'D LIKE TO START WITH SOME EMPLOYMENT DATA,

1174
00:49:11,599 --> 00:49:15,589

WHICH IS
NOT PROOF OF ANYTHING, BUT IS AN OBSERVATION.

1175

00:49:15,589 --> 00:49:19,079
AND THEN SOME MORE EXPLANATORY OR MECHANISTIC
STUDIES

1176

00:49:19,079 --> 00:49:23,049
WHICH ARE RANDOM CONTROLLED STUDIES THAT SHOW
THE

1177

00:49:23,049 --> 00:49:28,200
EVIDENCE OF BIAS AND THEN LOOK AT THE EFFECTS
OF

1178

00:49:28,200 --> 00:49:33,799
CHANGING BIAS THROUGH PRACTICAL INTERVENTION
IN

1179

00:49:33,799 --> 00:49:40,009
INSTITUTIONS, BUT ALSO IN THE MASS MEDIA.
IF WE LOOK AT SOME OF THE EMPLOYMENT DATA

1180

00:49:40,009 --> 00:49:44,539
IN THE US,
THESE ARE DATA FROM THE NATIONAL SCIENCE FOUNDATION,

1181

00:49:44,539 --> 00:49:47,819
WE
SEE THAT THE SALARIES OF MEN AND WOMEN WHO

1182

00:49:47,819 --> 00:49:51,820
HAVE NATURAL
OTHERS TO GREECE INSTEAD ARE QUITE DIFFERENT.

1183

00:49:51,820 --> 00:49:54,900
AND SO IF YOU LOOK ACROSS THE ENTIRE WORKFORCE,
THIS IS

1184

00:49:54,900 --> 00:50:06,130

ALL AGES, WE SEE THAT THE AVERAGE RAIL SALARY
IN STEM –

1185

00:50:06,130 --> 00:50:09,119

THE MAIL SALARIES 80,000 IN THE AVERAGE FEMALE
SOCIETY

1186

00:50:09,119 --> 00:50:10,119

IS 65,000.

1187

00:50:10,119 --> 00:50:13,289

WHEN WE FIRST LOOKED AT THE DATA WE WONDERED
IF PERHAPS

1188

00:50:13,289 --> 00:50:15,881

THERE'S BEEN MORE MEN IN STEM FOR LONGER AND
SO THEY

1189

00:50:15,881 --> 00:50:20,579

HAVE THE MORE SENIOR JOBS.
BUT VERY WISELY, THE NATIONAL SCIENCE FOUNDATION

1190

00:50:20,579 --> 00:50:25,359

LOOKED
AT THAT QUESTION I LOOKING AT PEOPLE IN THE

1191

00:50:25,359 --> 00:50:29,349

WORKFORCE
WHO WERE 29 IN YOUNGER WHEN YOU CAN IMAGINE

1192

00:50:29,349 --> 00:50:31,839

THEY WERE
TRAINED IN YEARS WHEN THERE WAS MUCH MORE.

1193

00:50:31,839 --> 00:50:40,109

T IN THE STEM MAJORS AND YOU SEE THAT PERCENTAGEWISE,
THE DIFFERENCE IS EVEN GREATER.

1194

00:50:40,109 --> 00:50:47,890

53 VERSUS 40,000.

SO THIS IS A PERSISTENT DIFFERENT IN PAY.

1195

00:50:47,890 --> 00:50:51,760

WE DO NOT KNOW WHY THIS IS.

WE CANNOT SAY THAT IT IS DISCRIMINATION, BUT

1196

00:50:51,760 --> 00:50:54,579

IT

CERTAINLY IS SUSPICIOUS THAT PEOPLE WITH THE

1197

00:50:54,579 --> 00:50:59,180

SAME

DEGREE, ON AVERAGE, MAKE SUCH DIFFERENT SALARIES.

1198

00:50:59,180 --> 00:51:03,040

SO WE BEGAN TO LOOK AT THIS AND OTHER – THROUGH

OTHER

1199

00:51:03,040 --> 00:51:07,529

DATA.

AND IF YOU LOOK AT SOME OF THE CONTROLLED

1200

00:51:07,529 --> 00:51:11,170

EXPERIMENTS,

YOU FIND THAT THERE IS TREMENDOUS BIAS AND

1201

00:51:11,170 --> 00:51:14,279

IT IS NOT A

SURPRISE THAT SALARIES WOULD DIFFER GREATLY

1202

00:51:14,279 --> 00:51:17,710

IN STEM

FIELDS BETWEEN MEN AND WOMEN.

1203

00:51:17,710 --> 00:51:21,079

SO, ONE OF THE CLASSIC EXPERIMENTS WAS TO

HAVE

1204

00:51:21,079 --> 00:51:25,310

REVIEWERS RATE THE VERBAL SKILLS OF A PERSON

– THIS IS

1205

00:51:25,310 --> 00:51:28,900

NOT NECESSARILY IN STEM – BASED ON READING
A SHORT

1206

00:51:28,900 --> 00:51:35,299

PARAGRAPH THAT THAT PERSON SUPPOSEDLY WROTE.
AND IF THE REVIEWER WAS TOLD THAT THE WRITER

1207

00:51:35,299 --> 00:51:38,319

WAS AN
AFRICAN-AMERICAN, THEY RATED THE SKILLS OF

1208

00:51:38,319 --> 00:51:39,460

THE PERSON
LOWER.

1209

00:51:39,460 --> 00:51:46,180

THE SAME PARAGRAPH JUST TOLD IN AN AFRICAN-AMERICAN
WROTE THE PARAGRAPH WILL TRY THAT RATING DOWN.

1210

00:51:46,180 --> 00:51:49,039

INTERESTINGLY, IF THERE TOLD AMY AND WROTE
IT THEY WILL

1211

00:51:49,039 --> 00:51:52,829

ALSO REDUCE THEIR RATING WITH A RATING WILL
BE REDUCED

1212

00:51:52,829 --> 00:51:56,309

BECAUSE THERE SEEMS TO BE A STEREOTYPE THAT
IN THE CASE

1213

00:51:56,309 --> 00:52:01,641

OF RACE, THAT WHITES RICE BETTER THAN AFRICAN-AMERICANS
AND THAT WOMEN WRITE BETTER THAN MEN.

1214

00:52:01,641 --> 00:52:05,599

THAT IS A CASE WHERE WE HAVE A LITTLE BIT

OF REVERSAL

1215

00:52:05,599 --> 00:52:10,180

DISCRIMINATION.

IT CAN WORK BOTH WAYS PASTE ON WHATEVER THE

1216

00:52:14,880 --> 00:52:11,180

STEREOTYPES

1217

00:52:14,880 --> 00:52:18,230

CORRECT, BUT EVEN IF THEY WERE, AND THIS IS

A CRITICAL

1218

00:52:18,230 --> 00:52:23,960

POINT THAT GETS LOST IN THE CONVERSATION.

EVEN IF, IN GENERAL, THE STEREOTYPES WERE

1219

00:52:23,960 --> 00:52:28,589

CORRECT, THEY

DO NOT APPLY TO ANY INDIVIDUAL NECESSARILY.

1220

00:52:28,589 --> 00:52:31,299

ANOTHER EXPERIMENT THAT I PARTICULARLY LIKE

IS ONE

1221

00:52:31,299 --> 00:52:35,109

WHERE THEY ASK PEOPLE TO ESTIMATE THE HEIGHTS

OF MEN

1222

00:52:35,109 --> 00:52:39,300

AND WOMEN.

PUT THEM IN A DOORWAY OF STANDARD HEIGHT.

1223

00:52:39,300 --> 00:52:42,069

PEOPLE CONSISTENTLY OVERESTIMATED THE HEIGHTS

OF THE

1224

00:52:42,069 --> 00:52:44,670

MEN AND UNDERESTIMATED THE HEIGHTS OF THE

WOMEN.

1225

00:52:44,670 --> 00:52:48,480

THAT IS AN EXAMPLE WHERE THERE IS A STEREOTYPE
THAT IS

1226

00:52:48,480 --> 00:52:50,970

TRUE.
THAT IS A STEREOTYPE THAT MEN ARE ON AVERAGE

1227

00:52:50,970 --> 00:52:54,450

TALLER
THAN WOMEN, BUT THE STEREOTYPE WRITES US TO

1228

00:52:54,450 --> 00:52:58,960

THE WRONG
ANSWER THAT'S ONE OF THE REASON STEREOTYPES

1229

00:52:58,960 --> 00:53:00,890

ARE
DESTRUCTIVE.

1230

00:53:00,890 --> 00:53:05,650

WHETHER TRUE OR NOT ON AN AVERAGE OF POPULATION
LEVEL,

1231

00:53:05,650 --> 00:53:07,680

IT DOES NOT MATTER WHEN YOU ARE DEALING WITH
THE

1232

00:53:07,680 --> 00:53:11,220

INDIVIDUAL.
YOU WILL GET TO THE WRONG ANSWER IF YOU ENABLE

1233

00:53:11,220 --> 00:53:14,050

THOSE
STEREOTYPES TO ENTER INTO A DECISION-MAKING

1234

00:53:14,050 --> 00:53:17,819

PROCESS.
AND SO, THINK THAT'S AN IMPORTANT POINT BECAUSE

1235
00:53:17,819 --> 00:53:21,239
IT
TAKES THE CONVERSATION AWAY FROM WHAT HAPPENS

1236
00:53:21,239 --> 00:53:25,290
ON AN
AVERAGE FOCUSES ON THE EVALUATIONS THAT WE

1237
00:53:25,290 --> 00:53:30,260
MAKE EVERY
DAY ABOUT INDIVIDUALS, MEN, WOMEN, AFRICAN-AMERICANS,

1238
00:53:30,260 --> 00:53:34,410
NATIVE AMERICANS, HISPANICS, DISABLED PEOPLE,
ANYBODY

1239
00:53:34,410 --> 00:53:39,960
COMING INTO OUR STEM FIELDS.
WE EVALUATED THEM BASED ON THEIR OWN MERITS

1240
00:53:39,960 --> 00:53:42,150
AND THEIR
OWN TALENTS?

1241
00:53:42,150 --> 00:53:45,630
OR ARE WE EVALUATING THEM BASED ON THE STEREOTYPES
THAT

1242
00:53:45,630 --> 00:53:52,849
MAY OR MAY NOT APPLY TO THE?
ANOTHER TYPE OF STUDY THAT IS REALLY QUITE

1243
00:53:52,849 --> 00:53:56,549
POWERFUL IS
A LONG HISTORY – AND THERE ARE ABOUT 40

1244
00:53:56,549 --> 00:54:01,000
OR 50 YEARS OF
THE STUDIES – WHERE RANDOMIZED CONTROLLED

1245
00:54:01,000 --> 00:54:04,420
OR
EXPERIMENTS ARE SET UP WHERE IDENTICAL APPLICATIONS

1246
00:54:04,420 --> 00:54:06,970
ARE
GIVING TO EVALUATORS.

1247
00:54:06,970 --> 00:54:10,430
THE EVALUATORS HARASSED WHETHER THEY WOULD
HIRE THE

1248
00:54:10,430 --> 00:54:14,840
PERSON OR NOT.
A DIFFERENT NAME IS RANDOMLY PLACED ON THE

1249
00:54:14,840 --> 00:54:19,460
APPLICATIONS
IN THE EVALUATORS TO SEE ONE APPLICATION WITH

1250
00:54:19,460 --> 00:54:21,980
EITHER
THE MAN OR THE WOMAN'S NAME AND THIS HAS BEEN

1251
00:54:21,980 --> 00:54:23,400
DONE WITH
RACE AS WELL.

1252
00:54:23,400 --> 00:54:26,910
IN THE EXPERIMENT COMES OUT THE SAME EVERY
TIME.

1253
00:54:26,910 --> 00:54:30,900
THIS IS ESPECIALLY EVIDENT IN THE STEM FEEL
'S OR IN

1254
00:54:30,900 --> 00:54:36,069
FIELDS WHERE WOMEN ARE LESS WELL REPRESENTED
TO DOOR

1255

00:54:36,069 --> 00:54:42,479

MINORITIES ARE IN MORE NUMBERS THAN MEN.
PEOPLE ARE MORE LIKELY TO HIRE A PERSON IF

1256

00:54:42,479 --> 00:54:46,039

THE
APPLICATION HAS A MAN'S NAME ON IT IN A FIELD

1257

00:54:46,039 --> 00:54:47,880

THAT IS
DOMINATED BY MEN.

1258

00:54:47,880 --> 00:54:51,859

IN OVER 40 YEARS WE HAVE NOT SEEN A CHANGE
IN THIS.

1259

00:54:51,859 --> 00:54:54,489

AND THAT IS AN INTERESTING PHENOMENON BECAUSE
WE ALL

1260

00:54:54,489 --> 00:55:00,010

KNOW THAT EXPLICIT BIAS AND PREJUDICE AND
DISCRIMINATION HAS BEEN DIMINISHED OVER THE

1261

00:55:00,010 --> 00:55:01,680

LAST 40
YEARS.

1262

00:55:01,680 --> 00:55:05,720

BUT WHAT THIS SAYS IS THAT THE BIASES THAT
WE DON'T

1263

00:55:05,720 --> 00:55:07,480

THINK ABOUT, THE ONES THAT ARE COMING FROM
THE

1264

00:55:07,480 --> 00:55:11,460

UNCONSCIOUS THAT ARE EMBEDDED THROUGH CULTURAL
EXPOSURE

1265

00:55:11,460 --> 00:55:15,089

FOR PROBABLY CENTURIES, ARE THE ONES THAT
ARE NOT

1266

00:55:15,089 --> 00:55:18,369

CHANGING.

THOSE ARE THE ONES WE NEED TO FOCUS ON IN

1267

00:55:18,369 --> 00:55:22,279

STEM NOW.

WE KNOW WHAT'S ILLEGAL AND ALTHOUGH, AS DAVID

1268

00:55:22,279 --> 00:55:26,329

SAID, WE

NEED TO WORK HARDER TO ENFORCE OUR LAWS FOR

1269

00:55:26,329 --> 00:55:31,319

EQUAL

OPPORTUNITY, BUT THE IMPLICIT BIASES ARE NOT

1270

00:55:31,319 --> 00:55:34,420

AS

OBVIOUSLY ILLEGAL, ALTHOUGH THERE IS SOME

1271

00:55:34,420 --> 00:55:38,829

EVIDENCE FROM

THE LAW THAT THEY CAN BE USED IN COURT AS

1272

00:55:38,829 --> 00:55:42,039

SIGNS OF

DISCRIMINATION.

1273

00:55:42,039 --> 00:55:45,480

BUT WHETHER LEGAL OR NOT, THEY ARE WRONG AND

THEY LEAD

1274

00:55:45,480 --> 00:55:49,640

US TO THE WRONG ANSWERS AND WE NEED THOSE

OUT.

1275

00:55:49,640 --> 00:55:55,259

I TALKED ABOUT THIS A LONG TIME WHEN I WAS
A PROFESSOR

1276

00:55:55,259 --> 00:55:59,170

AND I KEPT HEARING THE SAME ANSWER OR REACTION
FROM

1277

00:55:59,170 --> 00:56:03,640

MANY PEOPLE.
AND WISE THAT WE DO NOT KNOW THAT THIS EXTENDS

1278

00:56:03,640 --> 00:56:07,859

TO STEM.
WE KNOW IT IS TRUE AND LOTS OF OTHER FIELDS

1279

00:56:07,859 --> 00:56:13,380

DOMINATED
BY MEN OR MAJORITY PEOPLE, BUT WE DO NOT KNOW

1280

00:56:13,380 --> 00:56:14,380

THAT

1281

00:56:14,380 --> 00:56:16,319

SCIENTISTS CAN'T OVERCOME THOSE BIASES BECAUSE
THEY ARE

1282

00:56:16,319 --> 00:56:21,420

TRAINED TO BE OBJECTIVE.
AND ALTHOUGH THAT DOES NOT MAKE SENSE BECAUSE

1283

00:56:21,420 --> 00:56:24,200

WE ARE
TALKING ABOUT IMPLICIT AND UNCONSCIOUS FUNCTIONS.

1284

00:56:24,200 --> 00:56:28,619

WE ARE NOT TALKING ABOUT THE COGNITIVE FUNCTIONS
OF THE

1285

00:56:28,619 --> 00:56:34,020

CONSCIOUS MIND.

AS A PROFESSOR, I GOT REALLY DISPARAGING OF

1286

00:56:34,020 --> 00:56:36,769

OVER

CONVINCING COLLEAGUES THAT THIS WAS REALLY

1287

00:56:36,769 --> 00:56:38,299

APPLYING TO

THEM.

1288

00:56:38,299 --> 00:56:42,420

AND SO, I RESEARCH GROUP IN MY TEACHING SIDE
OF MY

1289

00:56:42,420 --> 00:56:56,849

PROGRAM DECIDED TO DO THE EXPERIMENTS.

AND SO, WE TOOK 127 IDEOLOGISTS, CHEMISTS

1290

00:56:56,849 --> 00:57:00,640

AND

PHYSICISTS AT UNIVERSITIES ACROSS THE COUNTRY.

1291

00:57:00,640 --> 00:57:04,599

THESE WERE TOP UNIVERSITIES, PUBLIC, PRIVATE,
ALL AREAS

1292

00:57:04,599 --> 00:57:10,279

OF THE COUNTRY.

WE SENT EACH OF THOSE FACULTY MEMBERS A DESCRIPTION

1293

00:57:10,279 --> 00:57:12,760

OF

A STUDENT, JUST ONE DESCRIPTION.

1294

00:57:12,760 --> 00:57:15,479

WE RANDOMLY ASSIGNED THE NAME EITHER JENNIFER
OR JOHN

1295

00:57:15,479 --> 00:57:19,619

TO THE DESCRIPTION.

AND WE ASKED THEM ABOUT THE COMPETENCE OF

1296

00:57:19,619 --> 00:57:22,680

THE STUDENT,

WHETHER THEY WOULD HIRE THE STUDENT AS A LAB

1297

00:57:22,680 --> 00:57:26,749

MANAGER,

WITH THEY WOULD PROVIDE THE STUDENT MENTORING

1298

00:57:26,749 --> 00:57:29,329

AND WHAT

SALARY THEY WOULD PROVIDE THE STUDENT.

1299

00:57:29,329 --> 00:57:35,259

AND THE RESULTS WERE QUITE STRIKING.

SO IN HIRING JOHN WAS MUCH MORE LIKELY TO

1300

00:57:35,259 --> 00:57:37,220

BE HIGHER

THAN JENNIFER.

1301

00:57:37,220 --> 00:57:43,609

THIS IS ON A LIKELIHOOD – LIKE SCALE UP

TO FIVE POINTS.

1302

00:57:43,609 --> 00:57:47,680

AND THE RESULT WAS HIGHLY SIGNIFICANT AND

IT WAS SPREAD

1303

00:57:47,680 --> 00:57:50,880

THROUGHOUT THE POPULATION.

ONE OF THE THINGS THAT WAS STRIKING WAS THAT

1304

00:57:50,880 --> 00:57:55,079

AFTER WE

COLLECTED ONLY 26 RESPONSES, THE RESULTS WERE

1305

00:57:55,079 --> 00:57:58,979

STATISTICALLY SIGNIFICANT SUGGESTING THIS
WAS A

1306

00:57:58,979 --> 00:58:03,569

WIDESPREAD BIAS, NOT JUST A FEW OUTLIERS CHANGING
THE

1307

00:58:03,569 --> 00:58:06,099

MEAN.
AND THEN WE ASKED WHETHER JOHN OR JENNIFER

1308

00:58:06,099 --> 00:58:08,950

WOULD
RECEIVE MENTORING AND THIS WAS ONE THAT I

1309

00:58:08,950 --> 00:58:11,839

LIVE IT
SURPRISED ME THE MOST AND THEY SAID THAT THEY

1310

00:58:11,839 --> 00:58:16,470

WERE LESS
LIKELY TO MENTOR JENNIFER AND JOHN.

1311

00:58:16,470 --> 00:58:19,019

AND THIS WAS DESPITE THE FACT THAT ON AVERAGE,
THEY

1312

00:58:19,019 --> 00:58:22,970

LIKED JENNIFER MORE THAN JOHN.
THEIR REACTION WAS MORE POSITIVE WHEN THE

1313

00:58:22,970 --> 00:58:26,890

STUDENT WAS
FEMALE, BUT THEY WERE STILL LESS LIKELY TO

1314

00:58:26,890 --> 00:58:30,119

MENTOR HER.
IT WAS NOT DRIVEN BY LIKE.

1315

00:58:30,119 --> 00:58:33,410

AND THE SALARY THEY WOULD OFFER EACH OF THE STUDENT WAS

1316

00:58:33,410 --> 00:58:37,619

QUITE DIFFERENT.

ABOUT 15 PERCENT DIFFERENT, A DIFFERENCE IN

1317

00:58:37,619 --> 00:58:40,390

SALARY.

JENNIFER, COURSE, RECEIVING THE LOWER SALARY.

1318

00:58:40,390 --> 00:58:44,119

IF YOU CALCULATE THE CUMULATIVE EARNINGS OVER

A

1319

00:58:44,119 --> 00:58:47,920

LIFETIME OF THIS DIFFERENCE IN STARTING SALARY, YOU GET

1320

00:58:47,920 --> 00:58:50,630

UP INTO THE HIGH HUNDREDS OF THOUSANDS OR MILLIONS OF

1321

00:58:50,630 --> 00:58:57,180

DOLLARS OF DIFFERENT OF LIFETIME EARNINGS.

SO THIS IS A PRETTY SIGNIFICANT DIFFERENCE

1322

00:58:57,180 --> 00:59:01,319

IN TREATMENT

OF JENNIFER AND JOHN.

1323

00:59:01,319 --> 00:59:04,720

INTERESTINGLY, THE GENDER OF THE FACULTY DID NOT

1324

00:59:04,720 --> 00:59:07,640

MATTER.

AND THIS IS CONSISTENT WITH ALL THE STUDIES

1325

00:59:07,640 --> 00:59:12,499

PREVIOUSLY

ON HIRING AND EVALUATION OF ANY WOMEN'S HEIGHTS

1326

00:59:12,499 --> 00:59:15,940

AND

MANY WOMEN WRITING ABILITY.

1327

00:59:15,940 --> 00:59:19,619

IT DOES NOT MATTER WHETHER YOU ARE FROM ONE
GROUP OR

1328

00:59:19,619 --> 00:59:25,170

THE OTHER, THIS EXTENDS AS WELL TO RAISE.
THE PREJUDICES AND THE IMPLICIT I – BIAS

1329

00:59:25,170 --> 00:59:28,609

YOU SEEM TO BE

THE SAME WHEN THEY COME FROM THE UNCONSCIOUS

1330

00:59:28,609 --> 00:59:33,999

MIND.

JENNIFER AND JOHN WERE EVALUATED ACCORDING

1331

00:59:33,999 --> 00:59:38,650

TO THEIR

GENDER AND NOT THEIR QUALITIES AND JOHN WINS

1332

00:59:38,650 --> 00:59:43,070

OUT ON

JUST ABOUT EVERY FRONT EXCEPT LIKABILITY.

1333

00:59:43,070 --> 00:59:50,339

SO THIS IS AMONG FACULTY.

THIS IS AMONG FACULTY IN THE SCIENCES, IN

1334

00:59:50,339 --> 00:59:53,029

BIOLOGY,

CHEMISTRY AND PHYSICS DEPARTMENTS.

1335

00:59:53,029 --> 00:59:58,829

IT DOESN'T CHANGE WITH THE RANK OF THE FACULTY.
SO THAT SUGGESTS THAT PEOPLE ARE NOT JUST

1336

00:59:58,829 --> 01:00:01,259

CHANGING
BECAUSE THE NUMBERS ARE CHANGING.

1337

01:00:01,259 --> 01:00:09,479

IT ALSO DOESN'T CHANGE WITH THE FIELD.
BIOLOGY HAS BEEN GRADUATING 50 PERCENT WOMEN

1338

01:00:09,479 --> 01:00:13,220

UNDERGRADUATES FOR DECADES AND YET, BIOLOGISTS
WERE NO

1339

01:00:13,220 --> 01:00:18,170

MORE LIKELY TO HIRE JENNIFER THEN THE PHYSICISTS
OR

1340

01:00:18,170 --> 01:00:19,359

CHEMISTS.

1341

01:00:19,359 --> 01:00:23,470

SO THAT SAYS THAT THESE BIASES ARE VERY WELL
INGRAINED.

1342

01:00:23,470 --> 01:00:27,499

THEY ARE NOT INFLUENCED WHAT WE SEE AROUND
US ON A

1343

01:00:27,499 --> 01:00:35,460

DAILY BASIS IN OUR ADULT LIVES AS PROFESSIONALS.
AND THEY ARE NOT LIKELY TO CHANGE UNLESS WE

1344

01:00:35,460 --> 01:00:37,510

DO
SOMETHING TO INTERVENE.

1345

01:00:37,510 --> 01:00:42,769

SO, THE QUESTION IS WHAT DO WE DO ABOUT THESE BIASES?

1346

01:00:42,769 --> 01:00:45,390

THESE ARE NOT THE ONLY BIASES THAT WE HAVE TO WORRY

1347

01:00:45,390 --> 01:00:49,329

ABOUT.
THE BIASES COME UP IN THE AREAS OTHER THAN

1348

01:00:49,329 --> 01:00:51,630

HIRING.
A COUPLE OF STUDIES THAT HAVE COME OUT IN

1349

01:00:51,630 --> 01:00:54,400

THE LAST
COUPLE OF YEARS I FIND PARTICULARLY FASCINATING.

1350

01:00:54,400 --> 01:00:58,989

THE FIRST ONE WAS BY CATHERINE MILLMAN'S GROUP AT THE

1351

01:00:58,989 --> 01:01:01,980

UNIVERSITY OF PENNSYLVANIA WITH A LOOK AT FACULTY'S

1352

01:01:01,980 --> 01:01:04,661

RESPONSE TO EMAILS WITH THE ONLY DIFFERENCE ON THE

1353

01:01:04,661 --> 01:01:08,910

EMAIL BEING THE NAME.
THEY USED CLASSIC ASIAN NAMES, CLASSICALLY

1354

01:01:08,910 --> 01:01:15,829

AFRICAN-AMERICAN, HISPANIC OR AVERAGE WHITE NAMES.

1355

01:01:15,829 --> 01:01:21,630
AND WITH APPROACHES TO 6500 FACULTY ACROSS
THE COUNTRY,

1356
01:01:21,630 --> 01:01:25,490
THEY ASKED SIMPLE QUESTIONS LIKE – ONE QUESTION:
WOULD

1357
01:01:25,490 --> 01:01:31,960
YOU MEET WITH ME TO DISCUSS A RESEARCH PROJECT?
AND OVERALL, SHOULD SAY WE SHOULD ALL BE EMBARRASSED

1358
01:01:31,960 --> 01:01:35,759
THAT THE OVERALL RATE OF RESPONSE WAS PRETTY
LOW TO ALL

1359
01:01:35,759 --> 01:01:39,569
STUDENTS.
BUT IT WAS MUCH LOWER WITH MINORITIES AND

1360
01:01:39,569 --> 01:01:43,150
WOMEN.
SO THIS IS ASKING FOR 10 MINUTES OF A FACULTY

1361
01:01:43,150 --> 01:01:47,599
MEMBER'S
TIME AND THE RESPONSE RATE, NOT EVEN ASKING

1362
01:01:47,599 --> 01:01:50,099
TO GET A
POSITIVE RESPONSE, JUST GETTING A RESPONSE

1363
01:01:50,099 --> 01:01:55,339
AT ALL, WAS
AFFECTED BY THE STUDENT'S GENDER AND THEIR

1364
01:01:55,339 --> 01:01:57,440
RACE OR
ETHNIC CITY.

1365

01:01:57,440 --> 01:02:00,920
ANOTHER STUDY LOOKED AT THE BIOMEDICAL FACULTY
AND THEY

1366
01:02:00,920 --> 01:02:05,739
LOOK AT THE COMPOSITION OF LABS THAT WERE
RUN BY THESE

1367
01:02:05,739 --> 01:02:10,130
FACULTY IN THEY CALLED – THE THAT THEY FOCUSED
ON, THE

1368
01:02:10,130 --> 01:02:14,910
ELITE FACULTY.
THESE ARE WINNERS UP NOBEL PRIZE, MY INVESTIGATORS

1369
01:02:14,910 --> 01:02:17,529
AND
MEMBERS OF NATIONAL ACADEMY OF SCIENCES AND

1370
01:02:17,529 --> 01:02:19,289
A FEW OTHER
MAJOR HONORS.

1371
01:02:19,289 --> 01:02:23,519
AND AMONG THIS GROUP, THEY FOUND THAT THE
FREQUENT

1372
01:02:23,519 --> 01:02:27,420
CIVIL WOMEN GRADUATE STUDENTS IN THOSE LABS
OR WOMEN

1373
01:02:27,420 --> 01:02:35,769
LAB MEMBERS WAS A LOWERS AMONG THE MEN.
AND SO THIS WAS SICK IF IT CAN BECAUSE THE

1374
01:02:35,769 --> 01:02:40,309
WOMEN ELITE
LABS OR THE ELITE LABS RUN BY WOMEN HAD 50-50

1375

01:02:40,309 --> 01:02:41,680

MANY
WOMEN.

1376

01:02:41,680 --> 01:02:45,660

BUT THE ELITE LABS RUN BY MEN HAD A LOWER
FREQUENCY OF

1377

01:02:45,660 --> 01:02:50,549

WOMEN.
THIS MATTERS BECAUSE THEY ALSO FOUND THAT

1378

01:02:50,549 --> 01:02:54,890

THE MAJORITY
OF OUR ASSISTANT PROFESSORS COME FROM ABOUT

1379

01:02:54,890 --> 01:02:56,979

FIVE
PERCENT OF OUR LABS.

1380

01:02:56,979 --> 01:03:00,859

BY MY CALCULATION LOOK LIKE OR THAT 50 PERCENT
OF OUR

1381

01:03:00,859 --> 01:03:03,969

ASSISTANT PROFESSORS ARE HIRED OUT OF ABOUT
FIVE

1382

01:03:03,969 --> 01:03:08,910

PERCENT OF THE LABS IN THIS COUNTRY.
AND, OF COURSE, THOSE TEND TO BE THE ELITE

1383

01:03:08,910 --> 01:03:12,529

LABS.
THAT SAYS TO BECOME AN ASSISTANT PROFESSOR

1384

01:03:12,529 --> 01:03:16,849

IN THIS
COUNTRY, YOU HAVE TO GO TO THIS SET OF OF

1385

01:03:16,849 --> 01:03:21,119
BEING VERY
LIKELY IN AN ELITE LAB THAT AUTOMATICALLY,

1386
01:03:21,119 --> 01:03:26,700
ON AVERAGE,
HAS FEWER WOMEN THAN OTHER LABS.

1387
01:03:26,700 --> 01:03:30,369
SO THAT SAYS THAT WE HAVE A REAL PROBLEM WITH
THE

1388
01:03:30,369 --> 01:03:34,269
BOTTLENECK THAT WE CREATE OF GRADUATE TRAINING
IN OUR

1389
01:03:34,269 --> 01:03:37,420
ELITE LABS THAT ARE TRAINING MOST OF OUR FACULTY
FOR

1390
01:03:37,420 --> 01:03:42,539
THE NEXT GENERATION.
AND WE NEED TO LOOK AT THAT VERY CAREFULLY.

1391
01:03:42,539 --> 01:03:46,569
I THINK THE STATISTICS IN THE RESEARCH THAT
I DESCRIBED

1392
01:03:46,569 --> 01:03:48,979
ARE PARTICULARLY FRIGHTENING BECAUSE OF THE
NUMBER OF

1393
01:03:48,979 --> 01:03:55,509
INTERACTIONS ARE FACULTY HAVE WITH OUR STUDENTS.
JUST TO NAME A FEW THAT MAKE OUR FACULTY DATE

1394
01:03:55,509 --> 01:03:59,519
KEEPERS
OF STEM EDUCATION AND STEM CAREERS.

1395

01:03:59,519 --> 01:04:04,680
OBVIOUSLY, THEY OFFER ADVISING.
MOST OF THE ADVISORS IN OUR UNIVERSITIES ARE

1396
01:04:04,680 --> 01:04:09,019
FACULTY.
THEY ALSO PROVIDE INFORMAL ACCESS TO OPPORTUNITY.

1397
01:04:09,019 --> 01:04:12,520
IF THEY'RE GOING TO RECOMMEND A STUDENT TO
ANOTHER LAB,

1398
01:04:12,520 --> 01:04:17,710
WILL THEY RECOMMEND A MALE OR FEMALE OR AN
AFRICAN-AMERICAN OR A WHITE STUDENT WITH THE

1399
01:04:17,710 --> 01:04:21,829
SAME
FREQUENCY IF THE STUDENTS HAVE THE SAME CONFIDENCE?

1400
01:04:21,829 --> 01:04:24,819
I THINK THEY ON THE RESEARCH, WE CAN ASSUME
NO.

1401
01:04:24,819 --> 01:04:30,690
I THINK THAT IS A PRETTY, ON AVERAGE, RELIABLE
ASSUMPTION.

1402
01:04:30,690 --> 01:04:34,670
STUDENTS ALSO RELY ON FACULTY OR ANY EXPERTS
IN THEIR

1403
01:04:34,670 --> 01:04:38,660
FIELD OR ANYBODY IN A MORE ADVANCED STAGE
IN THE FIELD

1404
01:04:38,660 --> 01:04:43,210
FOR ADVICE, BUT ALSO FOR AN EVALUATION OF
THE STUDENTS

1405

01:04:43,210 --> 01:04:48,819
OWN QUALITIES AND STRENGTHS.
THAT IS HOW THEY GET THEIR GAUGE OF HOW GOOD

1406
01:04:48,819 --> 01:04:50,460
THEY ARE
IN A FIELD.

1407
01:04:50,460 --> 01:04:53,420
AND IF STUDENTS ARE NEVER TOLD WHAT THEY ARE
GOOD AT

1408
01:04:53,420 --> 01:04:55,230
WHAT THEY ARE NOT GOOD AT OR WHERE THEY NEED
TO

1409
01:04:55,230 --> 01:04:58,599
IMPROVE, IS DIFFICULT FOR THEM TO FIGURE THAT
OUT ON

1410
01:04:58,599 --> 01:05:02,070
THEIR OWN.
AND THE EVIDENCE IS THAT MALE STUDENTS ARE

1411
01:05:02,070 --> 01:05:06,339
BEING TOLD
ON A MORE REGULAR BASIS OR POSITIVE THINGS

1412
01:05:06,339 --> 01:05:07,710
ABOUT THEIR
OWN ABILITIES.

1413
01:05:07,710 --> 01:05:11,749
THAT'S REINFORCING THEIR ABILITY TO THEN PURSUE
THOSE

1414
01:05:11,749 --> 01:05:16,400
CAREER PATHS.
THE OTHER THING THAT OUR FACULTY PROVIDES

1415

01:05:16,400 --> 01:05:18,019

IS A VISION
OF THE FUTURE.

1416

01:05:18,019 --> 01:05:21,369

NOT ONLY ARE THEY A ROLE MODEL THAT A STUDENT
HAD

1417

01:05:21,369 --> 01:05:24,390

IMAGINE FOLLOWING THE FOOTSTEPS OF, BUT THEY
ALSO

1418

01:05:24,390 --> 01:05:29,690

SUGGEST CAREER DIRECTIONS.
ARE THEY SUGGESTING THE MOST AMBITIOUS CAREERS

1419

01:05:29,690 --> 01:05:32,210

FOR OUR
MINORITIES IN OUR WOMEN?

1420

01:05:32,210 --> 01:05:35,250

I THINK ON AVERAGE WE COULD GUESS PROBABLY
NOT.

1421

01:05:35,250 --> 01:05:38,910

THEY ARE PROBABLY OFFERING SUGGESTIONS OF
PROFESSIONAL

1422

01:05:38,910 --> 01:05:42,420

PADS THAT ARE JUST A LITTLE BIT LOWER, LESS
AMBITIOUS

1423

01:05:42,420 --> 01:05:45,539

TO WOMEN AND MINORITY THEN TO WHITE MEN OF
THE SAME

1424

01:05:45,539 --> 01:05:50,809

SKILLS AND QUALITIES.
THE LAST KIND OF BIAS THAT I WANT TO MENTION

1425

01:05:50,809 --> 01:05:55,450
ARE THE
BARRIERS THAT OCCUR THE COUSIN OF OLD BIASES

1426
01:05:55,450 --> 01:05:58,970
THAT
HAPPEN PROBABLY MANY DECADES AGO OR EVEN CENTURIES

1427
01:05:58,970 --> 01:06:02,839
AGO
THAT CREATE STRUCTURAL BARRIERS TO SUCCESS

1428
01:06:02,839 --> 01:06:05,430
IN OUR
UNIVERSITY SYSTEM.

1429
01:06:05,430 --> 01:06:09,030
AND THOSE INCLUDE OFTEN GENDER BIAS BECAUSE,
OF COURSE,

1430
01:06:09,030 --> 01:06:13,660
OUR UNIVERSITIES WERE STARTED BY – FOR THE
MOST PART –

1431
01:06:13,660 --> 01:06:19,180
WHITE MEN.
THE SYSTEM WAS BUILT WITH A CERTAIN LACK OF

1432
01:06:19,180 --> 01:06:24,359
ATTENTION
TO THINGS LIKE WORKLIFE BALANCE OR CHILDCARE

1433
01:06:24,359 --> 01:06:28,849
OR SOME OF
THE – THE ENTIRE LIFECYCLE THAT WOMEN HAVE

1434
01:06:28,849 --> 01:06:33,039
THAT MAN
DON'T SHARE OR GO THROUGH A VERY DIFFERENT

1435

01:06:33,039 --> 01:06:34,480
LIFE CYCLE.

1436
01:06:34,480 --> 01:06:38,079
AND SO, WE NEED TO BE THINKING VERY CAREFULLY
ABOUT HOW

1437
01:06:38,079 --> 01:06:42,269
WE STRUCTURE OUR INSTITUTIONS, OUR TENURE
GAME.

1438
01:06:42,269 --> 01:06:49,390
HOW WE OFFER CHILDCARE, WHERE WE OFFER CHILDCARE.
THE TENURE CLOCK EXTENSION AND WHAT KIND OF

1439
01:06:49,390 --> 01:06:50,719
STIGMA
THERE IS.

1440
01:06:50,719 --> 01:06:53,359
MANY UNIVERSITIES HAVE THESE BUT THE FACULTY
WON'T USE

1441
01:06:53,359 --> 01:06:56,519
THEM BECAUSE THERE'S A STICK ASSOCIATED WITH
THEM.

1442
01:06:56,519 --> 01:07:00,500
SO HOW DO WE TREAT PEOPLE WHO WANT TO ENGAGE
IN A

1443
01:07:00,500 --> 01:07:04,599
FAMILY LIFE OR SOME LIFE OUTSIDE OF WORK,
ELDER CARE

1444
01:07:04,599 --> 01:07:11,229
FOR EXAMPLE, AS WELL AS A SCIENTIFIC CAREER?
AND THEN FINALLY, WHAT ARE THE IMAGES THAT

1445
01:07:11,229 --> 01:07:14,479

WE POST
AROUND THE INSTITUTIONS OF LEARNING.

1446

01:07:14,479 --> 01:07:18,700

I I URGE YOU TO GO BACK TO THE INSTITUTIONS
AND LOOK AT

1447

01:07:18,700 --> 01:07:22,559

THE FACES THAT YOU SEE A FORMER DEPARTMENT
CHAIRS OR

1448

01:07:22,559 --> 01:07:27,160

LUMINARIES IN THE FIELD AND NOTICE HOW MANY
WOMEN AND

1449

01:07:27,160 --> 01:07:34,359

MINORITIES ARE LACKING FROM THOSE IMAGES.
AND THAT LEADS ME TO MY LAST TWO POINTS WHICH

1450

01:07:34,359 --> 01:07:38,569

ARE ON
THE MITIGATION OF BIAS AND WHAT WE CAN DO

1451

01:07:38,569 --> 01:07:44,490

ABOUT IT.
SO BRIEFLY, WE ARE IN PROGRESS RIGHT NOW THAT

1452

01:07:44,490 --> 01:07:47,769

WE ARE
WORKING ON A REPORT FROM OS CP IN THE OFFICE

1453

01:07:47,769 --> 01:07:52,229

OF
PERSONNEL MANAGEMENT ON A REPORT ON MITIGATING

1454

01:07:52,229 --> 01:07:59,089

IMPLICIT
BIAS IN STEM FIELDS.

1455

01:07:59,089 --> 01:08:03,739

THAT REPORT HAS BEEN PREPARED BY – ABOUT
20 OF OUR

1456

01:08:03,739 --> 01:08:08,450

AGENCIES THAT ARE ENGAGED IN STEM FUNDING
AND WE HOPE

1457

01:08:08,450 --> 01:08:11,450

TO HAVE THAT OUT IN THE NEXT MONTH OR TWO
AND

1458

01:08:11,450 --> 01:08:13,880

HOPEFULLY, THAT WILL GIVE GUIDANCE, NOT ONLY
TO OUR

1459

01:08:13,880 --> 01:08:18,460

FEDERAL AGENCIES, BUT ALSO TO OUR UNIVERSITIES
AND

1460

01:08:18,460 --> 01:08:22,370

INDUSTRY ABOUT HOW TO REDUCE THE IMPACTS OF
VIRUS IN

1461

01:08:22,370 --> 01:08:27,390

OUR WORKFORCE TO INCREASE THE EQUITY IN OUR
WORKFORCE.

1462

01:08:27,390 --> 01:08:32,040

THE SECOND AREA THAT OS CP IS WORKING ON IS
ON THE PASS

1463

01:08:32,040 --> 01:08:35,560

MEDIA AND HOW WE CAN USE THE MASS MEDIA TO
CHANGE

1464

01:08:35,560 --> 01:08:39,510

ATTITUDES ABOUT STEM BEFORE THEY ARE SOLIDIFIED
AND

1465

01:08:39,510 --> 01:08:44,510

BEFORE STUDENTS REACH THE COLLEGE LEVEL WHERE
IT IS

1466

01:08:44,510 --> 01:08:50,080

HARD TO REVERSE SOME OF THE ATTITUDES.
AND SO, WE HAVE BEEN WORKING WITH WRITERS

1467

01:08:50,080 --> 01:08:55,370

AND PRODUCERS
AND EXECUTIVES IN THE FILM INDUSTRY AND TV

1468

01:08:55,370 --> 01:08:58,140

TO TALK
ABOUT WHAT KINDS OF DEPICTION THEY COULD BE

1469

01:08:58,140 --> 01:09:02,330

OFFERING
THE PUBLIC ABOUT SCIENCE AND SCIENTISTS.

1470

01:09:02,330 --> 01:09:07,390

AND I THINK IF YOU LOOK ACROSS JUST A RANDOM
COLLECTION

1471

01:09:07,390 --> 01:09:14,570

OF IMAGES OF WHAT SCIENTISTS LOOK LIKE.
IF YOU GOOGLE STEM IN THE MEDIA, YOU WILL

1472

01:09:14,570 --> 01:09:17,590

FIND – YOU
FIND PEOPLE BLOWING THINGS UP.

1473

01:09:17,590 --> 01:09:23,020

BUT ALSO NOTICE THAT YOU FIND MOSTLY WHITE
PEOPLE AND

1474

01:09:23,020 --> 01:09:29,720

MOSTLY MEN.
AND IF YOU ASK A FOURTH GRADER TO DRAW A SCIENTIST,

1475

01:09:29,720 --> 01:09:33,180

THEY
WILL DRAW A WHITE AND WITH A BEARD AND A BALD

1476
01:09:33,180 --> 01:09:36,570
HEAD AND
GLASSES, USUALLY WEARING A LAB COAT AND SOMETIME

1477
01:09:36,570 --> 01:09:40,060
HOLDING A TEST TO WHICH IS EXACTLY THE SAME
IMAGE WHEN

1478
01:09:40,060 --> 01:09:42,690
THEY DREW WHEN MARGARET MEAD DID THAT EXPERIMENT
FOR

1479
01:09:42,690 --> 01:09:47,530
THE FIRST TIME IN 1953 ASKING CHILDREN TO
DRY

1480
01:09:47,530 --> 01:09:51,300
SCIENTIST.
BUT IF YOU GET STUDENTS ENGAGED IN DOING SCIENCE,

1481
01:09:51,300 --> 01:09:53,640
WHO
WILL THEY DRAW A SCIENTIST?

1482
01:09:53,640 --> 01:09:57,640
THEMSELVES.
SO WE HAVE AN EASY FIX THEY'RE IN THAT GOES

1483
01:09:57,640 --> 01:10:01,990
BACK TO THE
EDUCATIONAL SYSTEM, BUT WE ALSO HAVE THE TOOLS

1484
01:10:01,990 --> 01:10:07,110
OF THE
MASS MEDIA TO CHANGE SOME OF THOSE IMAGES.

1485
01:10:07,110 --> 01:10:09,850

ONE OF THE CRIMES OF THE MASS MEDIA HAS BEEN
THE

1486
01:10:09,850 --> 01:10:13,480
OMISSION OF SOME OF THE GREAT WOMEN AND MINORITIES
FROM

1487
01:10:13,480 --> 01:10:16,740
HISTORY.
AND WHEN YOU ASK PEOPLE ABOUT WHY THERE ARE

1488
01:10:16,740 --> 01:10:20,530
NOT OR
IMMINENT MINORITIES IN THE MASS MEDIA THEY'LL

1489
01:10:20,530 --> 01:10:24,170
OFTEN SAY
THAT THERE HAVEN'T BEEN THAT MANY GREAT STORIES.

1490
01:10:24,170 --> 01:10:29,270
AND I THINK WE'RE STARTING TO SEE THAT CHANGE.
AND ONE FIGURE THAT I WOULD LIKE TO MENTION

1491
01:10:29,270 --> 01:10:32,000
PARTICULARLY BECAUSE WE ARE HERE AT NASA SHE
WAS SO

1492
01:10:32,000 --> 01:10:39,540
IMPORTANT TO NASA'S SUCCESSES CATHERINE JOHNSON.
SHE WAS A GREAT FEMALE BLACK MATHEMATICIAN

1493
01:10:39,540 --> 01:10:41,880
IN THE 50S
AND 60S.

1494
01:10:41,880 --> 01:10:44,860
LAST YEAR PRESIDENT OBAMA AWARDED HER THE
MEDAL OF

1495
01:10:44,860 --> 01:10:49,560

FREEDOM.
THIS MONTH SHE CELEBRATES HER 98TH BIRTHDAY

1496
01:10:49,560 --> 01:10:54,830
AND IS IN
EXCELLENT HEALTH AND HAS A SHARP MIND TO THIS

1497
01:10:54,830 --> 01:10:57,640
DAY.
CATHERINE IS KNOWN FOR THE GREAT WORK THAT

1498
01:10:57,640 --> 01:11:01,140
SHE DID THAT
LAUNCHED SOME OF THE EARLY SPACE MISSIONS

1499
01:11:01,140 --> 01:11:05,440
AND IT SAID
THAT JOHN GLENN WOULD GO INTO SPACE UNTIL

1500
01:11:05,440 --> 01:11:06,440
CATHERINE, AS

1501
01:11:06,440 --> 01:11:12,110
HE CALLED HER, HAD CHECKED THE MATH.
I THINK THAT HOW THE STORY THAT MOST OF US

1502
01:11:12,110 --> 01:11:16,520
DID IN HERE.
I GREW UP WITH ALL OF THE IMAGES AND THE POST

1503
01:11:16,520 --> 01:11:20,830
BUTTON
AIR AND THE GREATNESS OF NASA AND THE GREAT

1504
01:11:20,830 --> 01:11:25,100
SCIENTISTS
AND I NEVER ONCE HEARD A WOMAN UNTIL I HEARD

1505
01:11:25,100 --> 01:11:29,210
ABOUT A

JAMISON AND SALLY RIDE MANY YEARS LATER AS

1506

01:11:29,210 --> 01:11:33,470

AN ADULT.

SO I THINK WE NEED TO BE THINKING CAREFULLY

1507

01:11:33,470 --> 01:11:36,080

ABOUT WHAT

HISTORY WE ARE TELLING.

1508

01:11:36,080 --> 01:11:41,520

AND THAT MESSAGE HAS BEEN HEARD BY HOLLYWOOD

AND THERE

1509

01:11:41,520 --> 01:11:48,560

IS A FILM IN PRODUCTION.

ONE OF MY STAFF WENT DOWN TO ATLANTA TO THE

1510

01:11:48,560 --> 01:11:49,560

PLACE THEY

ARE FILMING.

1511

01:11:49,560 --> 01:11:55,410

I THINK THEY ARE JUST ABOUT DONE NOW.

THEY HAVE THE VERY FAMOUS ACTRESS PLAYING

1512

01:11:55,410 --> 01:11:58,460

CATHERINE

JOHNSON IN A FILM CALLED FIGURES.

1513

01:11:58,460 --> 01:12:03,890

WE ARE LOOKING FORWARD TO SEEING THAT REPRESENTATION

OF

1514

01:12:03,890 --> 01:12:11,600

SOME GREAT WOMEN AND PARTICULARLY, BLACK WOMEN

CONTRIBUTING TO THE EARLY DAYS OF NASA'S STEM

1515

01:12:11,600 --> 01:12:15,500

PROGRAM.

WE'VE BEEN WORKING WITH THE ENTERTAINMENT

1516

01:12:15,500 --> 01:12:18,330

INDUSTRY.

I SHOULD SAY WE ARE NOT RESPONSIBLE FOR THAT

1517

01:12:18,330 --> 01:12:20,010

CATHERINE

JOHNSON DEPICTION.

1518

01:12:20,010 --> 01:12:25,150

THEY CAME UP WITH THAT ON THEIR OWN.

BUT WE'RE HOPING TO HAVE A LITTLE BIT OF INFLUENCE

1519

01:12:25,150 --> 01:12:28,920

ON

SOME OF THE OTHERS BECAUSE HOLLYWOOD IS SO

1520

01:12:28,920 --> 01:12:32,750

POWERFUL IN

THE IMAGES THAT WE ALL SEE AND THE IMAGES

1521

01:12:32,750 --> 01:12:36,500

THAT LIVE

WITH US OF WHO CAN DO CERTAIN JOBS, WHO CAN

1522

01:12:36,500 --> 01:12:40,540

BE THE

HEROES OF THE SPACE PROGRAM OF THE LABORATORIES,

1523

01:12:40,540 --> 01:12:43,780

OF THE

FIELDS OF ALL OF STEM.

1524

01:12:43,780 --> 01:12:47,910

WE'VE BEEN TALKING WITH WRITERS, PRODUCERS,

AND THERE'S

1525

01:12:47,910 --> 01:12:52,810

AND WE HAVE BEGUN TO SEE SOME VERY EXCITING

RESULTS

1526

01:12:52,810 --> 01:12:56,890

FROM THOSE CONVERSATIONS.

IT TURNS OUT THAT HOLLYWOOD IS VERY INTERESTED

1527

01:12:56,890 --> 01:12:58,600

IN THIS.

THEY JUST NEVER HEARD ABOUT IT.

1528

01:12:58,600 --> 01:13:01,870

SO THE CONVERSATION HAS BEEN AN EASY ONE TO
HAVE.

1529

01:13:01,870 --> 01:13:06,710

THEY ARE INTERESTED IN NEW STORYLINES.

THEY ARE INTERESTED IN THE EXCITEMENT OF STEM.

1530

01:13:06,710 --> 01:13:09,370

THEY FEEL THAT THEY JUST DON'T KNOW ENOUGH
AND THAT WE

1531

01:13:09,370 --> 01:13:13,171

CAN HELP THEM TO THE RESOURCES TO LEARN ABOUT
THE GREAT

1532

01:13:13,171 --> 01:13:17,160

FIGURES IN STEM OR HELP THEM EVEN DEVELOP
FICTIONAL

1533

01:13:17,160 --> 01:13:21,050

FIGURES IN STEM.

WE'VE ALSO BEGUN TALKING TO THE ADVERTISING

1534

01:13:21,050 --> 01:13:23,680

COMMUNITY

AND WE HAVE HAD AN AMAZING SUCCESS.

1535

01:13:23,680 --> 01:13:27,220

THERE'S A TYPO.

IT SHOULD BE A'S THE.

1536

01:13:27,220 --> 01:13:30,030

THE ALLIANCE FOR FAMILY AND ENTERTAINMENT
IS A VERY

1537

01:13:30,030 --> 01:13:32,990

POWERFUL GROUP THAT'S PART OF THE NATIONAL
ADVERTISERS

1538

01:13:32,990 --> 01:13:38,660

ASSOCIATION.
THE NATIONAL ADVERTISERS REPRESENT 85 PERCENT

1539

01:13:38,660 --> 01:13:41,490

OF THE
ADVERTISING ON TELEVISION.

1540

01:13:41,490 --> 01:13:44,430

THEY HAVE MADE A PLEDGE TO CHANGE THE DEPICTION
OF

1541

01:13:44,430 --> 01:13:48,280

WOMEN AND REDUCE THE RECTIFICATION AND EMIGRATION
OF

1542

01:13:48,280 --> 01:13:54,800

WOMEN IN ALL OF THEIR AD.
THEY HAVE MADE THAT PLEDGE ACROSS THE AD INDUSTRY,

1543

01:13:54,800 --> 01:13:57,280

BUT
MORE THAN THAT, THEY HAVE MADE THAT PLEDGE

1544

01:13:57,280 --> 01:14:03,270

TO PRESSURE
THE CONTENT, THE PROGRAMMING, TO CHANGE – TO

1545

01:14:03,270 --> 01:14:06,490

PRESENT

WOMEN IN A MORE POSITIVE LIGHT.

1546

01:14:06,490 --> 01:14:10,830

PART OF THAT THEY HAVE AGREED WILL BE TO PRESENT
WOMEN

1547

01:14:10,830 --> 01:14:17,450

IN STEM AND MORE DIVERSE FIGURES IN STEM GENERALLY.
AND WE THINK THIS IS A TREMENDOUS RESPONSE

1548

01:14:17,450 --> 01:14:19,340

THAT THEY
HAVE HAD.

1549

01:14:19,340 --> 01:14:22,700

WE'VE ARTIE BEGUN TO SEE A LITTLE BIT OF THE
EFFECT.

1550

01:14:22,700 --> 01:14:26,410

THERE WAS A MEETING RECENTLY IN WHICH THEY
ACTUALLY

1551

01:14:26,410 --> 01:14:29,330

RAISED THIS ISSUE WITH SOME OF THEIR PROGRAMMERS
FROM

1552

01:14:29,330 --> 01:14:33,550

SOME OF THE MAJOR NETWORKS.
THEY HEARD A STORY LINE THAT HAD A SOMEWHAT

1553

01:14:33,550 --> 01:14:37,710

SEXIST
QUALITY ABOUT THE STEM ASPECT, THEY RAISED

1554

01:14:37,710 --> 01:14:42,150

IT AND WE
HOPE THAT THAT NETWORK WILL GO BACK AND CHANGE

1555

01:14:42,150 --> 01:14:43,330

THEIR

STORYLINE.

1556

01:14:43,330 --> 01:14:46,530

SO WE THINK THIS IS GOING TO BE A VERY POWERFUL
MOVE.

1557

01:14:46,530 --> 01:14:49,240

THE CONVERSATIONS ARE IMPORTANT AND I BRING
THIS UP

1558

01:14:49,240 --> 01:14:53,500

JUST BECAUSE I THINK EVERY ONE OF US CAN HAVE
AN IMPACT

1559

01:14:53,500 --> 01:14:59,300

ON THE COMMUNITY OF CREATORS.
AS DAVID SAID, BRING THOSE CREATORS INTO THE

1560

01:14:59,300 --> 01:15:02,920

STEM
COMMUNITY, AND INFLUENCE THEM IN COLLEGE SO

1561

01:15:02,920 --> 01:15:05,950

THAT
PERHAPS WHEN THEY GO OUT AND THEY BEGAN TO

1562

01:15:05,950 --> 01:15:09,300

WRITE ABOUT
THE WORLD AROUND THEM, THEY WILL THINK OF

1563

01:15:09,300 --> 01:15:10,440

WOMEN AND

1564

01:15:10,440 --> 01:15:16,280

MINORITIES AND STEM AS ONE OF THEIR IMAGES.
ONE THAT HAPPENED VERY RECENTLY THAT WE WERE

1565

01:15:16,280 --> 01:15:19,850

VERY
EXCITED ABOUT WAS THAT THE – WE HAD HAD

1566

01:15:19,850 --> 01:15:23,130

– OUR OFFICE
HAD HAD A CONVERSATION WITH THE PRODUCERS

1567

01:15:23,130 --> 01:15:27,840

OF LIKE FISH,
WHICH IS A VERY POPULAR TV SHOW, ABOUT A BLACK

1568

01:15:27,840 --> 01:15:30,640

FAMILY.
AND WE DON'T KNOW IF THERE IS A CONNECTION

1569

01:15:30,640 --> 01:15:33,710

BETWEEN OUR
CONVERSATION, BUT HERE HE SOON AFTER, THE

1570

01:15:33,710 --> 01:15:37,160

OLDEST GIRL
IN THE FAMILY AND HIGH SCHOOL REFERRED TO

1571

01:15:37,160 --> 01:15:41,310

HERSELF AS A
CHEMISTRY NERD AND STARTED CARRYING HER SAT

1572

01:15:41,310 --> 01:15:44,210

STUDY BOOK
AROUND WITH HER IN THE SHOW.

1573

01:15:44,210 --> 01:15:47,450

IT WAS ONE OF THOSE LITTLE, SUBTLE CHANGES
THAT HERE IS

1574

01:15:47,450 --> 01:15:51,970

THIS VERY EXCITING AND INTERESTING BEAUTIFUL
GIRL WHO

1575

01:15:51,970 --> 01:15:56,600

ASKED JUST LIKE A TEENAGER.
SHE'S TEXTING ALL THE TIME AND SHE HAD IDENTIFIED

1576

01:15:56,600 --> 01:15:58,880

AS A
CHEMISTRY NERD.

1577

01:15:58,880 --> 01:16:06,650

IN REAL LIFE, THE ACTRESS IS A SUPERB PETITION.
SHE TOLD ME RECENTLY THAT SHE WAS – THIS

1578

01:16:06,650 --> 01:16:10,080

PAST YEAR
DATING CALCULUS, BUT SHE DECIDED TO BREAK

1579

01:16:10,080 --> 01:16:13,830

UP WITH HIM
BECAUSE SHE WAS GOING TO MOVE ON TO STATISTICS.

1580

01:16:13,830 --> 01:16:16,810

[LAUGHTER] SO YOU CAN IMAGINE HOW DELIGHTED
SHE WAS

1581

01:16:16,810 --> 01:16:20,000

WHEN HER SCRIPT STARTED REFLECTING WHO SHE
WAS IN REAL

1582

01:16:20,000 --> 01:16:27,270

LIFE AS A REAL HIGH SCHOOL STUDENT.
THE INDUSTRY IS ALSO SUPPORTING THE DEVELOPMENT

1583

01:16:27,270 --> 01:16:31,330

OF A
DASHBOARD OR A SET OF METRICS TO EVALUATE

1584

01:16:31,330 --> 01:16:34,980

COMMERCIALS
AS WELL AS THE CONTENT OF SHOWS FOR THEIR

1585

01:16:34,980 --> 01:16:39,400

DEPICTION OF
WOMEN AND WOMEN IN STEM WILL BE PART OF THAT

1586
01:16:39,400 --> 01:16:43,490
AND
DIVERSITY OF WOMEN WILL BE PART OF THAT DASHBOARD.

1587
01:16:43,490 --> 01:16:47,310
SO WE'RE VERY EXCITED.
THEY'RE GOING TO START PUBLISHING THE RESULTS

1588
01:16:47,310 --> 01:16:50,251
OF THEIR
EVALUATION OF THEIR METRICS ABOUT ALL OF THE

1589
01:16:50,251 --> 01:16:54,620
NETWORKS,
ABOUT SHOWS, AND ABOUT ADS ON A WEEKLY BASIS.

1590
01:16:54,620 --> 01:16:59,100
SO THAT THE CREATORS CAN TRACK THEIR IMPROVEMENT
ABOUT

1591
01:16:59,100 --> 01:17:02,310
DEPICTING PEOPLE IN A MORE EQUITABLE WAY AND
A MORE

1592
01:17:02,310 --> 01:17:11,080
EXCITING WAY IN TERMS OF STEM IN THE MEDIA.
AND SO, WE KNOW THAT THIS WILL WORK BECAUSE

1593
01:17:11,080 --> 01:17:14,930
WE HAVE
SEEN THE MEDIA HAVE AN EFFECT ON MANY THINGS

1594
01:17:14,930 --> 01:17:17,030
IN AMERICA
AND OTHER COUNTRIES.

1595
01:17:17,030 --> 01:17:20,830
THERE ARE NUMEROUS EXAMPLES AND STUDIES THAT
SHOW THAT

1596

01:17:20,830 --> 01:17:24,020

THE CHANGING OF SOMETHING IN NETWORK TELEVISION
HAS

1597

01:17:24,020 --> 01:17:28,270

CHANGED BEHAVIOR IN THE PUBLIC.
MY FAVORITE EXAMPLE IS THE INTRODUCTION OF

1598

01:17:28,270 --> 01:17:32,130

THE CONCEPT
OF THE DESIGNATED DRIVER, WHICH WAS UNKNOWN

1599

01:17:32,130 --> 01:17:36,191

AND A
PROFESSOR AT HARVARD CAME BACK FROM A VISIT

1600

01:17:36,191 --> 01:17:39,060

TO THE
MEDICAL COMMUNITY IN SCANDINAVIA AND HAD LEARNED

1601

01:17:39,060 --> 01:17:40,810

ABOUT
THE DISCIK DRIVER CONCEPT.

1602

01:17:40,810 --> 01:17:48,640

HE SAID WE COULD BE SAVING LIVES.
SO WE WENT TO HOLLYWOOD AND HE GOT THEM TO

1603

01:17:48,640 --> 01:17:51,510

INTEGRATE
THE CONCEPT OF THE DISCIK AIDED DRIVER INTO

1604

01:17:51,510 --> 01:17:53,219

PRIME TIME
TELEVISION.

1605

01:17:53,219 --> 01:17:59,760

– DESIGNATED DRIVER – IT WENT TO 95 PERCENT
RECOGNITION.

1606

01:17:59,760 --> 01:18:05,240

THREE YEARS.

SO THAT IS THE KIND OF POWER THAT WE CAN SEE

1607

01:18:05,240 --> 01:18:09,490

THE MEDIA

HAVE AND THE INFLUENCE THAT THEY CAN HAVE

1608

01:18:09,490 --> 01:18:13,070

ON OUR

SOCIETY AROUND US.

1609

01:18:13,070 --> 01:18:15,950

SO THE PRESIDENTS IMAGE – AND I THINK THE

GOVERNMENTS

1610

01:18:15,950 --> 01:18:18,760

IMAGE – GENERALLY, IS OF A WORK FORCE THAT

IS

1611

01:18:18,760 --> 01:18:25,930

DEMOGRAPHICALLY DIVERSE, THAT INCLUDES PEOPLE

WHO ARE

1612

01:18:25,930 --> 01:18:30,130

INTERESTED IN WHATEVER FIELD THEY WANT TO

BE AND NOT

1613

01:18:30,130 --> 01:18:36,510

BASED ON THEIR GENDER OR THEIR RACIAL OR ETHNIC

ORIGINS.

1614

01:18:36,510 --> 01:18:40,240

AND THAT STEM IN PARTICULAR ATTRACTS PEOPLE

TASTE ON

1615

01:18:40,240 --> 01:18:44,730

THEIR SKILLS AND TALENTS AND INTERESTS AND

NOT BASED ON

1616

01:18:44,730 --> 01:18:47,680

WHO DID STEM IN PREVIOUS GENERATIONS AND WHAT
THE

1617

01:18:47,680 --> 01:18:53,760

IMAGES OF STEM WORKERS ARE.
AND SO, WE HOPE THAT THE ENTIRE COUNTRY WILL

1618

01:18:53,760 --> 01:18:57,390

BE
POPULATED BY A COMMUNITY THAT IS MORE INTERESTED

1619

01:18:57,390 --> 01:19:00,660

IN
STEM GENERALLY, TASTE ON SOME OF THE CHANGES

1620

01:19:00,660 --> 01:19:04,590

THAT WE
ARE MAKING AN K-12 AND IN COLLEGE, BUT ALSO,

1621

01:19:04,590 --> 01:19:07,520

IN CHANGES
WE'RE BEGINNING TO SEE THE MEDIA.

1622

01:19:07,520 --> 01:19:11,240

BUT IN PARTICULAR, THAT WE SEE MUCH MORE DIVERSE
AND

1623

01:19:11,240 --> 01:19:15,310

THEREFORE MORE ROBUST WORK FORCE WORKING ON
STEM AND

1624

01:19:15,310 --> 01:19:18,920

THE COMING DECADES.
WE DON'T HAVE TO WAIT FOR THE PREDICTIONS

1625

01:19:18,920 --> 01:19:24,680

THAT DAVID
MADE OF 2130 2C PARITY IN OUR WORKFORCE.

1626

01:19:24,680 --> 01:19:27,090

SO THANK YOU FOR ALL THE WORK THAT YOU DO
ON ALL OF

1627

01:19:27,090 --> 01:19:30,430

THIS AND I URGE YOU TO GO BACK AND DO EVEN
MORE TO

1628

01:19:30,430 --> 01:19:40,140

DIVERSIFY YOUR STEM WORKFORCE.
THANK YOU VERY MUCH.

1629

01:19:40,140 --> 01:19:45,360

[APPLAUSE].

>> THANK YOU SO MUCH, JO.

1630

01:19:45,360 --> 01:19:50,190

THOSE ARE THE FACTS AND GREAT INSPIRATION
FOR ALL OF

1631

01:19:50,190 --> 01:19:51,880

US.
WE ARE WORKING ON IT HARD.

1632

01:19:51,880 --> 01:19:57,170

GREAT SOLUTIONS THERE AND SO TO CONTINUE THE
CONVERSATION IT'S MY GREAT HONOR TO INTRODUCE

1633

01:19:57,170 --> 01:19:59,650

YOU TO
TINA CHEN – TINA TCHEN – ASSISTANT TO

1634

01:19:59,650 --> 01:20:11,300

THE PRESIDENT AND
SERVES THE FIRST LADY.

1635

01:20:11,300 --> 01:20:14,560

SHE'S THE PASTOR ACTOR OF THE WHITE HOUSE
OFFICE OF

1636

01:20:14,560 --> 01:20:18,300

PUBLIC ENGAGEMENT.

TINA WAS PREVIOUSLY A PARTNER IN CORPORATE

1637

01:20:18,300 --> 01:20:21,960

LITIGATION

AND IN THAT REALM, SHE REPRESENTED PUBLIC

1638

01:20:21,960 --> 01:20:25,610

AGENCIES IN

THE STATE AND FEDERAL CLASS-ACTION INCLUDING

1639

01:20:25,610 --> 01:20:28,670

ILLINOIS

DEPARTMENT OF CHILDREN AND FAMILY SERVICES,

1640

01:20:28,670 --> 01:20:30,780

THE

ILLINOIS DEPARTMENT OF PUBLIC AID, AND THE

1641

01:20:30,780 --> 01:20:32,460

CHICAGO

HOUSING AUTHORITY.

1642

01:20:32,460 --> 01:20:38,690

HUGE AUDACIOUS TASKS IN THEIR OWN RIGHT.

I'M SO GLAD TO HAVE HER IN WASHINGTON AND

1643

01:20:38,690 --> 01:20:41,640

REALLY IT'S

OUR PLEASURE TO INVITE HER AND WELCOME HER

1644

01:20:41,640 --> 01:20:44,520

TO NATIONAL

HEADQUARTERS WHICH IS A RECIPIENT OF MANY

1645

01:20:44,520 --> 01:20:47,210

AWARDS

INCLUDING LEADERSHIP AWARDS FROM THE WOMEN'S

1646

01:20:47,210 --> 01:20:50,310

BAR

ASSOCIATION OF ILLINOIS, MEN OF ACHIEVEMENT

1647

01:20:50,310 --> 01:20:55,191

AWARD, FROM

THE INTAKE INFORMATION LEAK AND SHE WAS A

1648

01:20:55,191 --> 01:20:57,320

CHICAGO

LAWYER, PERSON OF THE YEAR.

1649

01:20:57,320 --> 01:21:00,210

SO THE PERSON OF THE YEAR IS TO ASCEND US

A MESSAGE TO

1650

01:21:00,210 --> 01:21:02,480

THE WHITE HOUSE AND WELCOME YOU ALL, TINA

TCHEN, THANK

1651

01:21:02,480 --> 01:21:09,739

YOU FOR BEING WITH US.

[APPLAUSE]

1652

01:21:09,739 --> 01:21:13,180

>> THANK YOU DEPUTY ADMINISTRATOR NEWMAN AND

GOOD

1653

01:21:13,180 --> 01:21:17,030

MORNING.

I AM DELIGHTED TO BE HERE AT NASA HEADQUARTERS.

1654

01:21:17,030 --> 01:21:19,910

I HAVE TO PARTICULARLY THINK ADMINISTRATOR

CHARLIE

1655

01:21:19,910 --> 01:21:22,770

BOLDEN WHO HAS BEEN A GREAT PERSONAL FRIEND

AND GREAT

1656

01:21:22,770 --> 01:21:26,230

LEADER ON SCIENCE FOR NASA, BUT ESPECIALLY
ON THESE

1657

01:21:26,230 --> 01:21:28,640

ISSUES OF DIVERSITY AND INCLUSION THAT YOU'RE
TALKING

1658

01:21:28,640 --> 01:21:32,830

ABOUT TODAY.
AND ALSO, YOUR ASSOCIATED ADMINISTRATOR BRENDA

1659

01:21:32,830 --> 01:21:35,770

AND WELL
PUT THIS TOGETHER.

1660

01:21:35,770 --> 01:21:39,810

AND I ALSO WANT TO GIVE A PARTICULAR ACKNOWLEDGMENT
TO

1661

01:21:39,810 --> 01:21:43,030

OUR MEMBERS OF THE WHITE HOUSE COUNCIL ON
WOMEN AND

1662

01:21:43,030 --> 01:21:52,080

GIRLS FROM NASA.
AS DAVID TENSION, NASA HAS BEEN AN UZI ENTHUSIASTIC

1663

01:21:52,080 --> 01:21:58,050

PARTICIPANT.
CLARISSA CARNELL AND LISA GUERRA ARE NASA'S

1664

01:21:58,050 --> 01:22:01,980

REPRESENTATIVES.
YOU HAVE DONE AMAZING WORK ON THIS PARTICULAR

1665

01:22:01,980 --> 01:22:05,950

ISSUE, ON
THE INCLUSION OF WOMEN AND EXPANDING SINCE

1666

01:22:05,950 --> 01:22:08,470

THE FIRST
TERM AND THROUGHOUT.

1667

01:22:08,470 --> 01:22:12,630

RECENTLY, WE HAD OUR UNITED STATE OF WOMEN'S
SUMMIT IN

1668

01:22:12,630 --> 01:22:16,200

JUNE WITH 5000 WOMEN FROM ACROSS THE COUNTRY
AND AROUND

1669

01:22:16,200 --> 01:22:19,330

THE WORLD, ON ALL OF THE ISSUES CONCERNING
WOMEN AND

1670

01:22:19,330 --> 01:22:22,000

GIRLS.
IN PARTICULAR WE TALKED ABOUT EDUCATION AND

1671

01:22:22,000 --> 01:22:25,180

STEM AND
THE NEXT DAY WE ENCOURAGED AGENCIES TO DO

1672

01:22:25,180 --> 01:22:26,730

EVENTS THE
DAY AFTER.

1673

01:22:26,730 --> 01:22:29,730

AND YOU HERE AT NASA DID ENGAGING WOMEN AND
GIRLS IN

1674

01:22:29,730 --> 01:22:34,270

STEM THROUGH DATA SCIENCE.
YOU HAD 200 FOLKS HERE THE DAY AFTER THE UNITED

1675

01:22:34,270 --> 01:22:35,270

STATE
OF WOMEN.

1676

01:22:35,270 --> 01:22:37,620

THAT'S IN ADDITION TO THE MENTORING PROGRAM
THAT YOU

1677

01:22:37,620 --> 01:22:44,200

HAVE DONE FOR NASA GIRLS.
AND YOUR NASA SCIENCE FOR GIRLS PROGRAM.

1678

01:22:44,200 --> 01:22:48,650

THAT YOU DO WITH LIBRARIES AND FAMILIES.
SO I WANT TO – IT'S A GREAT OCCASION FOR

1679

01:22:48,650 --> 01:22:52,330

ME TO THANK
YOU FOR THE LEADERSHIP AND THE WORK THAT NASA

1680

01:22:52,330 --> 01:22:53,460

HAS SHOWN
THROUGHOUT.

1681

01:22:53,460 --> 01:22:56,190

I BRING YOU GREETINGS FROM THE PRESIDENT AND
FIRST

1682

01:22:56,190 --> 01:22:59,180

LADY.
THEY ARE ON A WELL-DESERVED VACATION SO THAT

1683

01:22:59,180 --> 01:23:02,350

IS WHY
THEY COULD NOT BE HERE WITH YOU TODAY.

1684

01:23:02,350 --> 01:23:05,710

BUT THE PRESIDENT AND I AND THE FIRST LADY
IN THAT

1685

01:23:05,710 --> 01:23:09,830

CATEGORY THAT JO HAD UP THERE IF THE PEOPLE
THAT AREN'T

1686
01:23:09,830 --> 01:23:13,350
IN STEM AND WE MIGHT NOT EVEN UNDERSTAND SCIENCE,
BUT

1687
01:23:13,350 --> 01:23:17,340
WE THINK IT'S REALLY COOL.
SO WE REALLY – THE PRESIDENT'S FAVORITE

1688
01:23:17,340 --> 01:23:20,580
EVENT OF THE
YEAR EVERY YEAR IS THE WHITE HOUSE SCIENCE

1689
01:23:20,580 --> 01:23:24,710
FAIR WHICH
IS SOMETHING HE INAUGURATED IN THIS ADMINISTRATION.

1690
01:23:24,710 --> 01:23:27,840
WE HOPE IT WILL CONTINUE, BUT IT IS HIS FAVORITE
EVENT

1691
01:23:27,840 --> 01:23:31,460
OF THE YEAR AND HIS FAVORITE PLACE TO ENGAGE
WITH YOUNG

1692
01:23:31,460 --> 01:23:35,020
WOMEN AND GIRLS AND THE DIVERSE YOUNG PEOPLE
ARE THERE.

1693
01:23:35,020 --> 01:23:40,450
I FAVORITE SHOT FROM OUR TIME AT THE WHITE
HOUSE IS

1694
01:23:40,450 --> 01:23:44,290
FROM LAST YEAR'S WHITE HOUSE SCIENCE FAIR
WHERE A GROUP

1695
01:23:44,290 --> 01:23:47,840
OF BROWNIES, GIRL SCOUTS, YOU KNOW THAT'S
THE YOUNGEST

1696

01:23:47,840 --> 01:23:52,420

GIRL SCOUTS, THE LITTLE GIRLS IN THEIR SUPERGIRL
CAPES

1697

01:23:52,420 --> 01:23:56,040

AND THEIR PRINCESS TRS, WHICH THEY PUT ON
THE PRESIDENT

1698

01:23:56,040 --> 01:23:59,950

AND HE IS BENDING DOWN AND ENGAGING WITH THEM
WITH

1699

01:23:59,950 --> 01:24:04,980

THEIR SCIENCE PROJECT.
AND THAT IS CHANGING THE FACE OF WHAT IT MEANS

1700

01:24:04,980 --> 01:24:08,070

TO BE A
SCIENTIST AND BE INTERESTED IN STEM EVEN AT

1701

01:24:08,070 --> 01:24:17,000

THE
YOUNGEST YEARS WHICH JO TALKED ABOUT.

1702

01:24:17,000 --> 01:24:19,520

BEFORE HER TIME AT THE WHITE HOUSE AND HAS
USED THE

1703

01:24:19,520 --> 01:24:23,510

PLATFORM OF THE WHITE HOUSE TO EDUCATE SO
MANY OF US ON

1704

01:24:23,510 --> 01:24:27,120

WHAT SHE HAS.
SHE'S GOT THE DATA AND THE EVIDENCE TO BACK

1705

01:24:27,120 --> 01:24:30,940

UP THE NEED
THAT WE HAVE IN THE WAYS IN WHICH WE CAN CHANGE

1706

01:24:30,940 --> 01:24:32,620

IT AND
THE BEST PRACTICES.

1707

01:24:32,620 --> 01:24:36,090

SO IT WAS A TREAT TO LISTEN TO HER AND A TREAT
FOR YOU

1708

01:24:36,090 --> 01:24:41,230

TO SEE HER THIS MORNING.
THIS HAS BEEN A HUGE INVESTMENT, NOT JUST

1709

01:24:41,230 --> 01:24:44,140

IN THOSE KIND
OF FEEL-GOOD MOMENTS LIKE THE WHITE HOUSE

1710

01:24:44,140 --> 01:24:47,200

SCIENCE FAIR,
BUT THE PRESIDENT HAS BEEN KEY ABOUT MAKING

1711

01:24:47,200 --> 01:24:50,230

HARD CORE
INVESTMENTS TO LIKE \$1 BILLION IN PRIVATE

1712

01:24:50,230 --> 01:24:57,710

INVESTMENTS,
3 BILLION DOLLARS IN OUR BUDGET, HE'S ESTABLISHED

1713

01:24:57,710 --> 01:25:02,110

US
DSR UNITED STATES DIGITAL SERVICES GROUP FOR

1714

01:25:02,110 --> 01:25:05,230

THE FIRST
TIME EVER TO BRING REALLY STATE-OF-THE-ART

1715

01:25:05,230 --> 01:25:08,770

TECHNOLOGY,
COMPUTER SCIENTISTS INTO THE FEDERAL GOVERNMENT.

1716

01:25:08,770 --> 01:25:14,480

HE ESTABLISHED THE OFFICE OF THE CHIEF TECHNOLOGY
OFFICER AND HE HAS REALLY TRIED TO PROMOTE

1717

01:25:14,480 --> 01:25:18,120

IN EVERY
CORNER AND TURNED THE NEED FOR INCREASING

1718

01:25:18,120 --> 01:25:21,500

STEM.
HE KNOWS AND TALKS ABOUT HOW WE NEED 1 MILLION

1719

01:25:21,500 --> 01:25:22,500

MORE

1720

01:25:22,500 --> 01:25:25,540

STEM JOBS BY 2020 AND WE NEED TO MAKE SURE
THAT THOSE

1721

01:25:25,540 --> 01:25:33,610

INCLUDE DIVERSE WOMEN, MINORITIES.
YOU KNOW, YOU HERE AT NASA, NOT ONLY FOR WHAT

1722

01:25:33,610 --> 01:25:36,250

YOU HAVE
DONE FOR WOMEN AND GIRLS THAT I CITED, BUT

1723

01:25:36,250 --> 01:25:40,090

WITH YOUR
ONE AND A HALF DOLLAR GRANTS FOR STEM RESEARCH,

1724

01:25:40,090 --> 01:25:44,750

YOU ARE
IN A PARTICIPANT IN THIS AND I AM SO PROUD

1725

01:25:44,750 --> 01:25:48,410

THAT WHAT
THROUGH THIS CONFERENCE TODAY, AND

1726

01:25:48,410 --> 01:25:51,910

THROUGH ALL THE WORK I KNOW YOU DO THROUGHOUT
AS YOU

1727

01:25:51,910 --> 01:25:54,170

MAY GRANT DECISIONS, AS YOU MAKE YOUR OWN
SCIENTIFIC

1728

01:25:54,170 --> 01:25:57,840

AND RESEARCH DECISIONS, YOUR BEEN OUTSPOKEN
ABOUT

1729

01:25:57,840 --> 01:26:02,410

INCLUSION AND DIVERSITY NEEDS THAT WE HAVE.
LET'S FACE IT.

1730

01:26:02,410 --> 01:26:07,450

NASA IS LIKE REALLY COOL.
WHEN YOU ALL DO THINGS, PEOPLE PAY ATTENTION,

1731

01:26:07,450 --> 01:26:08,800

KIDS PAY
ATTENTION.

1732

01:26:08,800 --> 01:26:12,090

BECAUSE YOU ARE THE COOL GUYS IN THE FEDERAL
GOVERNMENT.

1733

01:26:12,090 --> 01:26:15,940

I CONFESS THAT WHEN DOCTOR HOLDEN SENDS THE
PHOTOS I

1734

01:26:15,940 --> 01:26:21,790

SENT THEM AROUND HE CAME WITH ME BECAUSE HE
WANTED TO

1735

01:26:21,790 --> 01:26:24,370

BE HERE AT NASA HEADQUARTERS BECAUSE HE LOVES
THE

1736
01:26:24,370 --> 01:26:27,410
PHOTOS THAT WE SEND OUT WHEN DOCTOR HOLD DOCTOR
HOLDEN

1737
01:26:27,410 --> 01:26:38,040
– BECAUSE YOU GUYS SHOW WHAT COOL CAN BE.
AND I AM JUST SO GRATEFUL FOR THIS OPPORTUNITY

1738
01:26:38,040 --> 01:26:41,900
THIS
MORNING TO THANK YOU FOR THE CONTINUED SUSTAINED

1739
01:26:41,900 --> 01:26:45,960
LEADERSHIP THAT YOU ALL PROVIDE TO SPUR YOU
WANT TO DO

1740
01:26:45,960 --> 01:26:48,290
MORE INTO CONTINUE TO LEAD THE REST OF US
IN THE

1741
01:26:48,290 --> 01:26:51,880
FEDERAL GOVERNMENT ON HOW TO DO BETTER AT
THIS AND TO

1742
01:26:51,880 --> 01:26:57,640
BE THAT BEACON FOR YOUNG WOMEN AND GIRLS AND
YOUNG BOYS

1743
01:26:57,640 --> 01:27:01,820
AND MEN THROUGHOUT OUR COUNTRY TO REALLY BE
INSPIRED,

1744
01:27:01,820 --> 01:27:04,530
TO REACH THE HEIGHTS THAT YOU ALL ARE ABLE
TO REACH

1745
01:27:04,530 --> 01:27:07,940
EVERY DAY AND TO REALLY PROPEL THIS COUNTRY
FORWARD

1746

01:27:07,940 --> 01:27:10,790

BECAUSE YOU ARE THE KEY, NOT JUST TO THE FUTURE
FOR

1747

01:27:10,790 --> 01:27:21,180

THESE YOUNG PEOPLE, BUT TO THE FUTURE OF OUR
COUNTRY.

1748

01:27:21,180 --> 01:27:27,260

SO THANK YOU VERY MUCH.
[APPLAUSE].

1749

01:27:27,260 --> 01:27:29,060

>> THANK YOU.
LET'S GIVE OUR DISTINGUISHED GUESTS ANOTHER

1750

01:27:29,060 --> 01:27:30,850

ROUND OF
APPLAUSE.

1751

01:27:30,850 --> 01:27:35,050

[APPLAUSE]
>> WE'VE HAD A WEALTH OF INFORMATION THIS

1752

01:27:35,050 --> 01:27:39,510

MORNING AND
WE HOPE THAT THOSE WHO ARE VIEWING WE HAVE

1753

01:27:39,510 --> 01:27:42,760

A LARGE
NUMBER OF FOLKS VIEWING THE STEM CONFERENCE

1754

01:27:42,760 --> 01:27:45,670

THIS
MORNING AND WE HOPE THAT YOU ARE ENJOYING