GOOD AFTERNOON.

I WANT TO WELCOME YOU TO THE NASA WOMEN IN ACTION S.T.E.M. EVENT IN GREENBELT, MARYLAND.

I AM DR. CRYSTAL JOHNSON, DEPUTY CENTER DIRECTOR FOR RESEARCH AND TECHNOLOGY HERE AT GODDARD.

FIRST, WE'VE HAD A MORNING OF EXCITING ACTIVITIES FOR THE YOUNG GIRLS WITH US HERE IN THE AUDIENCE.

WOULD YOU AGREE WITH THAT, YOUNG LADIES?

ALL RIGHT.

THANK YOU.

WE'RE HAPPY THAT YOU'RE HERE.

THANK YOU.
WE ARE VERY EXCITED TO PRESENT THIS EVENT TO YOU ON THIS SPECIAL DAY IN NASA'S HISTORY, AS WELL AS GODDARD SPACEFLIGHT CENTER.

OVER 90 YEARS†-- NO, EXACTLY 90 YEARS AGO TODAY ON MARCH 16th, 1926, A ROCKET BUILT BY ROBERT H. GODDARD LIFTED OFF AND FOREVER CHANGED THE WAY OF SCIENTIFIC EXPLORATION, GIVING BIRTH TO NASA.

NOW MORE THAN EVER THE PURSUIT OF THOSE KINDS OF MOMENTS OF INNOVATION IS KEY TO OUR FUTURE.

THE DEVELOPMENT OF WORLD CLASS TALENT AND SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS REMAINS CRITICAL TOLL COUNTRY'S GLOBAL LEADERSHIP.
SO HERE AT NASA, WE UNDERSTAND THAT FOSTERING AN OPEN AND DIVERSE SCIENTIFIC COMMUNITY THAT DRAWS FROM AN ARRAY OF UNIQUE EXPERIENCES AND VIEWPOINTS IS A VERY NECESSARY STEP TO REALIZING THIS GOAL.

IN ADDITION, S.T.E.M. TECHNOLOGICAL BREAKTHROUGHS HERE AT NASA AND ALL ACROSS. INCREASING OPPORTUNITIES FOR WOMEN IN THESE FIELDS IS A STEP TOWARD RECOGNIZING GREATER ECONOMIC SUCCESS AND EQUALITY FOR WOMEN ACROSS THE BOARD.

TODAY WE'D LIKE TO SHARE WITH YOU SOME OF THE STORIES OF LEADING WOMEN AT NASA WHO EMBODY THIS IDEAL.

YOU CAN FOLLOW US ON THIS DIALOGUE ON SOCIAL MEDIA
USING†@NASAWOMEN.

I NOW HAVE THE HONOR OF INTRODUCING OUR KEYNOTE SPEAKER,

DR. JO HANDLESMAN.

JO IS THE ASSOCIATE DIRECTOR FOR SCIENCE AT THE WHITE HOUSE OFFICE OF SCIENCE AND TECHNOLOGY POLICY.

SHE WAS APPOINTED TO THAT POSITION BY PRESIDENT OBAMA AND CONFIRMED BY THE SENATE IN JUNE OF 2014.

SHE ADVISES THE PRESIDENT ON THE IMPLICATIONS OF SCIENCE FOR THE NATION, HOW SCIENCE CAN INFORM NATIONAL POLICY AND ON THE FEDERAL EFFORTS TO SUPPORT SCIENTIFIC RESEARCH.

BEFORE JOINING THE WHITE HOUSE, SHE WORKED AS A PROFESSOR AT
00:02:36,689 --> 00:02:40,180
YALE UNIVERSITY AND THE
UNIVERSITY OF WISCONSIN IN

51
00:02:40,180 --> 00:02:41,180
MADISON.

52
00:02:41,180 --> 00:02:42,180
DR.

53
00:02:42,180 --> 00:02:45,960
HANDLESMAN IS AN EXPERT IN
COMMUNICATION AMONG BACTERIA,

54
00:02:45,960 --> 00:02:50,150
BACTERIA THAT ASSOCIATE WITH
SOIL, PLANTS AND INSECTS, HELPED

55
00:02:50,150 --> 00:02:56,140
PIONEER A FIELD WHICH BRIDGES
AGRICULTURE AND MEDICINE.

56
00:02:56,139 --> 00:02:57,139
DR.

57
00:02:57,139 --> 00:03:00,099
HANDLESMAN IS ALSO
RECOGNIZED FOR HER RESEARCH ON

58
00:03:00,099 --> 00:03:05,259
SCIENCE, EDUCATION, AND WOMEN
AND MINORITIES IN SCIENCE, AND

59
00:03:05,259 --> 00:03:10,429
RECEIVED THE PRESIDENTIAL AWARD
FOR EXCELLENCE IN SCIENCE

60
00:03:10,430 --> 00:03:12,849
MENTORING IN 2011.

61
00:03:12,849 --> 00:03:14,849
PLEASE JOIN ME IN WELCOMING DR.

62
00:03:14,849 --> 00:03:19,169
JO HANDLEDSMAN.
WELL, GOOD AFTERNOON.

WELCOME, EVERYBODY.

THANK YOU FOR THAT LOVELY INTRODUCTION.

IT'S A REAL HONOR TO BE HERE.

I'VE NEVER BEEN TO GODDARD BEFORE, SO I'M QUITE EXCITED AND

HOPEING FOR AN INVITATION TO COME BACK AND SEE MORE.

THIS IS ONE OF MY FAVORITE ACTIVITIES IN WOMEN'S HISTORY

MONTH BECAUSE IT IS PARTICULARLY IMPORTANT TO RECOGNIZE THE WOMEN

WHO IN EARLIER TIMES WEREN'T RECOGNIZED FOR WHAT THEY DID.

AND ALTHOUGH WOMEN HAVE BEEN IMPORTANT TO THE FULFILLMENT OF

NASA'S MISSION THROUGHOUT ITS HISTORY, THEY HAVEN'T ALWAYS BEEN RECOGNIZED FOR THEIR ACCOMPLISHMENTS.
PRESIDENT OBAMA CHANGED THAT A FEW MONTHS AGO WHEN HE AWARDED KATHERINE JOHNSON, A GREAT NASA MATHEMATICIAN A MEDAL.

SHE'S BECOME SOMETHING OF A SENSATION IN SCIENCE AND TECHNOLOGY AS WE SHOULD HAVE BEEN ALL ALONG AND SHE'S FINALLY BECOMING RECOGNIZED AS ONE OF THE SO-CALLED FEMALE CALCULATORS, OR AS I READ UNPLEASANTLY IN ONE PLACE, THE COMPUTERS WITH SKIRTS.

AND SHE DID THE MATH THAT SENT ALLEN SHEPHERD AND JOHN GLENN AND THE FIRST APOLLO ASTRONAUTS INTO SPACE.

STORY HAS IT THAT JOHN GLENN WOULDN'T TAKE OFF IN SPACE UNTIL
KATHERINE HAD CHECKED THE MAP BECAUSE HE WANTED TO MAKE SURE

87
00:04:46,189 --> 00:04:48,750
IT WAS RIGHT.

88
00:04:48,750 --> 00:04:52,279
SHE WORKED ON VIRTUALLY EVERY MAJOR NASA SPACE MISSION FOR

89
00:04:52,279 --> 00:04:56,439
MANY, MANY YEARS FROM "MERCURY" THROUGH THE SHUTTLE.

90
00:04:56,439 --> 00:05:01,430
SHE ALSO LITERALLY WROTE THE TEXTBOOK ON ROCK SCIENCE.

91
00:05:01,430 --> 00:05:05,811
RECENTLY WE JUST FOUND OUT AT THE WHITE HOUSE THAT THERE IS

92
00:05:05,810 --> 00:05:12,459
GOING TO BE AN UPCOMING FILM ON HER LIFE SO SHE HAS TRULY HIT

93
00:05:12,459 --> 00:05:15,319
THE BIG TIME AND IS BEING RECOGNIZED.

94
00:05:15,319 --> 00:05:19,319
THAT'S TRULY CHANGED FROM THE WAY SHE IS IGNORED BEFORE.

95
00:05:19,319 --> 00:05:24,139
IF IN HE OF YOU HAVE SEEN SOME OF THE GREAT OLD FILMS OF THAT

96
00:05:24,139 --> 00:05:27,759
ERA OF EARLY SPACE MISSIONS, YOU KNOW THAT WOMEN DIDN'T PLAY A

97
00:05:27,759 --> 00:05:33,180
VERY LARGE ROLE IN THOSE FILMS EXCEPT AS WIVES OF ASTRONAUTS.
I hope somebody remakes the story of space with Katherine Johnson at the center. It sounds like that may be what we're in store for.

But today things are somewhat different. Girls have all sorts of role models. That's also real change that we actually have female astronauts to look up to. You also have incredible leadership at NASA among the women.

We have the NASA Deputy Administrator, and a scientist who provide incredible leadership throughout the agency and they lead teams of scientists, including many, many
WOMEN AND ENGINEERS WHO ARE PUSHING THE BOUNDARIES OF SCIENCE, AND IN SO DOING, PUSHING THE BOUNDARIES OF OUR UNIVERSE.

SO TODAY I WANT TO THANK JUST PERSONALLY FROM ME AND ON BEHALF OF THE WHITE HOUSE, I WANT TO THANK ALL THE GREAT WOMEN AT NASA WHO ARE DOING WONDERFUL AND GREAT, IMPORTANT WORK.

NOT ONLY IN THEIR SCIENCE, BUT TO INSPIRE YOUNG PEOPLE AND YOUNG WOMEN PARTICULARLY TO BE EXPLORERS AND INNOVATORS AND THE NEXT GENERATION OF ASTRONAUTS, NO MATTER WHAT THEIR BACKGROUND AND WHERE THEY COME FROM.

WHEN I WAS YOUNG, I LOOKED KIND OF LONGINGLY AT TELESCOPES. I THOUGHT THEY WERE REALLY COOL LOOKING.
BUT I NEVER LOOKED THROUGH ONE, BECAUSE I THOUGHT TELESCOPES WERE JUST FOR BOYS.

THAT WAS THE ERA I GREW UP IN.

SO INSTEAD, I KIND OF HOPED ONE DAY I'D HAVE A TELESCOPE.

I'M STILL HOPING.

ONE DAY MAYBE I WILL.

BUT I FOUND INSTEAD THAT MICROSCOPES WERE SOMETHING THAT GIRLS DID USE, BECAUSE I HAD A FEMALE TEACHER IN SEVENTH GRADE.

SHE TAUGHT ME HOW TO USE A MICROSCOPE.

SO IT SEEMED LIKE A NATURAL THING FOR A GIRL TO USE A MICROSCOPE.

SO SINCE I WAS ABOUT 12 YEARS OLD I'VE BEEN GLUED TO THE
OCULARS OF A MICROSCOPE.

I think it has an interesting parallel with space because the tiny little microbes that you cannot see with your eyes has an interesting similarity to the great objects in space that we also can't see very well with the naked eye.

But that's because they're far away and large.

So Sid's say that microbiology is the inverse of astronomy.

Perhaps I sort of got to look through a telescope inversely.

So things have changed since I was a girl.

And I hope that many of the girls in this room today would be appalled to think that a telescope was only for a boy.

That that is just something that
NEVER ENTERED YOUR MIND.

00:08:29,970 --> 00:08:33,089
PERHAPS THE BEST ILLUSTRATION OF
THAT CHANGE IS THAT HALF OF THE

00:08:33,089 --> 00:08:35,630
RECENT ASTRONAUT CLASS IS WOMEN.

00:08:35,629 --> 00:08:39,688
SO THAT'S BIG CHANGE BUT WE
STILL HAVE MORE TO DO.

00:08:39,688 --> 00:08:42,389
THERE ARE STILL TOO MANY LITTLE
GIRLS WHO GROW UP THINKING THAT

00:08:42,389 --> 00:08:46,058
THEY CAN'T DO SOMETHING OR
SOMEONE TELLS THEM THAT THEY

00:08:46,058 --> 00:08:49,069
CAN'T DO SOMETHING BECAUSE
THEY'RE A GIRL.

00:08:49,070 --> 00:08:52,149
PARTICULARLY IN ENGINEERING AND
OTHER FIELDS OF THE QUANTITATIVE

00:08:52,149 --> 00:08:56,528
SCIENCES LIKE ASTRONOMY AND
COMPUTER SCIENCE, IT'S BEEN VERY

00:08:56,528 --> 00:09:00,149
HARD FOR GIRLS TO GET INTO THESE
FIELDS, IN PART, BECAUSE THERE

00:09:00,149 --> 00:09:03,110
HAVEN'T BEEN ENOUGH WOMEN TO
PROVIDE ROLE MODELS.

00:09:03,110 --> 00:09:08,019
IT IS HARD TO DO SOMETHING IF
YOU CAN'T SEE SOMEONE WHO LOOKS
LIKE YOU DOING THAT SAME THING.

WOMEN STILL OCCUPY A MINORITY OF JOBS IN SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS, OR S.T.E.M.

29% OF THE JOBS ARE FILLED BY WOMEN, AND 37% OF S.T.E.M. COLLEGE GRADUATES ARE WOMEN.

SADLY, THAT'S SKEWED BY FIELD.

MY FIELD BIOLOGY IS VERY RICH WITH WOMEN, BUT MANY OTHER FIELDS HAVE LESS THAN 29% OF THEIR JOBS BEING FILLED BY WOMEN.

IN SOME FIELDS LIKE COMPUTER SCIENCE AND ENGINEERING, IN THE LAST FEW DECADES, THE PROPORTION OF WOMEN IN MAJORS IN THOSE FIELDS IN COLLEGE HAS ACTUALLY GONE DOWN.
WE HAVE TO FIX THAT.

170
00:09:50,230 --> 00:09:53,209
THAT'S IMPORTANT CHANGE AS WELL.

171
00:09:53,208 --> 00:09:57,018
THE PRESIDENT HAS SAID OVER AND
OVER THAT IMPROVING S.T.E.M.

172
00:09:57,019 --> 00:10:00,019
OUTCOMES FOR ALL STUDENTS IS ONE
OF THE MOST IMPORTANT THINGS WE

173
00:10:00,019 --> 00:10:04,328
CAN DO TO ENSURE A PROSPEROUS,
SECURE AND SUSTAINABLE FUTURE

174
00:10:04,328 --> 00:10:05,958
FOR OUR COUNTRY.

175
00:10:05,958 --> 00:10:08,638
AND HE'S ACTED ON THAT IN MANY,
MANY WAYS.

176
00:10:08,639 --> 00:10:13,230
A BIG PART OF THAT GOAL MEANS
HELPING TO INCREASE ACCESS FOR

177
00:10:13,230 --> 00:10:15,990
WOMEN AND GIRLS WHO WANT TO
ENTER S.T.E.M.

178
00:10:15,990 --> 00:10:18,480
FIELDS, AND THOSE
FIELDS ARE IMPORTANT TO GET THEM

179
00:10:18,480 --> 00:10:22,789
INTO BECAUSE THOSE REPRESENT
WELL-PAYING JOBS, EXCITING AND

180
00:10:22,789 --> 00:10:27,259
REWARDING CAREERS, AND THOSE
JOBS CONTRIBUTE TO OUR NATIONAL

181
00:10:27,259 --> 00:10:29,269
GLOBAL COMPETITIVENESS.

00:10:29,269 --> 00:10:32,909
SO THE PRESIDENT'S FOCUS ON INCREASING WOMEN IN S.T.E.M.

00:10:32,909 --> 00:10:34,828
IS NOT JUST THE RIGHT THING TO DO,

00:10:34,828 --> 00:10:39,299
BUT OUR ECONOMIC FUTURE DEPENDS ON IT BECAUSE WE NEED MORE AND

00:10:39,299 --> 00:10:40,568
TALENTED S.T.E.M.

00:10:40,568 --> 00:10:43,240
WORKERS AND WE NEED TO DRAW THEM FROM WHATEVER

00:10:43,240 --> 00:10:46,289
GROUPS THEY'RE PART OF BASED ON THEIR TALENT AND NOT WHETHER

00:10:46,289 --> 00:10:51,399
THEY'RE JUST BOYS OR THE TRADITIONAL LOOKING SCIENTISTS

00:10:51,399 --> 00:10:53,240
OF THE PAST.

00:10:53,240 --> 00:10:56,360
WE KNOW A FEW THINGS FROM EDUCATION RESEARCH OF THE LAST

00:10:56,360 --> 00:11:00,789
FEW DECADES ABOUT WHAT DRIVES PEOPLE AWAY FROM S.T.E.M.

00:11:00,789 --> 00:11:04,899
FIELDS, AND ALSO WHAT HELPS THEM TO SUCCEED AND WHAT INSPIRES

00:11:04,899 --> 00:11:05,909
AND IN PARTICULAR, GIRLS AND CERTAIN MINORITY GROUPS RESPOND TO DIFFERENT KINDS OF TEACHING.

SO THE FIRST THING WE HAVE TO DO IS CHANGE THE WAY WE TEACH S.T.E.M.

IN THE CLASSROOM, AND THAT'S THROUGHOUT FROM KINDERGARTEN ALL THE WAY THROUGH GRADUATE SCHOOL.

THE CHANGES WE NEED TO MAKE INVOLVE GETTING PEOPLE ACTIVELY INVOLVED, ENGAGING WITH THE MATERIAL, DISCOVERING ENGINEERING THINGS, CREATING THINGS, AND NOT JUST READING ABOUT THINGS IN A TEXTBOOK THAT OTHER PEOPLE HAVE EITHER DISCOVERED OR INVENTED.

THOSE ARE GOOD TEACHING THEM.
TECHNIQUES FOR EVERYONE, BUT

THEY HAVE A DIFFERENTIALLY
POSITIVE EFFECT ON WOMEN AND

MINORITIES.

SO IF WE START INCORPORATING
REAL WORLD PROBLEMS INTO OUR

CLASSROOMS, AND HANDS-ON
RESEARCH, WE'LL BE BREEDING

SCIENTISTS IN A COMPLETELY NEW
WAY.

WE'LL BE RAISING A GENERATION OF
SCIENTISTS WHO COME TO US EVEN

BY THE TIME THEY GET TO COLLEGE
UNDERSTANDING WHAT SCIENCE IS,

WHAT ENGINEERING IS, WHAT IT
MEANS TO PARTICIPATE, TO BE A

SCIENTIST OR AN ENGINEER AND NOT
JUST LOOK FROM THE OUTSIDE.

THAT'S A REALLY, REALLY
IMPORTANT CHANGE.

THE OTHER ASPECT OF WHAT WE DO
IN OUR CLASSROOMS THAT HAS TO

CHANGE IS WE NEED TO MAKE CONNECTIONS BETWEEN THE SCIENCE AND TECHNOLOGY THAT WE TEACH AND THE REAL WORLD THAT IT AFFECTS.

THERE IS EVIDENCE THAT GIRLS AND MINORITIES HAVE A GREATER DRIVE TO SERVE THEIR COMMUNITIES AND TO SERVE THE GLOBAL COMMUNITY IN THEIR JOBS, AND THEIR CAREER CHOICES ARE DRIVEN BY THIS MORE THAN FOR WHITE MEN AND BOYS.

SO AS A RESULT, WE'RE DEPRIVING ALL STUDENTS FROM UNDERSTANDING THOSE CONNECTIONS, BUT PARTICULARLY DEPRIVING GIRLS AND MINORITIES MAY DECIDE NOT TO GO INTO S.T.E.M.

CAREERS BECAUSE THEY MAY NOT SEE THAT CONNECTION TO MAKING THE WORLD A BETTER PLACE, AND IN FACT S.T.E.M. IS ALL ABOUT MAKING THE WORLD A
BETTER PLACE.

IT IS THE PURSUIT OF KNOWLEDGE, BUT IT IS ALSO KNOWLEDGE FOR THE BENEFIT OF HUMANKIND.

SO THAT'S AN IMPORTANT FIRST STEP THAT MY OFFICE IS WORKING ON, TRYING TO CHANGE THE WAY THAT WE TEACH.

BUT IT GOES BEYOND THE CLASSROOM.

ANOTHER CHANGE WE NEED IS TO CHANGE THE IMAGE OF S.T.E.M. IN OUR MEDIA.

WE KNOW ENTERTAINMENT MEDIA HAS ALTERED WHAT PEOPLE CONSCIOUSLY AND UNCONSCIOUSLY PLAN TO DO, THINK TO DO AND END UP ACTUALLY DOING.

SO WE NEED TO WORK TO CHANGE THE IMAGES TO MAKE S.T.E.M.
A field that is populated in fictional media with the kind of people who really do S.T.E.M., which is a tremendous variety of women and minorities and people from all walks of life.

So that's why it's very exciting to hear recently that this movie about Katherine Johnson is being made, because that's one of our goals in my office to see change in the way S.T.E.M. and people who do S.T.E.M. are represented, to include a broader range of our students and ultimately aspiring scientists and engineers.

And the third thing is we need
TO REMOVE BARRIERS FROM OUR

EDUCATIONAL INSTITUTIONS SO WE DON'T CREATE ARTIFICIAL REASONS

FOR WOMEN AND MINORITIES TO GET TURNED AWAY FROM S.T.E.M.

SOME OF THAT IS JUST INSTITUTIONAL STRUCTURES, LIKE

HOW WE PLAN PEOPLE'S LIVES ACCORDING TO MALE REPRODUCTIVE

CALENDARS AND NOT FEMALE CALENDARS.

AND MANY OTHER THINGS THAT HAVE BEEN FOCUSED ON FOR DECADES FOR

MEN THAT AREN'T THE BENEFIT TO WOMEN, AND VISA VERA, THINGS

THAT WOMEN NEED IN ORDER TO BE INTEGRATED INTO THE ACADEMIC

S.T.E.M.

COMMUNITY, BUT JUST ISN'T PROVIDED.

WE NEED TO TAKE THE ROLE OF WOMEN IN ACADEMIC SCIENCE
THROUGHOUT FROM KINDERGARTEN THROUGH GRADUATE SCHOOL AND EMPLOYMENT.

WE NEED TO TAKE THAT ROLE VERY SERIOUSLY AND REALIZE THAT IF WE DON'T DRAW ON ALL OF THE TALENT IN THIS COUNTRY, AND AT LEAST HALF OF IT COMES FROM WOMEN, WE ARE NOT EXPERIENCING THE KIND OF GROWTH AND CREATIVITY AND INNOVATION THAT OUR COUNTRY HAS ALWAYS THRIVED UPON.

I THINK THERE IS EVIDENCE THAT DIVERSITY IS ONE OF THE THINGS THAT HAS SEPARATED OUR COUNTRY IN INNOVATION FROM ALL OTHER COUNTRIES.

WE'RE ALWAYS LOOKED TO AS THE MOST INNOVATIVE COUNTRY AND WE'RE THE ENVY OF THE WORLD FOR THAT WITH OUR SCIENCE AND
Technology just leading the world, and many countries have tried to copy our system and they’ve tried to copy our educational system.

They’ve tried to create liberal arts colleges which are something very special to the United States.

They’ve looked at our business models and tried to copy our companies.

But I would assert the one thing that is the most important in innovation in this country that people can’t copy from the outside is our diversity.

There is scientific evidence to back that up.

There’s a lot of evidence to say that diverse groups actually
FUNCTION MUCH BETTER AND ARE
MORE CREATIVE AND PRODUCE BETTER

OUTCOMES MORE CREATIVE AND
INNOVATIVE OUTCOMES THAN MORE

UNIFORM OR HOMOGENEOUS GROUPS.

THESE COMPANIES YOU HEAR ABOUT
THAT ARE ALMOST ALL WHITE MEN

ARE DOING THEMSELVES A
DISSERVICE BY EXCLUDING WHIP AND

MINORITIES THAT CAN BE ENRICHING
THE CONVERSATION AND DIALOGUE

AND THE CREATIVITY OF EVERYONE
THERE.

BUT AS A NATION, PERHAPS NOT IN
EVERY COMPANY, BUT AS A NATION,
WE ARE UNIQUELY DIVERSE AND WE
NEED TO NOT ONLY TREASURE THAT

AND USE IT FOR BENEFIT, BUT WE
NEED TO MAKE SURE THAT PEOPLE

KNOW THAT DIVERSITY IS NOT
SOMETHING THAT WE DO BECAUSE WE

SHOULD DO IT.
WE TAKE CARE OF OUR DIVERSITY BECAUSE THAT IS WHAT AMERICA IS AND THAT'S WHAT MAKES US GREAT, AND WE NEED TO LIVE THAT AND WORK TOWARD A NEW MODEL OF S.T.E.M.

WHERE DIVERSITY IS VALUED AND ENCOURAGED AND NOT SEEN AS AN EXTRA.

SO TO THE YOUNG WOMEN HERE WHO ARE TOMORROW'S LEADER IN S.T.E.M., I SAY GO AFTER YOUR DREAMS.

WHETHER IT IS DISCOVERING A STAR OR TRAVELING TO A PLANET, I SAY GO FOR IT.

IMAGINE YOURSELF DOING WHATEVER IT IS THAT ANYONE CAN DO.

EVEN IF YOU DON'T SEE SOMEONE WHO LOOKS JUST LIKE YOU, DOING WHAT YOU IMAGINED.
THAT’S OKAY.

YOU COULD BE THE FIRST.

AND IF SOMEONE TELLS YOU, YOU CAN’T DO THAT, YOUR ANSWER SHOULD BE—you can.

YOU SHOULD CONSIDER BECAUSE YOU CAN DO ANYTHING.

TO THE SENIOR WOMEN OF NASA I WANT TO AGAIN THANK YOU FOR THE GREAT WORK YOU’VE DONE AND THE LEADERSHIP YOU’VE GIVEN TO THE ENTIRE EFFORT TO BRING A MORE DIVERSE COMMUNITY INTO THE S.T.E.M. FIELDS AND TO BE ROLE MODELS FOR THE NEXT GENERATION.

SO I’M LOOKING FORWARD TO OUR AFTERNOON AND I THANK YOU ALL FOR BEING HERE AND HAVE FUN.
[†APPLAUSE†]

>>> OKAY.

THANK YOU SO MUCH, DR. HANDLESMAN, FOR SHARING YOUR THOUGHTS WITH US HERE TODAY.

JUST A LITTLE REMINDER, YOU ARE WATCHING NASA'S WOMEN IN ACTION EVENT LIVE FROM NASA'S GODDARD SPACEFLIGHT CENTER.

TO ASK ANY QUESTIONS, USE #ASKNASA ON SOCIAL MEDIA.

SO NOW HERE TO TAKE THOSE QUESTIONS ONCE YOU SEND THEM IN,

WE HAVE FOUR OF OUR NASA LEADERS THAT ARE GOING TO BE ANSWERING THOSE QUESTIONS FOR YOU.

PLEASE WELCOME ME†-- PLEASE HELP ME IN WELCOMING, FIRST OF ALL,

DR.

DAVA NEWMAN.
She is our Deputy NASA Administrator and along with Administrator Charles Bolden, Dr. Newman is responsible for providing overall leadership,

planning and policy direction for our agency.

Have a seat.

Next, Lisa Rowe, our Deputy Associate Administrator. She assists the Associate Administrator in performing the

Chief Operations Officer duties for the agency and leads several key agency initiatives.

Next we have Dr. Ellen, NASA's Chief Scientist.

She's the principal advisor to the administrator on the agency
SCIENCE PROGRAM AND SCIENCE RELATED ARE STRATEGIC PLANNING AND INVESTMENT.

AND THEN DR.

ELLEN OCHOA FROM JOHNSON SPATTE FLIGHT CENTER.

SHE IS THE DIRECTOR OF THE SPATTE FLIGHT CENTER AND AS A FORMER ASTRONAUT SHE FLEW ABOARD TWO MISSIONS ON "DISCOVERY" AND TWO ABOARD "ATLANTIS."

SHE IS THE FIRST HISPANIC WOMAN EVER TO FLY IN SPACE.

SO I WILL BE MODERATING THE PANEL FOR THESE LADIES TODAY.

FIRST START WITH DR.

NEWMAN AND GIVE A BRIEF INTRODUCTION,

ONE-MINUTE INTRODUCTION ON YOURSELF.
THANK YOU.

00:20:30,358 --> 00:20:32,500
>> HELLO, EVERYONE.

00:20:32,500 --> 00:20:34,648
HELLO, EVERYONE!

00:20:34,648 --> 00:20:37,869
HELLO, OUT THERE!

00:20:37,869 --> 00:20:41,000
WE GOT TO JAZZ IT UP HERE!

00:20:41,000 --> 00:20:42,460
I AM THRILLED TO BE HERE.

00:20:42,460 --> 00:20:47,288
I MEAN WOMEN IN S.T.E.M., JO,
THANK YOU SO MUCH FOR THAT

00:20:47,288 --> 00:20:48,288
INSPIRING TALK.

00:20:48,288 --> 00:20:50,900
THAT'S WHAT WE'RE HERE TO DO IS
CELEBRATE, ACKNOWLEDGE THE WORK

00:20:50,900 --> 00:20:55,100
WE HAVE TO DO AND DO IT ALL
TOGETHER.

00:20:55,099 --> 00:20:58,230
SO I AM A FORMER ACADEMIC.

00:20:58,230 --> 00:20:59,230
REAL QUICK BIO.

00:20:59,230 --> 00:21:03,470
I GREW UP IN HELENA, MONTANA,
GREW UP IN BIG SKY COUNTRY.

00:21:03,470 --> 00:21:04,839
GREW UP DREAMING ABOUT THE
THE APOLLO PROGRAM WAS VERY BIG WHEN I WAS A GIRL.

I'VE BEEN FOCUSED ON SENDING PEOPLE TO MARS†-- NOT EVER SINCE.

WHEN I WAS IN HIGH SCHOOL AT YOUR AGE, I LOVED BASKETBALL AND SKIING AND THANK GOODNESS SCIENCE AND MATH.

I KIND OF ENHANCED†-- CALLED IT S.T.E.A.M.D.

I BRING IN THE ARTS BECAUSE ALL I KNOW IS THE ARTS ARE MY STORY TELLERS, TELLING US HOW WE'RE GOING TO GET TO MARS.

THE ALMOST THE WHOLE TABLE HAS SOME DESIGN EXPERIENCE.

SO "D" IS IN.

I'M HERE TO TELL YOU THAT YOU'RE ALL IN BECAUSE WE NEED EVERY
SINGLE ONE OF YOU.

00:21:55,398 --> 00:21:59,558
FROM FAST FORWARD FROM EARLY CAREER IN MONTANA, MY FAMILY

00:21:59,558 --> 00:22:00,720
ALSO HAILS FROM CALIFORNIA.

00:22:00,720 --> 00:22:01,759
I WENT TO THE MIDWEST.

00:22:01,759 --> 00:22:03,450
I HAD NEVER BEEN THERE BEFORE.

00:22:03,450 --> 00:22:06,009
A LOT OF CORN FIELDS.

00:22:06,009 --> 00:22:10,589
I WENT TO NOTRE DAME AND BECAME AN AEROSPACE ENGINEER.

00:22:10,589 --> 00:22:12,909
BUT FIRST I WAS A PRELAW MAJOR.

00:22:12,910 --> 00:22:13,910
WHAT'S THAT?

00:22:13,910 --> 00:22:17,360
MY BROTHER GAVE ME GREAT ADVICE AND SAID, YOU'RE GOOD AT SCIENCE

00:22:17,359 --> 00:22:18,359
AND MATH.

00:22:18,359 --> 00:22:19,359
DO SOMETHING LIKE THAT.

00:22:19,359 --> 00:22:20,558
I DIDN'T EVEN KNOW.

00:22:20,558 --> 00:22:21,558
IT'S CALLED ENGINEERING.
WELL, IT ALL WORKED OUT WELL.

FROM THERE I WENT TO GRADUATE SCHOOL TO M.I.T.

DID TECHNOLOGY AND POLICY BECAUSE I WONDERED HOW DO THEY MAKE THOSE CRAZY DECISIONS IN WASHINGTON?

WELL, BE CAREFUL WHAT YOU WISH FOR.

BECAUSE 30 YEARS LATER YOU MIGHT BE SITTING IN THIS SEAT AND STILL TRY TO FIGURE OUT HOW WE CAN MAKE THE BEST DECISION FOR THE FUTURE.

CAME DOWN LAST YEAR TO JOIN NASA AND I JUST HAVE TO SAY, I'M HUMBLED, I'M HONORED, BECAUSE IT IS THE NASA WOMEN, IT IS THE NASA TEAM THAT I'VE BEEN ABLE TO TEAM AND I THINK I HAVE THE BEST JOB IN THE WORLD.
AWESOME.

LISA.

>> WELL, I AM DELIGHTED TO BE HERE AS WELL.

I HAD A GREAT CONVERSATION LEARNING ABOUT ALL THAT IS GOING ON IN OUR HIGH SCHOOLS IN ENGINEER SOMETHING.

I WAS JUST THRILLED TO HEAR ABOUT THE DIFFERENT PROGRAMS, THE AEROSPACE PROGRAM THAT'S HAPPENING THERE.

I AM THE DEPUTY CHIEF OPERATING OFFICER, WHEREAS DAVA IS THE DEPUTY CHIEF EXECUTIVE OFFICER OF NASA.

I'M THE DEPUTY CHIEF OPERATING OFFICER.

REALLY THAT'S FOCUSED ON THE OPERATIONS ACROSS ALL OF NASA'S TEN CENTERS.
I'VE BEEN FORTUNATE ENOUGH TO WORK AT FOUR OF NASA'S CENTERS IN MY CAREER.

ONE OF THOSE BEING NASA LANGLEY WHERE I WAS THE CENTER DIRECTOR,

THE VERY FIRST WOMAN CENTER DIRECTOR IN 100 YEARS.

[†APPLAUSE†] >> I WAS ABLE TO DO THAT FOR NINE YEARS.

IT WAS JUST A REALLY EXCITING TIME.

ALSO, I HAVE BEEN VERY FORTUNATE AND WORKED AT JOHNSON SPACE CENTER ON AND THE KENNEDY SPACE CENTER WHERE I WORKED ON THE INTERNATIONAL SPACE STATION DELIVERING THE VERY FIRST RESEARCH TO THE INTERNATIONAL SPACE STATION TO GET IT UP AND GOING.
AND OVER BOTH OF THOSE CENTERS HAVE WORKED 38 SHUTTLE FLIGHTS.

38 SHUTTLE MISSIONS IN VARIOUS POSITIONS ALONG THE WAY.

IT'S BEEN A VERY EXCITING CAREER AND BEING ABLE TO DO ALL OF THAT.

I AM MOST PROUD OF MY THREE CHILDREN AND YOU GUYS BE SURE AND TELL THEM THAT.

AND I ALSO AM AN ELECTRICAL ENGINEER AND THE VERY, VERY FIRST IN MY FAMILY TO GRADUATE FROM COLLEGE.

SO I'M VERY PROUD OF THE BACKGROUND THAT I'VE HAD AND THE EXCITING TIME THAT I'VE HAD AT NASA.

[†APPLAUSE†] >> I'M ELLEN.
As Chief Scientist of NASA I get to look across all of the science that we do at NASA from studying the Sun to studying the Universe, to studying that we do of the planets, of our Solar System, to studying our favorite planet, which is the Earth.

I hope you guys all agree that's our favorite planet.

To the work that we do every day up on the International Space Station trying to understand is the effects of microgravity on humans.

Now the connection across all those different areas of science is the fact that at NASA, we want to send humans to Mars. Not just any humans, we're going to need scientists, engineers,
ON THE SURFACE OF MARS.

YOU GUYS ARE JUST ABOUT THE RIGHT AGE TO BECOME SOME OF OUR FIRST MARS ASTRONAUTS.

SO YOU HAVE A LOT OF WORK TO GET READY.

IN ABOUT 20 YEARS NASA WILL BE READY TO SEND YOU.

I AM A PLANETARY GEOLOGIST.

I STUDY VOLCANOES AROUND THE SOLAR SYSTEM, VOLCANOES HERE ON EARTH, ON VENUS, ON MARS, AND I ALSO STUDY THE SURFACE OF ONE OF SATURN'S MOONS CALLED TITAN WHERE IT ACTUALLY RAINS LIQUID METHANE.

SORT OF LIKE LIQUID GASOLINE FALLS FROM THE SKY.

AN AMAZING PLACE.

I GOT INTO IT BECAUSE I AM A NASA BRAT.
MY FATHER WORKED FOR NASA, MY MOTHER WAS A SCIENCE TEACHER.

THIS DIDN'T AFFECT MY SISTER.

SHE BECAME AN ATTORNEY.

I'VE ALWAYS LOVED SCIENCE, AND NO ONE EVER TOLD ME I COULDN'T.

THAT'S AN IMPORTANT THING WE WANT TO TALK ABOUT HERE TODAY.

[†APPLAUSE†]

GOOD AFTERNOON.

I'M HAPPY TO BE HERE.

MY COLLEGE DEGREE IS IN PHYSICS.

I HAVE A DOCTORATE IN ELECTRICAL ENGINEERING.

THE FIRST THREE YEARS OF MY CAREER I WAS STUDYING ABOUT

OPTICAL INFORMATION PROCESSING PAT A COUPLE OF DIFFERENT

LABORATORIES.
THEN I WAS FORTUNATE ENOUGH TO BE SELECTED FOR THE ASTRONAUT PROGRAM.

SO THAT REALLY CHANGED MY LIFE AT THAT POINT.

I SPENT A NUMBER OF YEARS IN THE ASTRONAUT OFFICE.

HAD A CHANCE TO FLY ON FOUR SPACE SHUTTLE MISSIONS.

MAY HAVE A CHANCE TO TALK ABOUT THAT A LITTLE BIT MORE AS WE GO THROUGH TODAY'S SESSION.

AFTER MY FOUR FLIGHTS I ENDED UP GOING INTO MANAGEMENT AND LEADERSHIP POSITIONS AT JOHNSON SPACE CENTER.

JOHNSON OF COURSE IS ONE OF THE NASA CENTERS.

YOU CAN SEE THE WHOLE LIST OVER THERE JUST TO THE RIGHT OF THE PODIUM.
JOHNSON'S REALLY INVOLVED IN HUMAN SPACEFLIGHT, IN PARTICULAR

HUMAN SPACECRAFT ALL THE WAY FROM DESIGN TO OPERATION, AS WELL AS THE TRAINING AND PREPARATION OF THE ASTRONAUTS.

OF ALL THE PEOPLE WHO WORK IN MISSION CONTROL AND REALLY CARRYING OUT THE OPERATION.

SO A VERY EXCITING PLACE TO BE.

AT ONE POINT I WAS LEADING HEAD OF THE FLIGHT CREW OPERATIONS WHICH IS THE ORGANIZATION THAT MANAGES THE ASTRONAUT OFFICE AND OUR AIRCRAFT OFFICE DIVISION.

AND NOW I'M ACTUALLY THE CENTER DIRECTOR THERE, REPRESENTING A GROUP OF INCREDIBLY TALENTED PEOPLE AS WE'RE DOING HUMAN SPACE FLIGHTS.
OKAY.

THANK YOU.

SO THE FIRST QUESTION FOR YOU LADIES, IF YOU CAN THINK BACK TO WHEN YOU WERE THEIR AGE, BACK IN HIGH SCHOOL, WHAT DID YOU LIKE TO DO BACK IN HIGH SCHOOL AND WHAT DID YOU ENVISION YOUR CAREER WOULD BE LIKE, AND HOW DOES THAT COMPARE TO WHERE YOU ACTUALLY ARE TODAY?

I'LL START.

AS I MENTIONED, BACK WHEN I WAS IN YOUR SHOES, I WAS AN EXPLORER.

I WAS THE KID RUNNING UP IN THE MOUNTAINS.

I ALWAYS WONDERED LITERALLY WHAT WAS OVER THE HORIZON OR ON TOP.
OF THE MOUNTAIN FROM WHERE I GREW UP.

BUT JUST ENJOYING HIGH SCHOOL, THINKING ABOUT COLLEGE, BEING

FROM HELENA, MONTANA, THAT'S THE CAPITAL BUT STILL FELT SMALL SO

I WAS READY TO GO OUT TO COLLEGE AND LEAVE THE STATE AND EXPLORE

I THOUGHT I'D BE A LAWYER.

I WAS GOING TO REPRESENT KAREEM ABDUL-JABBAR.

I WAS NEVER GOING TO BE 7'5" FEET TALL BUT I DID END UP AT

NOTRE DAME AND PLAYED BASKETBALL FOR A FEW YEARS.

I TOOK THE COURSES FRESHMAN YEAR, I STILL DIDN'T KNOW WHAT
MY FINAL MAJOR WOULD BE.

00:29:14,950 --> 00:29:19,100
IT HAD TO DO WITH THE NATIONAL POLICIES AND POLITICS AND THINGS LIKE THAT.

00:29:19,099 --> 00:29:20,099
I SAID SPACE POLICY.

00:29:21,730 --> 00:29:24,690
I WAS SO KEEN ON EXPLORATION, I SAID WE NEED TO DO THIS FOR A PEACEFUL HUMAN PURPOSES.

00:29:24,690 --> 00:29:27,039
SO BY SOPHOMORE YEAR WHEN I CHOSE MY MAJOR OF AEROSPACE ENGINEERING.

00:29:29,648 --> 00:29:35,388
I DIDN'T KNOW WHAT AN ENGINEER WAS WITH.

00:29:32,388 --> 00:29:35,388
REALLY DIDN'T KNOW ANY ENGINEERS.

00:29:35,388 --> 00:29:38,519
AGAIN WHEN I GOT THE CHANCE TO BE A FACULTY MEMBER AT M.I.T., I WROTE AN ENGINEERING BACK.

00:29:42,099 --> 00:29:48,990
I WISH MY 17, 18-YEAR-OLD SELF NEEDED TO KNOW WHAT THAT WAS.
YOU DON'T HAVE TO HAVE IT ALL PLANNED OUT.

YOU CAN ZIG AND ZAG AND DO A LITTLE BIT OF THAT.

BACK WHETHER I WAS YOUR AGE AND IN HIGH SCHOOL, I WAS AT GAINESVILLE, FLORIDA.

BESIDES WATCHING THE GATORS PLAY FOOTBALL, THEY WERE BETTER BACK THEN, BUT I WAS PRETTY GOOD IN MATH AND SCIENCE AND I WASN'T REALLY SURE WHAT I WANTED TO DO.

THERE WAS COMMUNITY COLLEGE HAD OFFERED SOMETHING AT OUR HIGH SCHOOL WHERE YOU COULD PUT IN YOUR INTERESTS.

I KNEW I LIKED TO TRAVEL AS WELL AND HAD SOME INTEREST OUT.

POPPED ZOOLOGY AND ENGINEERING.

SO WITH THAT WHEN I LOOKED AT THE SALARIES OF THOSE TWO THINGS
I decided engineering would be a better choice.

So I didn't have any idea what an engineer was but I applied to university of Florida, got in, and discovered along the way I started to realize what different kind of engineering was.

I thought I wanted to be an environmental engineer and took an intro into environmental engineering and discovered I did not want to be an environmental engineer.

But I was pretty good at electrical engineering and it seemed that's where my talents lie, and that's where I ended up, electrical engineering, again not necessarily knowing what that is.
AS DAVA EXPLAINED, I DON’T THINK YOU HAVE TO HAVE IT ALL PLANNED OUT BUT I WAS ABLE TO GET INTO A CO-OP PROGRAM AT NASA.

WORKED ONE SEMESTER AND GO BACK TO COLLEGE EVERY OTHER SEMESTER.

AND IN THAT I DISCOVERED THIS IS WHAT ENGINEERS DO AND I LOVED IT.

THERE WAS REALLY EXCITING THINGS GOING ON.

I STARTED TO REALIZE IT WAS SOMETHING THAT I ACTUALLY COULD DO.

SO IN ALL OF THAT, I WAS ABLE TO MAKE MY DESIRES AS AN EARLY HIGH SCHOOL STUDENT WHICH I REALLY WANTED — I COULD — THE THING I COULD VISUALIZE IS REALLY TRAVELING THE WORLD AND MAKING A DIFFERENCE.
AND I TRULY THINK THAT HAVING THAT CAREER IN NASA HAS PAID OFF

THAT I REALLY HAVE BEEN ABLE TO MAKE THE DIFFERENCE THAT I

ALWAYS ENVISIONED.

NOT ONLY KIND OF TRAVEL THE WORLD WITH THINGS I'VE DONE ON

THE INTERNATIONAL SPACE STATION, BUT TALK ABOUT WORKING ON THE

WORLD.

NASA CERTAINLY HAS THAT VANTAGE POINT.

NOT ONLY THERE AND KIND OF OUR UNIVERSE AND BEYOND.

SO I'VE HAD A TREMENDOUS CAREER IN BEING ABLE TO ACHIEVE THE

VISION I HAD IN HIGH SCHOOL.

>> WHEN I WAS A YOUNGER KID I WAS THE KID THAT WAS ALWAYS

PICKING UP ROCKS.
EVEN TODAY MY HUSBAND SAYS DO WE HAVE TO HAVE ROCKS IN EVERY ROOM OF THE HOUSE?

AND THE ANSWER TO THAT IS ACTUALLY YES.

AND I THINK AROUND LATE MIDDLE SCHOOL, EARLY HIGH SCHOOL WHERE I REALIZED THERE WAS THIS THING CALLED A GEOLOGIST WHERE PEOPLE GOT PAID FOR PICKING UP ROCKS.

I THOUGHT, OKAY, SOUNDS LIKE A GREAT CAREER TO ME.

AROUND THE SAME TIME, NASA LANDED THE TWO VIKING LANDERS ON THE SURFACE OF MARS AND I THOUGHT, GEOLOGY PLUS MARS?

WHAT COULD BE BETTER THAN THAT.

BUT I WILL SAY, IN HIGH SCHOOL I WAS MOSTLY KIND OF FOCUSED ON SKIING, FOCUSED ON DOING FUN THINGS.
I thought math was a trial but I knew I had to work at it because if I wanted to be a scientist, if I wanted to be a geologist, I actually knew that math was a tool that I had to overcome.

So I took math classes.

I tried to challenge myself. I took some computer programming classes so I would learn how to use computers.

I didn't love it. But I knew I needed to learn it and I always liked science classes so I knew I was going to go down that path.

But I think the thing is, just because you think, I can't be a scientist if I'm not good at math, or I don't love physics
BECAUSE I CAN'T BE A SCIENTIST OR AN ENGINEER.

BUT YOU JUST HAVE TO SAY, I'M GOING TO GET THROUGH THIS, I'M GOING TO STICK WITH MY GOAL, I'M GOING TO STICK WITH MY DREAM AND I'M GOING TO MAKE IT HAPPEN.

THANK YOU.

WELL, IN HIGH SCHOOL I HAD NO IDEA WHAT I WOULD WANT TO DO AS A CAREER.

I WOULD SAY THE CLASSES I ENJOYED THE MOST WERE MY LITERATURE CLASSES AND ALSO MY MATH CLASSES.

I DID GET A CHANCE TO TAKE SOME CALCULUS IN HIGH SCHOOL, ALTHOUGH WE DIDN'T HAVE ANY KIND OF ENGINEERING CLASSES THERE.
THE BIG ACTIVITY I WAS IN WAS MUSIC.

629
00:33:56,769 --> 00:33:57,769
PLAYED THE FLUTE.

630
00:33:57,769 --> 00:33:59,649
I WAS IN THE CONCERT BAND, MARCHING BAND.

631
00:33:59,648 --> 00:34:03,768
I PLAYED IN THE CIVIC YOUTH ORCHESTRA IN SAN DIEGO AND

632
00:34:03,769 --> 00:34:05,980
THOUGHT ABOUT MAJORING IN MUSIC.

633
00:34:05,980 --> 00:34:09,490
BUT I REALLY KNEW KIND OF IN MY HEART OF HEARTS THAT WAS A

634
00:34:09,489 --> 00:34:13,259
REALLY HARD THING TO DO, TO ACTUALLY HAVE A CAREER IN.

635
00:34:13,260 --> 00:34:15,860
SO I CONTINUED TO PLAY ALL MY LIFE BUT DIDN'T ACTUALLY MAJOR

636
00:34:15,860 --> 00:34:16,860
IN IT.

637
00:34:16,860 --> 00:34:18,960
SO I WENT OFF TO SAN DIEGO STATE.

638
00:34:18,960 --> 00:34:21,780
AGAIN WAS THINKING ABOUT MUSIC, MAYBE BUSINESS.

639
00:34:21,780 --> 00:34:23,390
ENDED UP LOOKING INTO JOURNALISM.

640
00:34:23,389 --> 00:34:24,389
I changed my major five times.

So if you don't know what you want to do right now, you are in good company.

But it was really through a couple of different things that got me interested in physics.

One was through my math classes. As I mentioned, I had always liked math. I took it.

I ended up finishing up the calculus series in college and by the end of it realized I was the only one in there just taking it for fun.

Talked to the other students to find out why they were in there.
AND THEY WERE OF COURSE ALL IN ENGINEERING OR SCIENCE AND IT WAS PART OF WHAT THEY NEEDED TO DO.

THAT'S ONE OF THE REASONS I STARTED TO LOOK INTO PHYSICS.

THEN THERE WAS ALSO A CONFERENCE AT SAN DIEGO STATE UNIVERSITY WHERE I WAS IN SCHOOL WHERE THEY HAD SOME WOMEN SCIENTIST/ENGINEERS COME IN AND TALK ABOUT THEIR CAREERS.

THAT'S REALLY IMPORTANT.

LIKE YOU'VE KIND OF HEARD FROM THE REST OF THE PANEL, I REALLY HAD NO IDEA WHAT AN ENGINEER DID.

I HAD NO CONCEPT, YOU GET UP IN THE MORNING, YOU GO TO WORK.

WHAT IS IT YOU'RE ACTUALLY DOING IF YOU'RE AN ENGINEER?

OR IF YOU'RE A PHYSICIST?
IT WAS REALLY NICE TO HEAR FROM THESE OTHER WOMEN WHAT THAT WAS LIKE.

IT WAS REALLY THE COMBINATION OF THOSE THINGS THAT GOT ME INTERESTED IN PHYSICS.

THEN I HAD A CHANCE TO HAVE A COUPLE OF SUMMER JOBS WHERE I WORKED IN LABORATORIES AND SO THAT HELPED CONVINCE ME THAT I WANTED TO GO TO GRADUATE SCHOOL.

BECAUSE THE PEOPLE WHO ARE REALLY LEADING THE RESEARCH IN THE LABORATORIES ARE THE ONES THAT HAVE THE ADVANCED DEGREES.

SO WENT OFF TO STANFORD AND GOT A MASTERS AND A Ph.D.

AND THE FIRST YEAR I WAS AT STANFORD WAS THE YEAR THE SPACE SHUTTLE FLEW FOR THE FIRST TIME.
SO THAT WAS THE FIRST NEW SPACECRAFT IN A DECADE AT NASA,

SO IT WAS REALLY BIG NEWS.

AND OF COURSE, ALSO, JUST THREE YEARS BEFORE THAT, THERE HAD BEEN AN ASTRONAUT SELECTION.

THAT WAS WHEN THE FIRST WOMEN AND THE FIRST MINORITY ASTRONAUTS WERE SELECTED.

SO THAT WAS ANOTHER REALLY BIG DEAL.

AND A COUPLE YEARS AFTER THE SHUTTLE FLEW FOR THE FIRST TIME,

NASA WAS DOING ANOTHER ASTRONAUT SELECTION AND SOME OF THE OTHER GRADUATE STUDENTS I KNEW WERE APPLYING.

THAT'S REALLY WHEN I STARTED TO THINK, WOW!

WHAT A FANTASTIC CAREER THAT WOULD BE AND GOT THE INFORMATION
FROM NASA AND MADE THE DECISION THAT AS SOON AS I FINISHED UP MY
DOCTORATE, I WOULD APPLY TO THE ASTRONAUT PROGRAM.

>> GREAT.

THANK YOU ALL VERY MUCH.

GREAT ANSWERS THERE.

SO, ALL OF YOU CAN KIND OF SEE FROM THE ANSWERS THAT THEY'VE
PROVIDED HERE, NOT ANYBODY SITTING UP ON THIS STAGE
PROBABLY KNEW WHEN THEY WERE YOUR AGE THAT THEY WERE GOING TO
END UP IN THESE POSITIONS UP HERE ON THIS STAGE.

SO THAT LETS YOU KNOW THAT THERE IS DEFINITELY TIME FOR YOU TO
CONSIDER WHAT IT IS YOU WANT TO DO.

BUT EACH OF THEM ALSO TALKED ABOUT EXPOSING YOURSELVES,
GIVING YOURSELVES OPPORTUNITY
FOR WORKING IN THE SUMMER TIMES

AND JUST EXPOSING YOURSELF TO
THINGS IN THE S.T.E.M.

BECAUSE THAT IS KIND OF WHAT

HOOKS YOU, WHEN YOU'RE ACTUALLY
THERE PHYSICALLY DOING IT AND

YOU GET A CHANCE TO SEE HOW FUN
IT IS, HOW CLOSE AND PERSONAL,

IT IS SOMETHING YOU NEVER WANT
TO LET GO OF.

NOW JUST A REMINDER FOR THOSE
PEOPLE ON NASA-TV, YOU ARE

WATCHING THE NASA WOMEN AND
ACTION EVENT LIVE FROM GODDARD

SPACEFLIGHT CENTER HERE IN
GREENBELT, MARYLAND.

WE CERTAINLY WANT YOU TO
PARTICIPATE ALONG WITH US, SO IF

YOU HAVE ANY QUESTIONS, PLEASE
SEND THEM TO #WOMENATNASA† -- NO,

I'M SORRY.
OKAY.

LET'S GET SOME QUESTIONS FROM OUR STUDENTS.

OUR FIRST QUESTION.

>> HI.

MY NAME IS TIFFANY JACKSON.

I'M A SENIOR.

MY QUESTION IS, WHAT QUALITIES THINK PUT YOU ABOVE OTHERS FOR YOUR POSITION IN LEADERSHIP?

>> SENSE OF HUMOR.

>> TEAMWORK.

>> TEAMWORK SOMEBODY DEFINITELY ONE.
>> YEAH.

AND LISTENING.

CONSENSUS BUILDING.

>> I THINK IT PARTLY STARTS WITH YOUR EDUCATION.

I THINK THAT WAS IMPORTANT TO ALL OF US IN GETTING THE POSITION THAT WE ARE.

PART OF YOUR EARLY CAREER IS SORT OF BUILDING THAT CREDIBILITY, SHOWING THAT YOU CAN APPLY WHAT YOU LEARNED IN SCHOOL TO THE PROBLEM SOLVING THAT IS SO MUCH A PART OF WHAT WE DO AT NASA AND WHAT IS DONE IN OTHER S.T.E.M.

CAREERS.

THEN I WOULD ADD WHAT EVERYBODY ELSE SAID AS WELL.

>> TAKE OPPORTUNITIES TO JUST
SEND A MESSAGE TO Y’ALL, YOU

00:38:46,099 --> 00:38:48,940
DON’T HAVE TO BE THE BEST IN MATH AND SCIENCE.

00:38:48,940 --> 00:38:51,362
THAT’S MAYBE WHAT PEOPLE THAT I HEARD.

00:38:51,362 --> 00:38:53,789
THAT TENDS TO WEED PEOPLE OUT OF THE S.T.E.M.

00:38:53,789 --> 00:38:54,789
FIELD.

00:38:54,789 --> 00:38:58,980
THEY’RE IMPORTANT SO YOU NEED TO TAKE THOSE AS TOOLS, BUT DON’T

00:38:58,980 --> 00:39:00,809
WORRY ABOUT BEING NUMBER ONE AND TWO.

00:39:00,809 --> 00:39:02,289
IT’S TRAINING, SKILL DEVELOPMENT.

00:39:02,289 --> 00:39:06,610
BUT AGAIN, YOU CAN LOVE THE ARTS, DESIGN, MAKE THINGS, HELP

00:39:06,610 --> 00:39:07,610
PEOPLE IN HUMANKIND.

00:39:07,610 --> 00:39:10,500
THAT’S WHAT DOCTORS, ENGINEERS, SCIENTISTS, THAT’S WHAT WE ALL

00:39:10,500 --> 00:39:11,500
DO.

00:39:11,500 --> 00:39:12,739
SO THAT SHOULD BE THE PASSION.
GO WITH THAT.

BE PROFICIENT.

DON'T WORRY ABOUT BEING THE BEST.

I THINK YOU'LL GET THAT.

I WANT TO PASS THAT ON.

WE WANT TO CHANGE THE CONVERSATION WITH YOU.

YOU'RE ALL IN.

YOU'RE ALL SUPER TALENTED, YOU'RE HERE AND WE NEED EVERY SINGLE ONE OF YOU.

THANK YOU FOR YOUR QUESTIONS.

APPRECIATE THAT.

OUR NEXT QUESTION.

MY QUESTION IS, HOW WOULD YOU ADJUST TO WORKING IN A
MALE-DOMINATED CAREER FIELD AND
HAVE YOU EVER HAD TO CONFORM
YOUR PERSONALITY OR IDEAS WHILE
WORKING IN THIS FIELD?
>> WOW.
GOOD QUESTION.
>> I THINK WE SHOULD ALL COMMENT
ON THAT.
I WAS DEFINITELY IN MALE
DOMINATED AEROSPACE ALL MY LIFE.
I WAS 1 OF 2 WOMEN IN AEROSPACE
ENGINEERING FOR UNDERGRADUATE.
THEN IT GOT A LITTLE BIT BETTER
IN GRADUATE SCHOOL BUT I WAS THE
FIRST WOMAN FACULTY MEMBER, 1 OF
35.
I LIKE MEN.
THAT'S GOOD.
LIKE WORKING WITH EVERYBODY.
BUT IT'S VERY NOTICEABLE.

I HAVE TO SAY.

NOW OVER MY CAREER, WHEN I DISTINCTLY REMEMBER THE DAY I

DISTINCTLY REMEMBER THE DAY I

HAD A MAJORITY OF WOMEN IN MY

GRADUATE COURSE, MAJORITY OF

WOMEN THAN MEN.

WOW.

SO THIS ALSO TAUGHT ME A LOT.

DON'T CHANGE YOURSELF.

YOU KNOW?

YOU GOT TO BE TRUE TO YOURSELF

AND DON'T LET ANYONE CHANGE YOU.

THAT SERVED ME WELL.

YOU DON'T NEED TO BE LIKE THEM.

SOMETIMES I CRY AT WORK.

SOMETIMES I CRY AT WORK.

SOME OTHER... SOME PEOPLE WOULD

GET IN A FIGHT AND THAT WOULD
HURT MY FEELINGS.

THEY WEREN'T EVEN TALKING TO ME.

I'M CRYING.

OH, GOODNESS?

YOU KNOW, THAT'S OKAY.

>> I THINK FOR ME, MINE HAS BEEN
THAT I DON'T REALLY NOTICE I'M A

WOMAN IN THE ROOM.

I'M A PERSON ON THE TEAM.

AND BECAUSE I MEAN FROM
ELECTRICAL ENGINEERING IN

COLLEGE, I WAS THE ONLY†-- MOST
OF THE TIMES THE ONLY WOMAN IN

THE ROOM OR 1 OF 2 MAYBE
PERHAPS.

BUT I MIGHT†-- IT'S MORE IN
HINDSIGHT THAT I REMEMBER THAT.

WHEN I WAS IN THE ROOM, IT MIGHT
BE JUST A REAL QUICK THOUGHT BUT

803
00:41:44,070 --> 00:41:48,789
I DIDN'T REALLY EVEN†-- IT
DIDN'T FAZE ME IN ANY WAY.

804
00:41:48,789 --> 00:41:51,730
AND THEN WITHIN NASA, I'VE
ALWAYS BEEN ONE ON THE TEAM.

805
00:41:51,730 --> 00:41:54,949
I'VE BEEN ONE OF THE PEOPLE ON
THE TEAM GETTING THE JOB DONE.

806
00:41:54,949 --> 00:41:58,509
AND SO I'VE NEVER REALLY THOUGHT
ABOUT OUR TEAM AS MEN AND WOMEN

807
00:41:58,510 --> 00:42:02,140
OR DIFFERENT COLORS OF PEOPLE OR
ANYTHING ELSE.

808
00:42:02,139 --> 00:42:03,139
RIGHT?

809
00:42:03,139 --> 00:42:07,170
IT WAS JUST WE ALL HAVE A JOB TO
DO AND WE NEED ALL OF US.

810
00:42:07,170 --> 00:42:08,900
WE DO REALLY HARD THINGS IN
NASA.

811
00:42:08,900 --> 00:42:11,760
REALLY AMAZING THINGS, THINGS
THAT NOBODY ELSE DOES.

812
00:42:11,760 --> 00:42:14,940
AND SO WE REALLY NEED THAT TEAM
ALL COMING TOGETHER AND MAKING

813
00:42:14,940 --> 00:42:15,940
IT HAPPEN.

814
00:42:15,940 --> 00:42:20,119
SO I THINK THAT'S FOR ME HOW
IT-- IT'S BEEN REALLY GOOD FOR

815
00:42:20,119 --> 00:42:25,309
ME AND I DIDN'T NECESSARILY"-- I
KNOW SOME PEOPLE NEED TO SEE

816
00:42:25,309 --> 00:42:29,619
THAT THERE IS A WOMAN IN THE
ROLE BEFORE YOU FEEL CONFIDENT

817
00:42:29,619 --> 00:42:30,619
IN BEING THERE PERHAPS.

818
00:42:30,619 --> 00:42:31,949
I MEAN I'VE LEARNED THAT ALONG
THE WAY.

819
00:42:31,949 --> 00:42:32,949
I NEVER DID.

820
00:42:32,949 --> 00:42:34,500
I NEVER THOUGHT ABOUT IT THAT
WAY.

821
00:42:34,500 --> 00:42:40,510
IT JUST WAST-- SO I THINK FOR ME
IT REALLY HASN'T BEEN A BARRIER

822
00:42:40,510 --> 00:42:41,510
OR ANYTHING.

823
00:42:41,510 --> 00:42:46,070
BUT I THINK AS ELLEN SAID"-- I
MEAN DAVA SAID, BE YOURSELF AND

824
00:42:46,070 --> 00:42:49,559
I THINK THAT'S WHAT'S MOST
IMPORTANT.

825
00:42:49,559 --> 00:42:52,110
>> SOMETIMES ESPECIALLY EARLY IN
MY CAREER, I WOULD BE FEELING

826
00:42:52,110 --> 00:42:56,120
LIKE I WAS ONE OF THE TEAM AND JUST LIKE EVERYBODY ELSE.

AND ONE OF THE MEN WOULD MAKE A COMMENT THAT WOULD MAKE ME STOP

AND THINK, OH, YEAH, THE REST OF THE PEOPLE IN THIS ROOM DON'T

LOOK LIKE ME.

THEY WOULD MAKE ME FEEL, OH, YEAH, YOU'RE A GIRL.

SO A LOT OF THE TIMES, ESPECIALLY EARLY IN MY CAREER

WHEN I WASN'T VERY SELF-CONFIDENT, I WOULD FEEL

LIKE I HAD TO WORK TWICE AS HARD JUST TO BE TAKEN HALF AS SERIOUSLY.

BUT AS I GOT MORE CONFIDENT, AS I WENT ON IN MY CAREER AND

REALIZE THEY ACTUALLY NEED ME HERE IN THE ROOM, AND I NOW LOOK

BACK AT PEOPLE LIKE KATHERINE JOHNSON WHO, AN PROGRAM WOMAN IN
THE EARLY 1960s.

A LOT OF THE TIME SHE WAS NOT MADE TO FEEL WELCOME IN THE ROOM.

PEOPLE INTERVIEWED HER.

SHE SAID, I KNEW I BELONGED THERE.

SO NOW ESPECIALLY WHEN I GET A CHANCE TO TALK TO KIDS LIKE YOU,

I SAW CHANNEL YOUR INNER KATHERINE JOHNSON.

IF ANYBODY EVER MAKES YOU FEEL LIKE YOU DON'T BELONG IN THAT

ROOM, REMEMBER HER AND SAY, I'M GOING TO BE LIKE KATHERINE

JOHNSON AND I'M GOING TO FEEL LIKE I BELONG BECAUSE I DO AND

THEY ACTUALLY NEED ME HERE TO GET THIS WORK DONE.

>> YEAH, I WOULD SAY IT'S CHANGED A LOT THROUGHOUT MY
CAREER.

IT WAS HARDER WHEN I WAS YOUNG.

I WOULD SAY WHEN I WAS IN COLLEGE AND GRADUATE SCHOOL AND EARLY ON IN MY CAREER, I WAS OFTEN THE ONLY WOMAN IN A CLASS.

OR 1 OF 2 AND I FELT SELF-CONSCIOUS.

I FELT LIKE I STOOD OUT.

IT MADE ME A LITTLE BIT RELUCTANT TO RAISE MY HAND AND ASK QUESTIONS OR TO MAKE A COMMENT.

ONE OF THE THINGS I DIDN'T GET AROUND TO WHEN I WAS IN SCHOOL,

ALL PROFESSORS HAVE OFFICE HOURS WHEN YOU'RE IN COLLEGE.

IF I HAD A QUESTION I WOULD GO SEE A PROFESSOR.

TURNS OUT PROFESSORS LOVE IT WHEN STUDENTS COME TALK TO THEM!
PEOPLE SOMETIMES HAVE AN IDEA OF LIKE, ONLY PEOPLE WHO ARE STRUGGLING GO AND THEY’LL THINK SOMETHING—but actually if you talk to any professor, they actually love it when people come and talk to them because it says you’re really interested in what they’re trying to teach and you’re trying to get the most out of that class.

Once I started working, one of the pieces of advice that a couple of my earlier supervisors told me is, you have to speak up when you’re meeting. That was hard for me. I don’t think it was so much that I was a woman.
I WAS JUST NATURALLY A QUIET PERSON.

875
00:45:11,559 --> 00:45:14,860
 Didn’t normally raise my hand and talk.

876
00:45:14,860 --> 00:45:17,789
 So that was something that I kind of needed to force myself

877
00:45:17,789 --> 00:45:21,070
 To do a little bit earlier in my career.

878
00:45:21,070 --> 00:45:24,430
 It is actually gotten lots and lots easier as I’ve gone through

879
00:45:24,429 --> 00:45:25,509
 My career.

880
00:45:25,510 --> 00:45:28,080
 That’s another thing that I would tell you, that if you do

881
00:45:28,079 --> 00:45:30,670
 Feel that way at the beginning, it is not always going to feel

882
00:45:30,670 --> 00:45:35,180
 That way.
 And now I really don’t think

883
00:45:35,179 --> 00:45:38,029
 About it at all.

884
00:45:38,030 --> 00:45:42,560
 I’m a member of the team and it is not something that is really

885
00:45:42,559 --> 00:45:47,139
 Part of what I think about day to day at work.
THANK YOU ALL VERY MUCH.

THAT WAS WONDERFUL.

WONDERFUL.

[†APPLAUSE†]

NOW WE'RE GOING TO GO TO SOCIAL MEDIA AND ASK QUESTIONS FROM SOCIAL MEDIA.

KATHY FLYNN WANTS TO KNOW WHAT'S YOUR FAVORITE INVENTION?

YOU KNOW, ONE OF MY FAVORITE NASA INVENTIONS IS TWO PROFESSORS AT M.I.T., ONE OF WHOM IS AT NASA NOW THEY HAD THE STUDENTS FROM M.I.T. MUCH WITH A THE "STAR WARS" VIDEO WHERE LUKE SKYWALKER IS TRAINING WITH THAT
LITTLE BALL AND LIGHT SABER.

00:46:31,969 --> 00:46:35,899
THERE WAS A LITTLE BALL THAT WAS FLOATING AROUND THAT HE WAS PRACTICING WITH.

00:46:35,900 --> 00:46:40,930
HE TOLD THE STUDENTS I WANT YOU TO INVENT ONE OF THOSE.

00:46:40,929 --> 00:46:42,649
IT'S CALLED SPHERES.

00:46:42,650 --> 00:46:45,190
IF YOU GOOGLE IT.

00:46:45,190 --> 00:46:51,639
IT IS LIVE UP ON THE SPACE STATION.

00:46:51,639 --> 00:46:55,009
STUDENTS GET TO OPERATE IT AND WE'RE EVEN USING IT TO SAY HOW CAN WE USE LITTLE ROBOTS LIKE THAT TO ACTUALLY DO WORK UP ON

00:46:55,010 --> 00:46:56,010
THE SPACE STATION.

00:46:56,010 --> 00:46:59,920
DAVA TALKED EARLIER ABOUT THE IMPORTANCE OF ARTS.

00:46:59,920 --> 00:47:01,579
THAT'S WHY IT IS SO CRITICAL.

00:47:01,579 --> 00:47:05,079
YOU HAVE TO IMAGINE SOMETHING BEFORE YOU INVENT IT.
WHETHER WE GET OUR IDEAS FROM SCIENCE FICTION OR FROM INNOVATIVE FUTURE ENGINEER LIKE ONE OF YOU, IT IS THOSE GREAT IDEAS THAT TURN INTO INVENTIONS AND THAT'S WHAT'S SO IMPORTANT.

I DON'T HAVE A FAVORITE PAST ONE BUT A FAVORITE FUTURE ONE WOULD BE TELEPORTING.

I SENT MY CHILDREN A TEXT AND I MEANT TO SAY TELEWORKING AND IT SAID TELEPORTING.

I DON'T HAVE A FAVORITE.

ONE OF THE ANCILLARY JOBS THAT I HAVE IS I'M ON THE NOMINATION EVALUATION COMMITTEE FOR THE NATIONAL MEDAL OF TECHNOLOGY AND INNOVATION.

SO OUR COMMITTEE MAKES RECOMMENDATIONS FIRST TO THE
SECRETARY OF COMMERCE, AND THEN TO THE PRESIDENT.

AND ONE OF THE CRITERIA IS THAT IT NEEDS TO HAVE MADE A MAJOR IMPACT ON SOCIETY.

AND SO A LOT OF THE NOMINATIONS THAT WE GET ARE FROM WORK THAT WE'VE DONE 30 YEARS AGO BECAUSE OF THE FACT THAT THAT WORK†—

THAT INVENTIONS HAVE NOW SEEPED INTO COMPANIES THAT MAY NOW BE VERY LARGE MULTI-NATIONAL COMPANIES.

BECAUSE OF THAT, VERY FEW OF THE PEOPLE THAT WE READ ABOUT ARE WOMEN.

AND SO I ALWAYS SIT THERE AND THINK, WELL, I CERTAINLY HOPE THAT AS WE'RE DOING THIS 20 YEARS FROM NOW THAT WE'LL SEE A LOT MORE WOMEN WHO HAVE BEEN INVOLVED IN INVENTIONS THAT HAVE
NOW GROWN INTO COMPANIES OR PRODUCTS OR THINGS THAT HAVE A GREAT IMPACT ON OUR SOCIETY.

ONE GREAT EXAMPLE OF THAT IS THE JAWS OF LIFE. ARE YOU FAMILIAR WITH THAT?

THE JAWS OF LIFE THAT PEOPLE USE TO CUT PEOPLE OUT OF VEHICLES?

WE HAD TO INVENT THAT AS A PART OF NASA WORK BECAUSE WE HAD THE IMPOSSIBLE TASK OF TRYING TO CUT METAL ON THE INTERNATIONAL SPACE STATION IN A WEIGHTLESS ENVIRONMENT.

SO WE DEVELOPED IT FOR THAT AND TRANSFERRED IT TO THE PRIVATE INDUSTRY SO WE'RE SAVING LIVES EVERY DAY WHEN PEOPLE GET IN THOSE ACCIDENTS AND CARS ARE ALL MANGLED UP AND YOU HAVE TO HAVE PEOPLE CUT OUT OF THE VEHICLES.
SO THE NEXT QUESTION THAT I HAVE FOR YOU—WELL, FIRST OF ALL IN THE AUDIENCE HERE, WE HAVE MANY GIRLS HERE, AND THEY TALKED TO YOU ABOUT WHERE THEY WERE WHEN THEY WERE IN YOUR SEATS IN HIGH SCHOOL.

HOW MANY OF YOU HAVE THOUGHT ABOUT WHAT IT IS THAT YOU WANT TO DO WHEN YOU BECOME AN ADULT, A FULL ADULT?

ARE ANY OF YOU INTERESTED IN S.T.E.M. FIELDS ALREADY?

YAY!

LOOK AT ALL THESE HANDS!

ONE THING I'D LIKE TO ASK OF THE PANEL MEMBERS, WHAT ONE PIECE OF
ADVICE WOULD YOU GIVE TO THE
YOUNG GIRLS OUT THERE WHO ARE
INTERESTED OR NOT EVEN YET
INTERESTED BUT WHO ARE THINKING
ABOUT S.T.E.M.

WHAT ONE PIECE OF.

ADVICE WOULD YOU OFFER THEM?

>> MINE'S SIMPLE.

YOU CAN DO IT.

THEY ARE THE MOST FUN FIELDS.

I'M VERY BIASED.

BUT I SAY GO FOR IT AND YOU CAN
ABSOLUTELY DO IT.

YOU'LL NEVER REGRET IT.

YOU'LL NEVER LOOK BACK.

>> I COMPLETELY AGREE WITH THAT.
MAINLY, DON'T LET FEAR GET IN YOUR WAY.

THAT'S A NORMAL FEELING.

IT MEANS YOU'RE DOING SOMETHING THAT'S HARD AND IT'S OKAY.

THAT MEANS YOU'RE CHALLENGING YOURSELF.

SO DON'T LET FEAR STOP YOU FROM DOING THINGS.

THE S.T.E.M. FIELDS ARE A TOOL THAT WE USE TO HELP MAKE THE WORLD A BETTER PLACE, WHETHER IT'S STUDYING CLIMATE CHANGE, WHETHER IT'S INVENTIONS THAT SPIN OFF FROM NASA THAT HELP US CLEAN WATER IN DEVELOPING COUNTRIES AROUND THE WORLD.

SO PLEASE GO INTO THEM BECAUSE WE HAVE ALL THESE CHALLENGES IN
FRONT OF US FROM CLIMATE CHANGE, GETTING HUMANS TO MARS, TO LIVING IN THIS VERY TECHNOLOGICAL WORLD.

I REALLY WANT YOU GUYS TO STICK WITH IT, FOLLOW YOUR DREAMS AND BECOME AN ENGINEER OR A SCIENTIST.

>> WONDERFUL.

>> I'D LIKE TO SAY MAKE SURE YOU KEEP YOUR OPTIONS OPEN.

THAT HAS A LOT TO DO WITH CLASSES YOU TAKE IN HIGH SCHOOL AND WHAT YOU END UP TAKING IN COLLEGE.

IT IS IMPORTANT NOT TO NARROW DOWN TOO SOON AND TO REALIZE YOUR INTERESTS MAY CHANGE, THE WORLD MAY CHANGE, AND IF YOU HAVE SOME OF THAT BEHIND YOU, YOU HAVE SO MUCH MORE OPTIONS AVAILABLE TO YOU.
>> GREAT.

WELL, I'D LIKE TO THANK YOU, PANEL MEMBERS, SO MUCH FOR JOINING US HERE FOR THIS NASA WOMEN IN ACTION ACTIVITY.

THANK YOU ALL SO MUCH IN THE AUDIENCE FOR JOINING US AND THANK YOU TO ALL OF YOU OUT THERE ON NASA-TV FOR JOINING US.

I'D ALSO LIKE TO THANK DR. HANDLESMAN FOR JOINING US.

WE REALLY APPRECIATE YOU JOINING US AND TAKING THE TIME TO BE WITH US TODAY.

AND FOR THOSE OF YOU WHO OUT THERE WHO MISSED IT OR YOU CAME IN LATE, DON'T WORRY.

WE'VE ACTUALLY RECORDED THIS.
YOU CAN WATCH THIS ON NASA-TV AT NASA.GOV/NASATV.

THANK YOU VERY MUCH FOR JOINING US.

WE REALLY APPRECIATE IT.

[†APPLAUSE†]