



1

00:00:08,880 --> 00:00:13,870

>> Good morning, thank you for being here with us today and to those watching on NASA

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00:00:13,870 --> 00:00:18,450

TV, welcome to our home.

My name is Maria Santos and I am the chair

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00:00:18,450 --> 00:00:23,750

of the Hispanic outreach alliance, also known as hola here at NASA headquarters.

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00:00:23,750 --> 00:00:30,820

Our vision is to serve as a resource for NASA employees and agency leaders.

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00:00:30,820 --> 00:00:40,180

And to build cross-cultural awareness in an inclusive environment for all employees.

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00:00:40,180 --> 00:00:46,680

I was recently asked why do I continue to do this type of work.

7

00:00:46,680 --> 00:00:51,020

I do it because I believe in the power of diversity and inclusion.

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00:00:51,020 --> 00:00:59,560

Diversity in ideas, race, ethnicity, background, and experience.

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00:00:59,560 --> 00:01:03,730

And NASA knows a lital bit about doing just that.

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00:01:03,730 --> 00:01:16,479

It is actually at the heart of our mission.

Diversity is basically accepting and acknowledging

11
00:01:16,479 --> 00:01:26,850
differences, um, it builds an opportunity
for dialogue, and inclusion, well, to be including

12
00:01:26,850 --> 00:01:32,999
basically means to be part of a community,
to belong, to feel that you exist, to feel

13
00:01:32,999 --> 00:01:37,049
that you are seen, that you are part of something
bigger than yourself.

14
00:01:37,049 --> 00:01:41,560
We should not only experience this in our
homes but also in our communities, and especially

15
00:01:41,560 --> 00:01:48,179
in our work place.
Hispanics call this to be with family.

16
00:01:48,179 --> 00:01:55,119
Today you will hear Diana TRUJILLO and Jose
Hernandez.

17
00:01:55,119 --> 00:01:59,829
We decided to call our program ASPIRA Kohn
NASA, aspire with NASA.

18
00:01:59,829 --> 00:02:05,229
But that was only after we realized the
power of their stories. Two individuals born

19
00:02:05,229 --> 00:02:09,979
in two different countries with different
back grnlds and journeys but with the same

20
00:02:09,979 --> 00:02:16,069
dream.
I would like to introduce you first to Mrs.\hKrista

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00:02:16,069 --> 00:02:25,730

PAQUIN.

She is responsible for the integration of

22

00:02:25,730 --> 00:02:35,030

agency-wide mission support, NASA headquarters operations, Nassau partnerships among other

23

00:02:35,030 --> 00:02:43,200

things. Basically she's kind of a big deal.

She spent four years in the private sector

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00:02:43,200 --> 00:02:49,750

and prior to that 22 year t our Goddard space center.

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00:02:49,750 --> 00:02:54,940

We call her our champion.

Her role as champion she not only coaches

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00:02:54,940 --> 00:03:04,760

and advises us but also encourages us and also advocates for us when it comes to development,

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00:03:04,760 --> 00:03:15,290

dpi diversity, development, engagement, also special programming like the one here today.

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00:03:15,290 --> 00:03:20,450

She's quick to ask me how can I help, do you need anything.

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00:03:20,450 --> 00:03:25,480

As busy as she is helping to run an agency and all, not once has she told me she's too

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00:03:25,480 --> 00:03:30,690

busy or that she can't meet with me.

I am grateful for her leadership, friendship,

31
00:03:30,690 --> 00:03:34,410
and support.
Now, ladies and gentlemen, please help me

32
00:03:34,410 --> 00:03:40,170
in welcoming NASA's associate administrator
for mission support, KRISTA\hPAQUIN.

33
00:03:40,170 --> 00:03:43,720
[APPLAUSE]
[silence]

34
00:03:43,720 --> 00:03:59,470
>> I don't think I need this stool, but I'll
take it.

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00:03:59,470 --> 00:04:03,720
Good morning, everybody, thank you so, so
much for joining us and welcome.

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00:04:03,720 --> 00:04:07,930
I want to especially welcome the students,
I think we're expecting a group of students

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00:04:07,930 --> 00:04:11,910
to join us today.
I hope they feel comfortable coming on in

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00:04:11,910 --> 00:04:18,009
when they arrive.
We hope today's students will thrive here

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00:04:18,009 --> 00:04:29,590
with a dream to reach new heights.
>> The world looks to us they are very clear

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00:04:29,590 --> 00:04:39,570
in the fact that they will look to us.
And the success of our program is dependent

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00:04:39,570 --> 00:04:43,490
on leveraging the talents and diversity of
our country.

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00:04:43,490 --> 00:04:48,350
So I hope that the students of today see themselves
in our future and they're part of awr team

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00:04:48,350 --> 00:04:52,360
that will put boots on Mars.
It's an exciting future and we hope you aspire

44
00:04:52,360 --> 00:04:55,990
to be a part of it.
His Hispanic community is the fastest\h■

45
00:04:55,990 --> 00:05:02,540
■\hcome on in, join us.
Is the fastest growing majority in the United

46
00:05:02,540 --> 00:05:06,700
States.
We need our Hispanic youth to be part of our

47
00:05:06,700 --> 00:05:12,440
program for us to succeed in our mission.
After all, NASA has been the best place to

48
00:05:12,440 --> 00:05:15,270
work in government for the last four years
ago.

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00:05:15,270 --> 00:05:18,370
If you don't know that, it's very important
to understand why.

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00:05:18,370 --> 00:05:26,530
We're here ie today because we're committed
to engaging our diverse work force and enabling

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00:05:26,530 --> 00:05:31,310

all of us to succeed.

The group has put together an outstanding

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00:05:31,310 --> 00:05:36,660

program, I want to thank mu Maria for their
commitment, their passion, their hardwork.

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00:05:36,660 --> 00:05:41,340

They understand community serve owbs and their
service is not just to NASA headquarters but

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00:05:41,340 --> 00:05:44,889

they've been out working in the communities,
they've been painting schools, they've been

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00:05:44,889 --> 00:05:50,450

meeting with other federal leaders in the
Hispanic community to bring together that

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00:05:50,450 --> 00:05:53,300

community.

That take as lot of energy, these are other

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00:05:53,300 --> 00:05:58,120

duties that are assigned and they do with
a commitment and energy and enthusiasm that

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00:05:58,120 --> 00:06:03,650

I think is a model for many of us. Rn if any
of you in the room have not been able to find

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00:06:03,650 --> 00:06:11,040

time for the group, I encourage you to carve
out time to join the team today.

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00:06:11,040 --> 00:06:19,889

My belief in community service, service to
others is the rent you pay for the space you

61
00:06:19,889 --> 00:06:27,050
live in on this earth, Muhammad Ali.
So we have an obligation to engage.

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00:06:27,050 --> 00:06:32,600
We are very fortunate to be a part of this
country and so service to each other, service

63
00:06:32,600 --> 00:06:36,870
to NASA, service to our community is vital
and thank you for the work that you do.

64
00:06:36,870 --> 00:06:42,860
I'm going to quickly review the agenda today.
We have a very, very exciting program.

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00:06:42,860 --> 00:06:47,190
I'm excited to hear from our speakers.
First we're going to hear before speakers

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00:06:47,190 --> 00:06:51,210
come up, we're going to hear a brief video
from Charlie Bolden.

67
00:06:51,210 --> 00:06:59,979
And then we'll hear from Diana TRUJILLO and
Jose Hernandez, boight with their personal

68
00:06:59,979 --> 00:07:04,460
stories.
We'll have some time for the QQ & A.

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00:07:04,460 --> 00:07:11,870
And then we're going to hear from Donald James
from the office of education about our resources

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00:07:11,870 --> 00:07:16,860
that we have available.
We'll do our closing remarks and our thank

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00:07:16,860 --> 00:07:22,100
yous at the end of the program and again I
thank you all for coming today.

72
00:07:22,100 --> 00:07:33,790
I would like to take a moment to briefly introduce
our NASA administrateor JPL does not run NASA.

73
00:07:33,790 --> 00:07:39,889
It is Charlie Bolden and we call him the administrator,
not the director.

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00:07:39,889 --> 00:07:45,229
Major general Charles frank Bolden junior,
we all know by the way as Charlie B has been

75
00:07:45,229 --> 00:07:50,120
our administrator now for over seven years.
He was appointed by President Obama.

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00:07:50,120 --> 00:07:55,990
He is the longest■serve owg Obama appointee
in the federal government right now.

77
00:07:55,990 --> 00:08:03,390
He retired from the Marine Corps after 34
year chz included 14 years as NASA's astronaut

78
00:08:03,390 --> 00:08:09,340
crew.
He traveled to ORBIT four times aboard the

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00:08:09,340 --> 00:08:14,810
space shuttle, two as commander f two missions
and two as piloting two others.

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00:08:14,810 --> 00:08:21,919
His flights included deployment of the Hubbell
space telescope and the first joint U.S. Russian

81
00:08:21,919 --> 00:08:26,630
shuttle mission which feature ad cosmonaut
as a member of his crew.

82
00:08:26,630 --> 00:08:31,830
He was inducted into the astronaut hall of
fame in May of 2006.

83
00:08:31,830 --> 00:08:37,320
He came from a very modest background.
Born in Columbia, South Carolina, and worked

84
00:08:37,320 --> 00:08:42,979
hard, studied hard, and made his way to receive
an appointment to the U.S. naval academy,

85
00:08:42,979 --> 00:08:48,180
get a BA in electrical science, commissioned
as a second lieutenant in the Marine Corps,

86
00:08:48,180 --> 00:08:52,540
he flew more than 100 combat missions in north
and south Vietnam.

87
00:08:52,540 --> 00:09:02,610
Stem education, science and math, very important
if you want to be an astronaut, study hard.

88
00:09:02,610 --> 00:09:07,910
Go,, stem.
And that's what he'll tell you if you ask

89
00:09:07,910 --> 00:09:15,510
him what it takes to be an astronaut.
Study hard and focus on the right experience

90
00:09:15,510 --> 00:09:18,140
and background.
And as Maria said earlier he couldn't be here

91
00:09:18,140 --> 00:09:21,290
today.
She reached out in her leadership role and

92
00:09:21,290 --> 00:09:25,529
her confidence in her leadership role to Charlie
to ask if he would say a few words to you

93
00:09:25,529 --> 00:09:30,280
all in a video.
At this point, I'd like to introduce the video.

94
00:09:30,280 --> 00:09:35,640
Thank you.
>> Good morning and welcome to NASA headquarters.

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00:09:35,640 --> 00:09:38,940
I'm sorry I can't join you today since I'm
out of town.

96
00:09:38,940 --> 00:09:45,790
But I know you'll have a wonderful gathering.
Today we're here to honor the distinct tapestry

97
00:09:45,790 --> 00:09:56,410
that is the Hispanic community and to acknowledge
and the Hispanic employees make up an

98
00:09:56,410 --> 00:10:05,320
important part of our work force across all
NASA's centers. NASA and our entire nation

99
00:10:05,320 --> 00:10:11,320
will continue to rely on them and their contributions
in the decades to come as we implement our

100
00:10:11,320 --> 00:10:17,680
journey to Mars, and make cutting edge breakthroughs
in science, technology, and aeronautics.

101
00:10:17,680 --> 00:10:24,550
Today you're in for a real treat.
You'll get to hear from two outstanding individuals,

102
00:10:24,550 --> 00:10:34,080
Diana TRUJILLO, and Jose Hernandez.
They are examples of the amazing talent that

103
00:10:34,080 --> 00:10:39,740
fuels this agency.
Diana TRUJILLO's story is one of dedication,

104
00:10:39,740 --> 00:10:44,300
perseverance and drive.
She was born and raised in Columbia and moved

105
00:10:44,300 --> 00:10:53,770
to the U.S. to study aerospace mechanics.
She began her career in Maryland.

106
00:10:53,770 --> 00:10:59,899
She and her family moved to California where
she joined us jet propulsion laboratory.

107
00:10:59,899 --> 00:11:04,160
She is now the mission lead for our Mars curiosity
Rover.

108
00:11:04,160 --> 00:11:10,240
This mission has inspired millions of stoornts
around the tbloab to join our journey to Mars

109
00:11:10,240 --> 00:11:14,360
and is helping pave for way for humans to
visit the red planet.

110
00:11:14,360 --> 00:11:20,149
>> Jose Hernandez's story is one of hope,
strength, and inspiration.

111

00:11:20,149 --> 00:11:26,850

He was born in California, the son of migrant farm workers. Rirn the field, he heard on

112

00:11:26,850 --> 00:11:31,680

the radio that NASA had selected its first Hispanic astronaut.

113

00:11:31,680 --> 00:11:36,430

That was the moment he decided he, too, wanted to goi to space.

114

00:11:36,430 --> 00:11:42,180

Jose would go on to study electrical and computer engineering and spend more than 14 years at

115

00:11:42,180 --> 00:11:48,540

the livermore national laboratory before joining NASA's Johnson space center in 2001.

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00:11:48,540 --> 00:11:54,600

He was admitted into the astronaut candidate program by 2004 and by 2009 Jose had fulfilled

117

00:11:54,600 --> 00:12:02,410

his dream of Geeing to space. Allowing NASA to go farther, reach new heights,

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00:12:02,410 --> 00:12:08,740

and in future reach Mars and beyond. Diversity is essential to our success.

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00:12:08,740 --> 00:12:15,209

Diversity in background, experiences, and thinking maintain the culture, creativity

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00:12:15,209 --> 00:12:20,480

and innovation is central to NASA. I want to thank our Hispanic outreach and

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00:12:20,480 --> 00:12:26,290

leadership alliance, hola, for developing today's program.

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00:12:26,290 --> 00:12:34,350

The equal opportunity and diversity management division, KRISTA\hPAQUIN for their Support

123

00:12:34,350 --> 00:12:39,920

of hola.

Now, please welcome and show some real love

124

00:12:39,920 --> 00:12:45,870

to Diana and Jose.

[APPLAUSE]

125

00:12:45,870 --> 00:13:00,250

>> All right, so let's...

Okay, perfect.

126

00:13:00,250 --> 00:13:28,149

Okay, buenos TARDES\hMI\hNOMBRE es Diana TRUJILLO.

Find out if there was ever any life of the

127

00:13:28,149 --> 00:13:31,960

surface of this planet.

I have the honor of working as the mission

128

00:13:31,960 --> 00:13:41,810

lead for the Mars curiosity rover, a driven more than 14■kilometers on the surface of

129

00:13:41,810 --> 00:13:47,190

this planet.

As a mission lead I have the honor of working

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00:13:47,190 --> 00:13:51,480

with an international team of scientists and engineers.

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00:13:51,480 --> 00:13:56,920

People from different countries, people from Spain, from Russia, people from the USA with

132

00:13:56,920 --> 00:14:00,279

a background from el Salvador, from Columbia, from Mexico.

133

00:14:00,279 --> 00:14:05,660

As a team, we try to figure out what we're going to do with this mission.

134

00:14:05,660 --> 00:14:08,920

What is actually the goal of the mission of the day.

135

00:14:08,920 --> 00:14:14,190

Where are we going to explore, where are we going to drive, what samples are we going

136

00:14:14,190 --> 00:14:17,140

to take, what pictures are we going to bring back home.

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00:14:17,140 --> 00:14:23,050

And it's interesting to me to know that after many years of working on this mission I have

138

00:14:23,050 --> 00:14:27,130

worked approximately 7 years now on Mars curiosity Rover.

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00:14:27,130 --> 00:14:32,920

My team and I are amongst the first humans to see picture from another planet on a daily

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00:14:32,920 --> 00:14:35,210

basis.

I go to work at 8:00\ha.m. in the morning

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00:14:35,210 --> 00:14:42,399

and at 8:15\ha.m. I looking at picture of the surface of this incredible planet.

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00:14:42,399 --> 00:14:45,329

That to me feels like I am sitting in the Enterprise.

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00:14:45,329 --> 00:14:50,640

I feel like I'm sitting in the Enterprise in a huge ship with lots of tif people with

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00:14:50,640 --> 00:14:56,019

different backgrounds, different ideas, but with one objective, which is to explore space,

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00:14:56,019 --> 00:15:02,120

explore the unknown.

But missions like this don't get built in

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00:15:02,120 --> 00:15:07,140

a week.

It took a decade of incredibly hard work and

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00:15:07,140 --> 00:15:11,110

bold decision making.

Lot of risk■taking as well.

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00:15:11,110 --> 00:15:17,850

People spot that this mission was so crazy and ambitious that it was not going to happen.

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00:15:17,850 --> 00:15:23,480

In fact, I was in college when this mission was being talked of and I remember hearing

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00:15:23,480 --> 00:15:30,000

about the concept and I thought that's crazy that's not going to work.

151

00:15:30,000 --> 00:15:33,410

In a way you can say the same thing about my journey.

152

00:15:33,410 --> 00:15:40,700

I was born and raised in Columbia a beautiful country full of delicious food, great people,

153

00:15:40,700 --> 00:15:49,920

awesome music but it's not a country that is known for producing you deant here is the

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00:15:49,920 --> 00:15:54,839

Columbia pft NASA equivalent, we don't have something like that.

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00:15:54,839 --> 00:16:02,080

So, as a child, to me it was very hard because my country was going through a lot of terrible

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00:16:02,080 --> 00:16:08,720

violence and for me words like hope and dream had to be replaced with words like survival

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00:16:08,720 --> 00:16:15,639

to get to school safe.
It was interesting to me because when I wanted

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00:16:15,639 --> 00:16:24,399

to really do was to escape all the terrible vile expns focus on what I wanted to do which

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00:16:24,399 --> 00:16:33,720

was space exploration.
I just wanted to dream bigger and dream beyond

160

00:16:33,720 --> 00:16:40,820

what anyone else had told me I could do.
So when I tried to do was to find a role model,

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00:16:40,820 --> 00:16:47,220

my first step, let me find a female Columbian,
maybe somebody that lives nearby me, in a

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00:16:47,220 --> 00:16:52,290

different city, but still in my country so
I could ask her how did you make it happen?

163

00:16:52,290 --> 00:16:55,820

How did you manage to do the dream job that
you have?

164

00:16:55,820 --> 00:17:00,660

What should I do?
So my parents tried to find her, I tried to

165

00:17:00,660 --> 00:17:08,130

find her we searched but unfortunately I couldn't
find anybody like that instead what I did

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00:17:08,130 --> 00:17:14,449

was I found comfort on TV.
Lafer laugh.

167

00:17:14,449 --> 00:17:24,880

It is kind of funny and at the same time sad
to know that the best resource that I had

168

00:17:24,880 --> 00:17:32,660

to figure out what it was like to work for
NASA was the guy from I dream of jeany.

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00:17:32,660 --> 00:17:37,299

He would get out of his car, walk to his building
which we all knew was NASA and then you will

170

00:17:37,299 --> 00:17:47,169

see his desk and for me it was like I'm there.
I know what a NASA person does.

171

00:17:47,169 --> 00:17:54,870

It's interesting because at home at home I would watch the show.

172

00:17:54,870 --> 00:18:01,960

With I was at home, that actually made my parents quite worried.

173

00:18:01,960 --> 00:18:12,140

My parents thought that I was setting myself up for a path of disappointment.

174

00:18:12,140 --> 00:18:18,770

They didn't know an aerospace engineer, they didn't know what an aerospace engineer does.

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00:18:18,770 --> 00:18:30,190

When I told them that I wanted to build rockets they were very worried my dad actually told

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00:18:30,190 --> 00:18:35,536

me he was concerned because maybe what I was going to end up happening was was going to

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00:18:35,536 --> 00:18:39,960

become a car mechanic and that was my best shot.

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00:18:39,960 --> 00:18:49,060

Although my dad had a different perspective of what my dream should be, we agreed on the

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00:18:49,060 --> 00:18:55,309

first step.
My dad thought it was good idea for me to

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00:18:55,309 --> 00:18:59,190

come to the U.S. disp learn English.
For me, I knew that I had to leave the country

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00:18:59,190 --> 00:19:06,010

I love, and pursue my dream.

I got 300 bucks in my pocket, hopped on a

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00:19:06,010 --> 00:19:10,270

plane to Miami, and then the first challenge

I had was the basics.

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00:19:10,270 --> 00:19:17,200

How do I speak the language, where do I want

to live, how do I go to school.

184

00:19:17,200 --> 00:19:22,309

I got enrolled into a community college for

English as a second language and then I took

185

00:19:22,309 --> 00:19:28,580

three jobs to be able to pay for my school.

After two years of a lot of struggle, I started

186

00:19:28,580 --> 00:19:37,100

to think maybe my parents were rich. I was

feeling home sick I want to go back home,

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00:19:37,100 --> 00:19:45,520

I want to eat some EMPENADAS and I thought

maybe I should just head back and so I came

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00:19:45,520 --> 00:19:51,440

across something that changed what I was thinking.

It gave me actually hope.

189

00:19:51,440 --> 00:19:57,410

It was an old magazine published by NASA which

only featured female astronauts. They told

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00:19:57,410 --> 00:20:03,980

me where they were from, who were they, what

college they went to, what major they registered

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00:20:03,980 --> 00:20:08,150

on, what job they had, and what mission they actually flew in.

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00:20:08,150 --> 00:20:14,020

It also told me what they did on the mission. To me this was the magazine that gave me all

193

00:20:14,020 --> 00:20:16,679

those role models that I was so desperately looking for.

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00:20:16,679 --> 00:20:22,360

I took this magazine and I traced my path with the magazine who was doing what, what

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00:20:22,360 --> 00:20:30,090

years they were, what college. This magazine made me feel way more comfortable

196

00:20:30,090 --> 00:20:33,110

about my dream. It actually made me recognize that hey, there's

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00:20:33,110 --> 00:20:39,250

other women doing this and hey I look like some of them, too, so maybe I can actually

198

00:20:39,250 --> 00:20:41,230

do this. Instead of feeling concerned and maybe shy

199

00:20:41,230 --> 00:20:44,580

about my dream, I started to share it with everyone.

200

00:20:44,580 --> 00:20:47,610

hacademy.

The NASA academy still working?

201
00:20:47,610 --> 00:20:49,170
Okay.
Thank you.

202
00:20:49,170 --> 00:20:57,470
All right, we switch mics.
Okay, so the NASA u cad em, uh, is\h■ ■\hso

203
00:20:57,470 --> 00:21:07,110
it lead to the NASA academy.
I applied to the NASA academy which was a

204
00:21:07,110 --> 00:21:13,270
leadership program that was designed to groom
the future leaders of space exploration. Rsh

205
00:21:13,270 --> 00:21:18,980
it was a very competitive program.
Thousands of people will apply, 18 people

206
00:21:18,980 --> 00:21:22,880
got selected to the main campus which was
Goddard and out of those 18 in the 2006 class,

207
00:21:22,880 --> 00:21:31,950
I was the only Hispanic.
In that class we got to see it all, I felt

208
00:21:31,950 --> 00:21:39,910
like we got to meet multiple dreblghters,
CEO's of companies that will come talk to

209
00:21:39,910 --> 00:21:43,690
you, sit down on the floor and tell you how
they actually made it happen.

210
00:21:43,690 --> 00:21:51,180
We got to see a space shuttle launch.
All of that in a course of 10, 11 weeks.

211

00:21:51,180 --> 00:21:57,809

By the end of this prog program I realize
that there were so many things out there that

212

00:21:57,809 --> 00:22:00,630

I could do.

The program showed me all the possibilities

213

00:22:00,630 --> 00:22:04,559

that I had.

N and in fact, I felt thriek program changed

214

00:22:04,559 --> 00:22:10,000

my perspective from an immigrant that had
limited paws possibilities to a person that

215

00:22:10,000 --> 00:22:24,160

had infinite opportunities.

This gave me the to after I finished the program

216

00:22:24,160 --> 00:22:31,010

I actually had the luck to work with a company
that was resupplying the space station.

217

00:22:31,010 --> 00:22:36,400

My first job out of college was to work for
a company doing cargo resupply to a space

218

00:22:36,400 --> 00:22:40,090

station.

After that I was able to work for the constellation

219

00:22:40,090 --> 00:22:44,980

program which vision was to put humans to
the moon and then Mars and beyond.

220

00:22:44,980 --> 00:22:50,390

After that I also worked on the deep space
network which is those big antennas around

221

00:22:50,390 --> 00:22:59,390

the world that communicate with deep space missions.

222

00:22:59,390 --> 00:23:07,470

I feel very fortunate to work for NASA and I feel like for the people in this room, if

223

00:23:07,470 --> 00:23:09,230

you are or are not part of NASA you should feel very excited about it and try to work

224

00:23:09,230 --> 00:23:14,450

with us because there are so many cool things tboaing on.

225

00:23:14,450 --> 00:23:20,669

In fact these are exciting times right now. The government recognizing we could come together

226

00:23:20,669 --> 00:23:28,640

and explore space and do more than any of us could have done.

227

00:23:28,640 --> 00:23:35,240

Trying to do a space exploration is extremely difficult.

228

00:23:35,240 --> 00:23:42,780

The differ difference is if we take these big, big challenges and split them into small

229

00:23:42,780 --> 00:23:49,450

pieces and have people from different countries, sister agencies, NASA, all of them working

230

00:23:49,450 --> 00:24:04,870

together to achieve I would like to see people go to Mars in my lifetime.

231

00:24:04,870 --> 00:24:12,100

Let's talk about what has happened so far?
Current missions and missions that have already

232

00:24:12,100 --> 00:24:17,179

completed are helping us understand Mars even
more.

233

00:24:17,179 --> 00:24:26,840

How are our experiments actually behaving?
What are the options we have and then we have

234

00:24:26,840 --> 00:24:32,120

an issue, how do we trouble shoot it, how
do we respond, how do we do it.

235

00:24:32,120 --> 00:24:37,350

Things we need to think about as a team, and
also the vehicle design perspective so that

236

00:24:37,350 --> 00:24:45,570

we can actually take people in the future
to Mars. Not only that, these missions are

237

00:24:45,570 --> 00:24:51,169

working as a test platform for us to test
new technology technology that needs to help

238

00:24:51,169 --> 00:24:57,860

us figure out how are we going to survive
in an environment like this, eat, breathe,

239

00:24:57,860 --> 00:25:05,080

sleep, do all those other things just to give
you an idea of how great we're doing on the

240

00:25:05,080 --> 00:25:14,530

sur sphs of the was able to demonstrate that
Mars had suitable environment to support life

241

00:25:14,530 --> 00:25:18,870

at some point.

That was one of our main mission objectives,

242

00:25:18,870 --> 00:25:25,030

and we hit it within the first year of being there.

243

00:25:25,030 --> 00:25:31,590

You can think about what can we actually do if we were to send more vehicles to Mars.

244

00:25:31,590 --> 00:25:33,710

We know how to do it.

If we could send more, we could learn more

245

00:25:33,710 --> 00:25:40,000

at a much faster rate.

And we're not only doing excellent on the

246

00:25:40,000 --> 00:25:44,320

surface of Mars, we're also dominating the ORBIT of Mars.

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00:25:44,320 --> 00:25:53,330

By the end of 2016, we would have three more space craft, EXO mars, \h■ ■\h.

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00:25:53,330 --> 00:25:58,370

Plus Odyssey and MRO which are already there.

All of those space crafts that we need so

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00:25:58,370 --> 00:26:02,990

that we can communicate back to earth and also look at the entire surface of Mars and

250

00:26:02,990 --> 00:26:08,289

figure out where we want to go, and what do we want to do.

251

00:26:08,289 --> 00:26:15,330

And how about the guts of the planet?

We can learn also about the guts of the planet.

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00:26:15,330 --> 00:26:20,030

By November 2020 we would have put
a new space craft on the surface of Mars,

253

00:26:20,030 --> 00:26:26,090

and that will be interesting to help us understand
how this rocky planet was actually formed.

254

00:26:26,090 --> 00:26:33,990

And then we take the next step Mars 2020.
It the next step on our search to help us

255

00:26:33,990 --> 00:26:42,690

find out if there are any clues of any
microbes on the surface of Mars.

256

00:26:42,690 --> 00:26:54,650

Technology, development, and testing, help
us figure out how to produce oxygen out of

257

00:26:54,650 --> 00:27:00,150

the atmosphere of Mars.

Going to take a sample and encapsulate it

258

00:27:00,150 --> 00:27:05,650

and get it ready for the next mission.

Our next mission which is sample return.

259

00:27:05,650 --> 00:27:11,160

Sample return is a mission that is very important
to the scientist.

260

00:27:11,160 --> 00:27:16,120

Very important to the scientist because it's
a mission that will decouple the sample analysis

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00:27:16,120 --> 00:27:21,039

that you need to do from the mission constraints.
If you bring the sample back to earth, you

262

00:27:21,039 --> 00:27:30,900

can do all sorts of analysis that you want.
Power and data and time of day.

263

00:27:30,900 --> 00:27:38,600

Or how many orbits do we have with the orbiters
to send the data back.

264

00:27:38,600 --> 00:27:43,330

You can do a couple of things from the mission
constraints and the actual science you want

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00:27:43,330 --> 00:27:48,299

to do.
You can get a lot more out of it.

266

00:27:48,299 --> 00:27:53,830

And all of that is actually to help us to
take in the future people to Mars.

267

00:27:53,830 --> 00:27:58,350

One thing that I did wanted to mission about
the previous mission is that the sample return

268

00:27:58,350 --> 00:28:04,430

mission will have to demonstrate technology
that needed for us to take humans to Mars.

269

00:28:04,430 --> 00:28:09,700

Such as lawrning ot launching out of the surface
of Mars.

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00:28:09,700 --> 00:28:16,240

You might actually have to do orbit operations
to handle that sample, travel all the way

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00:28:16,240 --> 00:28:19,559

back to earth, and land safely.

All of that technology that we actually need

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00:28:19,559 --> 00:28:26,500

for humans to learn.

I to want to say, though, that robotic operations

273

00:28:26,500 --> 00:28:32,470

are paving the way. Robotic operations have

helped us understand what's going on with

274

00:28:32,470 --> 00:28:36,750

Mars in a way that we never imagined.

In fact, we are getting so efficient that

275

00:28:36,750 --> 00:28:44,880

we can do dozen of experienced on a single

it doesn't matter what time of day it is,

276

00:28:44,880 --> 00:28:50,059

you can do it very early at any time you can

come ton space craft and tell the space craft

277

00:28:50,059 --> 00:28:56,370

a series of several thousands of commands

and you can just clock through it and do your

278

00:28:56,370 --> 00:29:00,710

analysis.

Through the understanding of the Rover missions

279

00:29:00,710 --> 00:29:08,480

from Viking to Curiosity we have encountered

and collected a lot of information and understanding,

280

00:29:08,480 --> 00:29:12,750

I have to ask myselfh■ ■\hpossibilities

are there.

281

00:29:12,750 --> 00:29:19,730

We could have.

We're not there yet, though.

282

00:29:19,730 --> 00:29:25,289

We're not there yet, but the good thing is that we're getting close.

283

00:29:25,289 --> 00:29:34,290

The good thing is that I can show you guys the slides with this possible mission and

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00:29:34,290 --> 00:29:41,289

it's getting closer.

We're talking about we're having that discussion

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00:29:41,289 --> 00:29:49,169

now.

While some people will actually be busy exploring

286

00:29:49,169 --> 00:29:53,340

Mars, some other people will be busy exploring an alien ocean.

287

00:29:53,340 --> 00:30:00,920

Some people will be busy exploring Europa.

So we have lots of things going on in NASA.

288

00:30:00,920 --> 00:30:08,409

But I wanted to leave you guys with this.

All of the things that I have shown you guys

289

00:30:08,409 --> 00:30:12,000

today and you have heard about it before are all worth doing.

290

00:30:12,000 --> 00:30:21,010

These are challenges that we can achieve.

Our team, our NASA team is an incredible,

291

00:30:21,010 --> 00:30:25,840

incredible team that has actually excelled
and overcome challenges.

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00:30:25,840 --> 00:30:34,470

The only thing is that we're not very diverse.
Science has actually shown us that diverse

293

00:30:34,470 --> 00:30:38,850

backgrounds, people with different backgrounds
can bring different creativities, different

294

00:30:38,850 --> 00:30:44,490

ideas, different approach to solving a problem.
And we have a lot of things that we want to

295

00:30:44,490 --> 00:30:48,860

do, problems that are really tough.
Having people from differing backgrounds helping

296

00:30:48,860 --> 00:30:55,059

us think outside the box is to our benefit.
So I just want to\h■ ■\hl want to leave

297

00:30:55,059 --> 00:31:01,070

you guys today with the idea or the thought
that we should are work all together to open

298

00:31:01,070 --> 00:31:11,220

the NASA door, to include individuals to come
to our agency and help us together explore

299

00:31:11,220 --> 00:31:31,489

space, push the boundary,.
Thank you very much.

300

00:31:31,489 --> 00:31:36,610

>> Another round of applause, please for our
amazing colleague here, Diana TRUJILLO.

301

00:31:36,610 --> 00:31:49,200

Now it's my pleasure to invite our next speaker for today.

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00:31:49,200 --> 00:31:59,090

Mr.\hJose hur Hernandez.

>> Thank you, Maria, for inviting me here

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00:31:59,090 --> 00:32:02,610

and I'd like to thank hola as well for, uh, for inviting me.

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00:32:02,610 --> 00:32:08,530

It's a great pleasure to be back here.

I say back because I did spend a year here

305

00:32:08,530 --> 00:32:12,962

out of the office of legislative and international affairs

306

00:32:12,962 --> 00:32:19,679

[APPLAUSE]

>> So a shout out to my coworkers over here.

307

00:32:19,679 --> 00:32:26,200

I want to quickly start my talk because if anything I want to lead you guys with the

308

00:32:26,200 --> 00:32:36,159

feeling that anything is possible in this planet and don't be afraid to dream the impossible,

309

00:32:36,159 --> 00:32:40,240

especially with our students that are here with us today.

310

00:32:40,240 --> 00:32:45,330

I think you will be able to r relate to my story and hopefully after hearing my story

311

00:32:45,330 --> 00:32:52,061

you'll walk away on cloud 9 saying hey, I could be whatever I want in this world.

312

00:32:52,061 --> 00:32:58,179

My story starts not here, it starts in Mexico. It starts in Mexico with my father and my

313

00:32:58,179 --> 00:33:09,320

mother. Both my parents are from MICHOACAN, Mexico.

314

00:33:09,320 --> 00:33:15,220

My father started coming to this country at a very young age.

315

00:33:15,220 --> 00:33:21,570

Just like many folks looking for the American dream, he searched for a better life so he

316

00:33:21,570 --> 00:33:27,510

started a lifestyle called becoming\ha migrant farm worker.

317

00:33:27,510 --> 00:33:33,770

He spent nine months in California, and then go back home for three months.

318

00:33:33,770 --> 00:33:37,850

He started hat when he was 15, when he was 18, he met my father\h■ ■\hmet my mother

319

00:33:37,850 --> 00:33:50,550

and they got married when he was 19. It's real cute because when my mom hears this

320

00:33:50,550 --> 00:33:58,210

story that I tell it because it's factual she says MIJO, tell them I was 15.

321

00:33:58,210 --> 00:34:02,980

Like that's going to make it\h■ ■\hl said
mom, still, it's bad.

322

00:34:02,980 --> 00:34:10,280

Anyway, they get married and my mom gets incorporated
into what a call the California circuit, where

323

00:34:10,280 --> 00:34:16,190

my dad would spend two months in California,
harvest of the crop, strawberries, moving

324

00:34:16,190 --> 00:34:22,089

to central California, the lettuce and sugar
beats beets for another two muj months and

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00:34:22,089 --> 00:34:26,769

then five months in northern California.
Then they would go back.

326

00:34:26,769 --> 00:34:34,239

The family came along and we were born, there's
four of us, they say what mouth we were born

327

00:34:34,239 --> 00:34:39,990

in.
I was born in August, so, uh, you know, that's

328

00:34:39,990 --> 00:34:54,279

in the, uh, harvest time
right where I have a brother who was worn

329

00:34:54,279 --> 00:34:58,780

in September, he, too, was born in Stockton.
I have a brother and sister born in November

330

00:34:58,780 --> 00:35:02,559

and December, guess where they were born?
They were born in Mexico.

331

00:35:02,559 --> 00:35:06,799

As we grew, that was the lifestyle I grew in.

332

00:35:06,799 --> 00:35:15,749

It was going to three different school districts. And then missing three months of school although

333

00:35:15,749 --> 00:35:23,009

we did get homework from our teachers we went to Mexico and did our homework every day in

334

00:35:23,009 --> 00:35:29,099

my grandma's kitchen table with a cup of hot chocolate, piece of French bread and 8:00\ha.m.

335

00:35:29,099 --> 00:35:31,650

to 12:00\hp.m. Monday through Friday we did our homework.

336

00:35:31,650 --> 00:35:36,140

That owz was our sell schooling. It wasn't home schooling because my parents

337

00:35:36,140 --> 00:35:41,710

only had a third grade education, so they couldn't help us much.

338

00:35:41,710 --> 00:35:45,089

Things did not change for the better until second grade.

339

00:35:45,089 --> 00:35:53,759

In the second grade I had a teacher, her name was Miss Young.

340

00:35:53,759 --> 00:35:59,910

Miss Young was a young Chinese American, beautiful teacher, fresh out of college.

341

00:35:59,910 --> 00:36:04,619

Did I say she was beautiful?

Second grade, your first crush, I'm guilty,

342

00:36:04,619 --> 00:36:12,579

guilty, guilty.

So anyway, my dad gets up one November he

343

00:36:12,579 --> 00:36:18,190

would make a bilge u nosment say kids, we're
going to Mexico next week get three months

344

00:36:18,190 --> 00:36:23,760

worth of homework from your teacher so there
I go running to school about a mile and a

345

00:36:23,760 --> 00:36:26,250

half.

Nowadays we make you guys walk to school a

346

00:36:26,250 --> 00:36:28,829

mile and a half we get arrested for child
endangerment.

347

00:36:28,829 --> 00:36:34,099

Those days it was okay.

I get to school and tell miz Young.

348

00:36:34,099 --> 00:36:39,440

I said we're going to Mexico, can you give
me three months worth of homework.

349

00:36:39,440 --> 00:36:44,029

She just rolled her eyes\h■ ■\hyou gotta
understand her frustration she has been through

350

00:36:44,029 --> 00:36:49,059

that process with my three older siblings.
I guess fourth time was a charm.

351

00:36:49,059 --> 00:36:56,309

She says you tell your parent I'm going to come home to your house and talk to them.

352

00:36:56,309 --> 00:37:05,010

The teacher never comes to ows house.

There I go running back to tell the teacher,\h■

353

00:37:05,010 --> 00:37:09,049

■\hto tell my parents.

The first one I run into is my dad, wouldn't

354

00:37:09,049 --> 00:37:12,450

you know.

And my dad's a stern, serious guy. Trrn if

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00:37:12,450 --> 00:37:18,259

you're doing something bad all he has to do is look at you and you stop dead on your tracks.

356

00:37:18,259 --> 00:37:23,079

My dad just got out of work, kind of tired and grumpy.

357

00:37:23,079 --> 00:37:26,619

So I get in the living room and I said hey, dad.

358

00:37:26,619 --> 00:37:29,969

He said yes, son?

I said the teacher's coming over she wants

359

00:37:29,969 --> 00:37:33,240

to talk to you.

Man, I did not finish that sentence with he's

360

00:37:33,240 --> 00:37:38,589

already taking off his belt.

You see, my dad has a different view of the

361

00:37:38,589 --> 00:37:44,680

judicial system.

He likes to apply the punishment first, and

362

00:37:44,680 --> 00:37:49,539

then ask what happened.

Get the facts later, you know?

363

00:37:49,539 --> 00:37:56,469

I don't know how I convinced him that it wasn't related to my behavior but rather our upcoming

364

00:37:56,469 --> 00:38:00,229

trip to Mexico.

He said you'd better be right because it's

365

00:38:00,229 --> 00:38:07,249

going to go twice as bad if it's a complaint.

Then I go to the kitchen to my mom.

366

00:38:07,249 --> 00:38:14,619

My mom is so nurturing, and caring, fl she is making tortillas and rice and beans for

367

00:38:14,619 --> 00:38:17,509

us to make dinner.

Dwr say mommy,.

368

00:38:17,509 --> 00:38:19,989

SIhMIJITO.

Id the teacher's coming over.

369

00:38:19,989 --> 00:38:27,829

You guys ever see the movie home alone?

That was her reaction.

370

00:38:27,829 --> 00:38:33,130

Teacher's coming?

We gotta clean the house, we gotta sweep,

371

00:38:33,130 --> 00:38:39,349

mop, thighed broken dish ware and get out the new one and make dinner.

372

00:38:39,349 --> 00:38:45,390

It was great because we even had meat on the table, rice, beans and salsa and tortillas,

373

00:38:45,390 --> 00:38:48,680

this time there was meat on the table. It was a banquet for me.

374

00:38:48,680 --> 00:38:57,209

If you could image an table, this is a second grader a table with the family he loves and

375

00:38:57,209 --> 00:39:03,920

Ms.\hYoung sitting next to me she's my teacher. We got this great meal in front of us.

376

00:39:03,920 --> 00:39:08,960

You ever have visitors and have conversations and get this awkward sigh lns you want to\h■

377

00:39:08,960 --> 00:39:13,239

■\hsilence you want to jump start the conversation? I said I'm going to jump start the conversation,

378

00:39:13,239 --> 00:39:18,019

and I get this bright idea I gotta say something witty kind of thing.

379

00:39:18,019 --> 00:39:23,769

I figure there's my fa family, there's the food, there's miss young, perfect for a second

380

00:39:23,769 --> 00:39:25,670

grader. I said Ms.\hYoung.

381

00:39:25,670 --> 00:39:31,390

She said yes, Jose?

I said you gotta come over more often.

382

00:39:31,390 --> 00:39:35,319

I wish you came every day we're going to eat meat.

383

00:39:35,319 --> 00:39:44,950

Everybody laughed except my dad.

My dad gave me what we call the look, the

384

00:39:44,950 --> 00:39:54,640

MIRAD a\h■ ■\h.

The look, he doesn't hesitate to slp, but

385

00:39:54,640 --> 00:40:01,249

when you have guests they hold back.

They do the next best thing, wait they look

386

00:40:01,249 --> 00:40:09,880

at you wait until she leaves, you and I are going to talk.

387

00:40:09,880 --> 00:40:21,770

Anyway, we eat, have a great dinner, and then we go and sit in the living room and I get

388

00:40:21,770 --> 00:40:27,280

invited because my parents can't speak English.

Ms.\hYoung can't speak Spanish.

389

00:40:27,280 --> 00:40:32,359

So what little English I knew, I was the official translator.

390

00:40:32,359 --> 00:40:36,269

And Ms.\hYoung sits down she says thank you for the dinner I really didn't come here for

391

00:40:36,269 --> 00:40:39,779

dinner, I came here to talk about your kid's education.

392

00:40:39,779 --> 00:40:45,880

And my dad, uh, immediately gets in his defensive posture.

393

00:40:45,880 --> 00:40:48,410

He thinks the worse?

Are they mis behaving?

394

00:40:48,410 --> 00:40:55,190

What are they doing.

Ms.\hYoung says no, no, on the contrary I've

395

00:40:55,190 --> 00:41:02,060

had all of your poor kids in my class because we made the same stops each year, and right

396

00:41:02,060 --> 00:41:06,569

now I have your youngest, Jose, and they all have a lot of potential.

397

00:41:06,569 --> 00:41:13,660

But this NOMADIC life sciel of moving school district to school district and missing three

398

00:41:13,660 --> 00:41:20,410

months of school really hurts them.

My dad says what do you mean?

399

00:41:20,410 --> 00:41:24,509

Even though I een only have a third grade education, I believe in education and Monday

400

00:41:24,509 --> 00:41:29,940

through Friday they're in school.

Saturday and Sunday, sure, they're working

401

00:41:29,940 --> 00:41:33,609

in the fields along side me and seven days
a week during the summer they work along side

402

00:41:33,609 --> 00:41:40,109

the family.
Yes, but you move three different school districts.

403

00:41:40,109 --> 00:41:42,880

Uh, but they're in school.
>> Yes, but you go three months to Mexico.

404

00:41:42,880 --> 00:41:49,910

>> Uh, but they take homework.
In his eyes he was meeting the obligation

405

00:41:49,910 --> 00:41:58,130

of giving an edgation to his ked kids. Ms.\hYoung
was clearly flustered and, uh, so she said

406

00:41:58,130 --> 00:42:00,829

well, let me give you an example, maybe this
will help you.

407

00:42:00,829 --> 00:42:05,089

I gotta hand it to Ms.\hYoung, she came up
with a brilliant example.

408

00:42:05,089 --> 00:42:11,160

She says to my dad you who have worked in
agricultural all your life, surely you're

409

00:42:11,160 --> 00:42:17,769

an expert in these type of topics and these
things my dad immediatly says I'm not sure

410

00:42:17,769 --> 00:42:22,650

I'm an expert but yeah,...
She says I'm going to give you a problem and

411

00:42:22,650 --> 00:42:30,819

I know you're going to be able to help me answer this question.

412

00:42:30,819 --> 00:42:35,599

My dad says I will try, Ms.\hYoung.
Imagine, Mr.\hHernandez, that I give you four

413

00:42:35,599 --> 00:42:41,190

fruit tree, small fruit trees in pots.
My dad th yes.

414

00:42:41,190 --> 00:42:48,040

Id I want you to find the most fertile ground,
and I want you to dig four holes and I want

415

00:42:48,040 --> 00:42:54,089

you to plant those trees. Make sure you water
them and fertilize them, make sure they have

416

00:42:54,089 --> 00:42:57,029

everything they need.
My dad said yes.

417

00:42:57,029 --> 00:43:01,739

Three months from now, I want you to dig four
new holes, same fertile ground.

418

00:43:01,739 --> 00:43:09,960

I want you to transplant those trees.
My dad said yes, wondering where's this going.

419

00:43:09,960 --> 00:43:13,799

And then she said three months from then,
I want you to keep doing the same thing.

420

00:43:13,799 --> 00:43:17,640

As a matter of fact, every three months I
want you to transplant those trees into a

421

00:43:17,640 --> 00:43:22,029

new set of holes and make sure you water them,
fertilize them.

422

00:43:22,029 --> 00:43:26,289

Make sure they have everything.
You're an expert in agricultural.

423

00:43:26,289 --> 00:43:34,369

Tell me, what happens to those four trees?
My dad started thinking he said well, Ms.\hYoung

424

00:43:34,369 --> 00:43:40,619

the trees aren't going to die but I will tell
you this, their roots never grow deep.

425

00:43:40,619 --> 00:43:45,940

So you're going to stunt their growth.
And if they're fruit tree, they probably won't

426

00:43:45,940 --> 00:43:51,319

even bare fruit.
Then you can count the seconds, 1,001, 1,002,\h■

427

00:43:51,319 --> 00:43:55,680

■\hand you see his facial expression change.
He got it.

428

00:43:55,680 --> 00:43:58,849

He got the message.
Those four trees represent his four kids.

429

00:43:58,849 --> 00:44:06,880

He said OH, is that what you meant?
And to his credit he accept that.

430

00:44:06,880 --> 00:44:11,469

So thank you, Ms.\hYoung.
That year we still went to Mexico but a funny

431

00:44:11,469 --> 00:44:16,829

thing happened on the way back.

As we drove back, we didn't stop in Southern

432

00:44:16,829 --> 00:44:21,519

California.

We didn't stop in central California, we went

433

00:44:21,519 --> 00:44:27,489

straight to our last stop, northern California.

Stockton, California.

434

00:44:27,489 --> 00:44:32,029

And that's where we started to, uh, get traction
with our education.

435

00:44:32,029 --> 00:44:37,170

Because now our trips to Mexico from then
on, just one stop in California, our trips

436

00:44:37,170 --> 00:44:41,059

to Mexico were now three weeks centered round
Christmas vacation.

437

00:44:41,059 --> 00:44:49,190

Our education started to get traction.

Still, I was still a farm worker, family of

438

00:44:49,190 --> 00:44:52,219

a farm worker.

The question that beg to be asked how in the

439

00:44:52,219 --> 00:44:59,351

heck does a farm worker kid even dare to dream
to want to be an astro not?

440

00:44:59,351 --> 00:45:07,099

That dream was born that dream was born when
I was all of ten years old.

441

00:45:07,099 --> 00:45:13,019

1972, Apollo.

I'm 54 so you don't have to do the math.

442

00:45:13,019 --> 00:45:23,289

I was 10 years old in 1952.

If you could picture a kid watching an old

443

00:45:23,289 --> 00:45:30,769

ab black and white technology vacuum TV with
rabbit ears on top, watching the very last

444

00:45:30,769 --> 00:45:35,240

Apollo mission.

Apollo 17, still remember the astronaut .

445

00:45:35,240 --> 00:45:44,170

Gene walking on the surface of the moon.

As a 10 year old holding the antenna to improve

446

00:45:44,170 --> 00:45:49,099

reception.

There I am listening to the reporter, narrating

447

00:45:49,099 --> 00:45:56,420

it. Rn then I would go outside moon was o
almost food full.

448

00:45:56,420 --> 00:46:05,109

Keep watching and say wow, that's where I
want to be.

449

00:46:05,109 --> 00:46:11,299

I want to be an astronaut.

The best thing I could have done that day

450

00:46:11,299 --> 00:46:18,150

was I shared that with my dad.

While we were walking to go to the bedroom,

451

00:46:18,150 --> 00:46:21,609

my dad was in front of me, I was behind him
and I said hey, dad, all excited.

452

00:46:21,609 --> 00:46:27,809

He said yes, son I said I know what I want
to be when I grow up.

453

00:46:27,809 --> 00:46:32,950

I want to be an astronaut.
He almost trips, he stops dead in his tracks,

454

00:46:32,950 --> 00:46:39,200

puts his hand on his waste, challenging tone.
You want to be what?

455

00:46:39,200 --> 00:46:47,309

I was so excited I wasn't about to back down.
I want to be an astronaut.

456

00:46:47,309 --> 00:46:54,319

He said son, let's go to the kitchen.
Only three things happened in the kitchen.

457

00:46:54,319 --> 00:46:57,739

That's where we do our homework every day
after school, my mom sits us down.

458

00:46:57,739 --> 00:47:03,619

You know, makes us our tortillas or beans
and rice and we eat and we do our homework.

459

00:47:03,619 --> 00:47:09,480

Number two.
That's where we eat dinner at as a family.

460

00:47:09,480 --> 00:47:15,869

Both those things were done.
Number three, that's where they apply punishment.

461

00:47:15,869 --> 00:47:20,510

So now you know why my eyes got that big.
So anyway, he sits me down, same chair where

462

00:47:20,510 --> 00:47:25,869

I do my homework and she says tell me, why
do you want to be an astronaut?

463

00:47:25,869 --> 00:47:31,479

Of course, I was fresh from listening to Walker
CRONCHITE so I had the all the facts and figures.

464

00:47:31,479 --> 00:47:39,619

I said dad, I can't that we as humans can
take a person to the surface of the moon,

465

00:47:39,619 --> 00:47:46,739

a quarter million miles away and bring him
back home safe and sound. I want to be a part

466

00:47:46,739 --> 00:47:50,510

of that.
He looked at me and he must have saw the determination

467

00:47:50,510 --> 00:47:58,230

of a 10 year old boy because what he told
me afterwards is what really surprised me.

468

00:47:58,230 --> 00:48:07,599

He looked at me and he says son, I think you
can do it.

469

00:48:07,599 --> 00:48:18,729

More importantly, he said, if you want to
do it, you need to follow five simple steps.

470

00:48:18,729 --> 00:48:24,630

That point I become a sponge, absorbing everything
he's going to say.

471

00:48:24,630 --> 00:48:30,039

I say what are they, dad?

He said first, decide what you want to be

472

00:48:30,039 --> 00:48:34,569

in life.

What does Jose want to be when he grows up.

473

00:48:34,569 --> 00:48:40,009

I want to be an astronaut.

Second, recognize how far you are from that

474

00:48:40,009 --> 00:48:43,980

goal.

I looked at our two-bedroom rented DILAPIDATED

475

00:48:43,980 --> 00:48:49,869

house, I said dad, we can't be any farther than this.

476

00:48:49,869 --> 00:48:54,019

He laughed and said good, I'm glad you recognize it.

477

00:48:54,019 --> 00:48:59,240

And third, you need to draw yourself a road map from where you know where you're at, even

478

00:48:59,240 --> 00:49:02,549

by your smart remarks you do, to where you want to go.

479

00:49:02,549 --> 00:49:09,440

That's going to guide you in life. I said what's the fourth, dad?

480

00:49:09,440 --> 00:49:14,949

Education.

There's no substitute for a good education.

481

00:49:14,949 --> 00:49:19,259

No shortcuts.

Finally, he said, you know that work ethic

482

00:49:19,259 --> 00:49:26,670

you put out on weekends, in the fields picking cucumbers, cherries, tomatoes, grapes, peaches,

483

00:49:26,670 --> 00:49:29,670

PEARS and 7 days a week in the summer?

I said yeah.

484

00:49:29,670 --> 00:49:34,760

It's the same work ethic.

Pointed to my books, you put it here.

485

00:49:34,760 --> 00:49:44,380

Then he says when you graduate and you get a job you put it in your job.

486

00:49:44,380 --> 00:49:49,939

Always give more of what people ask for.

I remember going to sleep that day because

487

00:49:49,939 --> 00:49:53,920

I said wow.

My parents think I could be an astronaut,

488

00:49:53,920 --> 00:49:58,559

ERGO I'm going to one.

I never looked back since.

489

00:49:58,559 --> 00:50:09,829

As soon as I could, start putting in my application.

I would add one other ingredient to that recipe,

490

00:50:09,829 --> 00:50:16,699

and that's the sixth greed ynt, that's perseverance.

Never giving up.

491

00:50:16,699 --> 00:50:25,549

I'm here to tell you NASA rejected me not once, not twice, not even four or five times.

492

00:50:25,549 --> 00:50:27,960

It was 11 times.

It wasn't until my 12th attempt that I got

493

00:50:27,960 --> 00:50:36,979

accepted to the 19th class of ras o notes.

So you can't give up.

494

00:50:36,979 --> 00:50:40,949

During those attempts I found out there's three stages to reaching a goal.

495

00:50:40,949 --> 00:50:46,160

First is minimum requirements. If you want to be a doctor, you know you gotta go to med

496

00:50:46,160 --> 00:50:55,259

school, lawyer pass the bar, astronaut, advanced degree, get, peerns, start applying.

497

00:50:55,259 --> 00:50:59,869

Then I found out that after six rejections I was doing something wrong.

498

00:50:59,869 --> 00:51:04,999

I had to find out what I was doing wrong.

So I compared myself with the astronauts at

499

00:51:04,999 --> 00:51:08,509

the second stage, compare yourself to what you want to be like.

500

00:51:08,509 --> 00:51:11,300

I found out that they were all pilots.

I wasn't a pilot.

501

00:51:11,300 --> 00:51:14,941

So guess what?

I learned how to fly. Return another year

502

00:51:14,941 --> 00:51:23,619

they were all scuba divers. Guess what,

I basic advanced scuba rescue, master scuba,

503

00:51:23,619 --> 00:51:28,940

I wanted to make sure NASA knew I knew how to scuba dive.

504

00:51:28,940 --> 00:51:34,479

Third year, third time that's when I discovered the third stage is you gotta do something

505

00:51:34,479 --> 00:51:40,900

that distinguishes you from the competition.

So what I was working at a lab when a job

506

00:51:40,900 --> 00:51:46,900

came to work in Russia no one wanted to do it because it was tough duty going to Siberia,

507

00:51:46,900 --> 00:51:50,410

I said put me in, coach, I'll go.

Why?

508

00:51:50,410 --> 00:51:56,449

Not because I wanted to get to know Siberia in the middle of winter, but I had read that

509

00:51:56,449 --> 00:52:01,029

the U.S. and Russia had signed an agreement to build what was going to be the international

510

00:52:01,029 --> 00:52:04,499

space station.

And I put one in one together it doesn't take

511

00:52:04,499 --> 00:52:08,549

a rocket scientist to figure that one out,
even n though I am one.

512

00:52:08,549 --> 00:52:12,529

I said we're going to be working with the
Russianings in the future.

513

00:52:12,529 --> 00:52:19,950

It behooves me to get experience working en
Russia, go to my boss and say can I have a

514

00:52:19,950 --> 00:52:27,839

Russian language instructor.
I know enough Russian to get drunk, guess.

515

00:52:27,839 --> 00:52:32,979

I know enough Russian.
Anyway, these are the things that you gotta

516

00:52:32,979 --> 00:52:40,019

do in life to pursue your passion, your dream,
and that's what I did.

517

00:52:40,019 --> 00:52:45,400

And I'm here to tell you that 6■ingredient
recipe plus the flea stages I just gave you

518

00:52:45,400 --> 00:52:52,069

really do work.
I got selected in 2004.

519

00:52:52,069 --> 00:52:57,900

Train for two years got our wings in 2006,
got assigned to a mission in 2007, and we

520

00:52:57,900 --> 00:53:04,119

flew it in 2009.
I was the flight engineer for STS■128 aresupply

521

00:53:04,119 --> 00:53:10,369

mission to the international space station.

I'd like to show you a short, 5-minute video

522

00:53:10,369 --> 00:53:16,769

that summarizes that mission.

We launched in the middle of the night, almost

523

00:53:16,769 --> 00:53:23,259

midnight, it only takes 8 and a half minutes

to get into space, you go from 0 to 17,000 miles

524

00:53:23,259 --> 00:53:29,009

per hour.

That's our mission patch.

525

00:53:29,009 --> 00:53:53,079

Three engines light up first, and then of

course the rocket booster aboard space shuttle

526

00:53:53,079 --> 00:54:06,759

Discovery.

They pop off into the ocean with parachutes

527

00:54:06,759 --> 00:54:27,719

and are recovered because they're reusable.

8 and a half minutes, you see me giving a

528

00:54:27,719 --> 00:54:32,660

thumbs up because I consider myself no a BONAFIDE astronaut.

529

00:54:32,660 --> 00:54:38,299

Our crew was an international crew.

Opening up the pay load bay doors to initiate

530

00:54:38,299 --> 00:54:45,529

cooling.

Raid radiator cooling so we can cool our electronics.

531

00:54:45,529 --> 00:54:50,150

There's yours truly putting together the portable
on board computer systems that are going to

532

00:54:50,150 --> 00:54:57,729

help us talk to the international space station
while other people put this together so we

533

00:54:57,729 --> 00:54:59,900

can exercise our legs. Our crew was a mix
td crew.

534

00:54:59,900 --> 00:55:04,920

This is my colleague Nicole, female engineer.
Looking into the binoculars of what's going

535

00:55:04,920 --> 00:55:10,179

to be her home for the next three months.
Wn of our objectives is tiek to take her there

536

00:55:10,179 --> 00:55:13,660

and leave her there and take someone who has
been there for three months.

537

00:55:13,660 --> 00:55:22,710

Our second objective is to deliver more than
seven tons of equipment and supplies to the

538

00:55:22,710 --> 00:55:28,141

international space station.
Woe did that via the module Leonardo which

539

00:55:28,141 --> 00:55:43,869

is what you see there in the pay load door.
Our third objective was to conduct three space

540

00:55:43,869 --> 00:55:50,349

walks.
[APPLAUSE]

541

00:55:50,349 --> 00:55:54,230

There we are celebrating after successfully talking to the international space station

542

00:55:54,230 --> 00:56:02,140

that allows us to open up the access hatch and the station folks.

543

00:56:02,140 --> 00:56:07,910

Wow got this neat little tunnel that transfers us from the the shuttle to the international

544

00:56:07,910 --> 00:56:13,979

space station.

The other side, the commander six astronauts

545

00:56:13,979 --> 00:56:27,710

waiting for us.

They've been up for months they know we have

546

00:56:27,710 --> 00:56:34,190

fresh fruit and vegetables.

As flight engineer I was one of the two principle

547

00:56:34,190 --> 00:56:39,509

robotic arm operators u Lang with Kevin Ford there, our pilot.

548

00:56:39,509 --> 00:56:46,670

We dare you see us grapple the MPLM.

Put it on a docking port.

549

00:56:46,670 --> 00:56:54,450

While we're putting everything together from the equipment, and installing inside the nation,

550

00:56:54,450 --> 00:57:01,269

other astronauts are conducting space walks.

We conducted three space walk, one of the

551

00:57:01,269 --> 00:57:11,289

big items there, we installed for radiator cooling and installed a spare one as well.

552

00:57:11,289 --> 00:57:21,130

I was operating the robotic arm at that period. After about, uh, 12 of the 14 days up there

553

00:57:21,130 --> 00:57:30,269

we do a rotation maneuver and then head home.

554

00:57:30,269 --> 00:57:36,430

You can see as you enter the atmosphere, gravity starts taking hold little by little.

555

00:57:36,430 --> 00:57:42,380

The shuttle is a pretty versatile piece of machinery, it takes off as rocket, and enters

556

00:57:42,380 --> 00:57:52,720

as an airplane. We only have one clans at landing. The weather

557

00:57:52,720 --> 00:58:00,619

was bad in California soarks headed to south east Florida.

558

00:58:00,619 --> 00:58:13,420

As I tell our pilot, Kevin Ford, very import tonight put the wheels down...

559

00:58:13,420 --> 00:58:23,489

And this was better than my landing over here at DULLES airport yesterday.

560

00:58:23,489 --> 00:58:29,450

There it is. And that's a typical 14■day mission to the

561

00:58:29,450 --> 00:58:36,749

international space station. One of the things
I want to leave you with I think it's very

562

00:58:36,749 --> 00:58:42,940

important is just to go over the recipe, especially
the students and the three stages to reaching

563

00:58:42,940 --> 00:58:47,829

a goal.
I think it's very simple.

564

00:58:47,829 --> 00:58:53,609

You gotta decide what it is you want to
do in life, identify that, recognize how far

565

00:58:53,609 --> 00:59:02,319

you are from that goal.
How to get there.

566

00:59:02,319 --> 00:59:08,729

You gotta study and prepare.
No substitution for an education and you gotta

567

00:59:08,729 --> 00:59:15,210

develop it, work hard for it, if you really
want it you gotta work hard.

568

00:59:15,210 --> 00:59:19,269

And then the sixth ingredient that I added
is perseverance.

569

00:59:19,269 --> 00:59:26,989

Never, never give up on yourself.
And then follow the three stages of reaching

570

00:59:26,989 --> 00:59:32,250

that goal is recognize what are the requirements
to get there.

571

00:59:32,250 --> 00:59:37,650

And then study people that are there already
and then find out what quality they have and

572

00:59:37,650 --> 00:59:42,499

start acquiring them I knew they were pilots
y became one. I knew they were scuba divers,

573

00:59:42,499 --> 00:59:50,109

I became one. Return another thing, start
doing things that will distinguish you from

574

00:59:50,109 --> 00:59:55,009

the competition.
Rise to the top.

575

00:59:55,009 --> 00:59:59,920

And take advantage of opportunities that's
going to make you, uh, distinguish yourself,

576

00:59:59,920 --> 01:00:05,569

take risks, calculated risks.
If you use that, mix it up just like my father

577

01:00:05,569 --> 01:00:13,559

told a 10 year old awhile back, you follow
that recipe, I guarantee you guys can reach

578

01:00:13,559 --> 01:00:18,010

for your own stars.
Thank you very much.

579

01:00:18,010 --> 01:00:28,130

Please feel free to follow me I got twitter.
I also have a book called reaching for the

580

01:00:28,130 --> 01:00:32,569

star, wouldn't you know it.
But I encourage you all to read it because

581

01:00:32,569 --> 01:00:53,219

it's the how to there.

Thank you very much, appreciate it.

582

01:00:53,219 --> 01:01:07,239

[APPLAUSE]

>> Can I get another round of applause, please,

583

01:01:07,239 --> 01:01:09,910

and for Diana.

I can honestly say this is one of the many

584

01:01:09,910 --> 01:01:11,769

reasons why I love my job.

Hear that?

585

01:01:11,769 --> 01:01:15,489

I tell everyone I love my job.

We're going to go u hoed and transition over

586

01:01:15,489 --> 01:01:20,579

to Q & A, question and answer portion of the program and we will be taking questions from

587

01:01:20,579 --> 01:01:24,650

the audience so feel free to, you know, ask any questions of both our speakers.

588

01:01:24,650 --> 01:01:45,839

If I could have both of our speakers, please, um, join me on stage, that would be wonderful.

589

01:01:45,839 --> 01:01:51,480

We do have some people in the audience with mics.

590

01:01:51,480 --> 01:01:57,739

Can I see the people with the mics?

So if you have a question, please feel free

591

01:01:57,739 --> 01:02:00,589

to raise your hand and one of them will come
and get you.

592

01:02:00,589 --> 01:02:08,450

We'll go ahead and open the floor up.
I see a question back there.

593

01:02:08,450 --> 01:02:37,989

>> Don't be shy.
>> Okay, right here.

594

01:02:37,989 --> 01:02:44,209

I want to know what personally is a way that
you can advocate, you can push for diversity

595

01:02:44,209 --> 01:02:53,740

in your work place.
And, well, that's it for now.

596

01:02:53,740 --> 01:03:06,459

I think the best thing in terms of pushing,
uh, for diversity in the work place first

597

01:03:06,459 --> 01:03:14,109

of all, um, we gotta lead by example and one
of the first things I always say is first

598

01:03:14,109 --> 01:03:21,640

things first is my job I'm going to make sure
I do a great job at what I do, be an example.

599

01:03:21,640 --> 01:03:26,969

Uh, lead by example.
Second thing is get involved in organizations

600

01:03:26,969 --> 01:03:37,779

like hola that actually promote diversity.
But, you know, the first thing is you gotta

601

01:03:37,779 --> 01:03:52,589

take care of yourself first and then go out
and help others.

602

01:03:52,589 --> 01:04:00,349

>> I will agree with that.

I think that from my perspective I think that

603

01:04:00,349 --> 01:04:01,839

one of the things that is important for us
is to think about the families themselves

604

01:04:01,839 --> 01:04:04,239

like in your case and in my case as well,
everything went back home what do I want to

605

01:04:04,239 --> 01:04:08,460

do, where do I want to go, what job do I want
to do?

606

01:04:08,460 --> 01:04:11,549

I think that I want to throw out with the
families even though the possibilities weren't

607

01:04:11,549 --> 01:04:15,000

there for them, the possibilities are there
for this generation and the next one.

608

01:04:15,000 --> 01:04:21,400

We live in a country now where anyone can
achieve anything that they want.

609

01:04:21,400 --> 01:04:27,799

I mean, your story's amazing and mine as well
when I come back from not even knowing how

610

01:04:27,799 --> 01:04:33,869

to speak English; right?

And so I think that the parents play an amazing

611

01:04:33,869 --> 01:04:39,599

role into trying to push the kids forward.
The kids also play an amazing role trying

612

01:04:39,599 --> 01:04:46,470

to talk back to the parents, wait a minute
maybe that's not what I want to do.

613

01:04:46,470 --> 01:04:48,710

Maybe I do want to do this.
I think it's a back and forth, but it's more

614

01:04:48,710 --> 01:04:56,929

of a don't feel embarrassed you don't want
to do something maybe people around you don't.

615

01:04:56,929 --> 01:05:03,759

>> I have a question right here on the front.
>> Thank you so Mitch for wonderful talk.

616

01:05:03,759 --> 01:05:09,179

We have students here from Virginia, middle
schools and high school.

617

01:05:09,179 --> 01:05:13,279

Do you have any words for the kids that are
not interested in stem?

618

01:05:13,279 --> 01:05:18,120

Here at NASA we are all about Stem.
There are still kids that say, you know, it's

619

01:05:18,120 --> 01:05:22,900

too hard or they're not interested they might
not care.

620

01:05:22,900 --> 01:05:28,249

What words do you have for nem?
>> Well, I think, um, I don't think a lot

621

01:05:28,249 --> 01:05:33,809

of times it's just the interest the students
have it's not that it's hard for them, it's

622

01:05:33,809 --> 01:05:37,059

just that that's not what they're into.
And that's okay.

623

01:05:37,059 --> 01:05:45,109

The beauty of what I just told with respect
to the recipe can apply to any major, to any

624

01:05:45,109 --> 01:05:48,940

field of interest.
The one thing I will tell the kids is be true

625

01:05:48,940 --> 01:05:56,829

to yourselves. Don't be what your parents
want you to be, be what you want to be.

626

01:05:56,829 --> 01:06:09,200

It's okay if it's not stem, though, you know,
I hope it's Stem because we need a lot of

627

01:06:09,200 --> 01:06:15,380

scientists and engineers.
That's what make our industry so competitive,

628

01:06:15,380 --> 01:06:20,199

but it doesn't have to be stem, and it ror
kay.

629

01:06:20,199 --> 01:06:27,130

>> I think from my perspective we need all
classes, backgrounds, and interests.

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01:06:27,130 --> 01:06:32,809

You look at the NASA logo and it look pretty
cool.

631

01:06:32,809 --> 01:06:36,400

I don't think an engineer would have come up with it.

632

01:06:36,400 --> 01:06:39,749

I don't think I would have designed something like that.

633

01:06:39,749 --> 01:06:43,029

You need teep people that like all kinds of stuff.

634

01:06:43,029 --> 01:06:46,709

You need designers, you need people to think about human factors.

635

01:06:46,709 --> 01:06:53,739

For example, if you're in space or if you're operating a robot from earth, and you're in

636

01:06:53,739 --> 01:06:59,739

the robot is on Mars you need to think about how to actually send those commands in a way

637

01:06:59,739 --> 01:07:03,039

that it's intuitive.

The robotic arm is here, and I can see it

638

01:07:03,039 --> 01:07:09,150

in my mind or how to wear DONGLES that will use those images and project to you as though

639

01:07:09,150 --> 01:07:17,089

you're sitting on the surface of Mars. You need also people that advocate for most of

640

01:07:17,089 --> 01:07:22,750

the work that NASA does.

People that work on the education system.

641

01:07:22,750 --> 01:07:29,109

You don't necessarily need to actually have a math or engineering background to help with

642

01:07:29,109 --> 01:07:32,459

the cause for us to get to Mar or to travel and explore space.

643

01:07:32,459 --> 01:07:41,949

>> Wonderful, thank you.

I have a question I'm sorry we'll take a question

644

01:07:41,949 --> 01:07:44,890

from the back and then I will come back to you.

645

01:07:44,890 --> 01:07:51,189

>> What are the usual lifespan of a Rover and what materials

646

01:07:51,189 --> 01:07:55,520

do you use to make the Rover?

>> That's a good question.

647

01:07:55,520 --> 01:08:02,390

There's a lot of constraints that we need to evaluate to determine how long will the

648

01:08:02,390 --> 01:08:05,959

mission actually last.

Some missions are very short, some missions

649

01:08:05,959 --> 01:08:09,199

are very long.

For example, for the Curiosity Rover, that

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01:08:09,199 --> 01:08:12,969

mission is a long mission because we have a nuclear power robot.

651

01:08:12,969 --> 01:08:21,420

So it was at the start designed to be a 1 to 2 years mission we can last as long as

652

01:08:21,420 --> 01:08:28,249

we stay there.

They had been there or one of them is still

653

01:08:28,249 --> 01:08:35,650

there currently operating at a very low power.

To answer your questions exactly, it all boil

654

01:08:35,650 --> 01:08:40,710

down to can you talk to the Rover?

Is there a way that you can power on the Rover,

655

01:08:40,710 --> 01:08:45,779

even at the bare minimum to still communicate

to it and then bring the data back?

656

01:08:45,779 --> 01:09:01,259

With respect to the material material is durable

and not too heavy you still have an objective

657

01:09:01,259 --> 01:09:08,520

with that mission.

The wheels of itself of the rover are made

658

01:09:08,520 --> 01:09:10,989

of aluminum.

Material that would be durable but at the

659

01:09:10,989 --> 01:09:16,889

same time light.

We try to squeeze every single piece of juice

660

01:09:16,889 --> 01:09:25,500

we can get out of the ron eiver, eeb fn you

can turn it on, power it off immediately,

661

01:09:25,500 --> 01:09:29,630

that's still sting you can get science out of.

662

01:09:29,630 --> 01:09:35,049

>> Thank you.

>> Hi, so it's really wonderful to hear stories

663

01:09:35,049 --> 01:09:40,619

from Jose, wonderful of you to take us on journey to the space station.

664

01:09:40,619 --> 01:09:50,109

And Diane u, all the thing you showed especially the TV images, the places where we feel like

665

01:09:50,109 --> 01:09:53,299

maybe that could be me.

I was an I dream of jeany person, too, and

666

01:09:53,299 --> 01:10:02,510

it wasn't about the jeany.

I'd like to ask you for something a little

667

01:10:02,510 --> 01:10:08,800

more subtle.

It's easy to be seen, but also not quite to

668

01:10:08,800 --> 01:10:12,570

be seen.

People think they know who they see, but there's

669

01:10:12,570 --> 01:10:18,570

more there than often they can really get to unless you bring it to them.

670

01:10:18,570 --> 01:10:26,400

You know, in a meeting when you feel like people aren't really understanding what you

671

01:10:26,400 --> 01:10:31,389

might bring.

Or you see someone at the taibl that you realize

672

01:10:31,389 --> 01:10:39,889

people are nlt seeing them.

Can you give us practical recipes or bullets

673

01:10:39,889 --> 01:10:45,989

for those things?

>> Well y think the first thing is that you

674

01:10:45,989 --> 01:10:55,739

as an individual are in a work place and you

say I really want to sort of not just blend

675

01:10:55,739 --> 01:11:04,480

in and not get if you will get rek recognized,

get picked up by somebody or take under somebody's

676

01:11:04,480 --> 01:11:10,429

arm.

The fist thing I would do is if I see an individual

677

01:11:10,429 --> 01:11:17,300

who has that promise, start the mentd oring

program with myself or with somebody else

678

01:11:17,300 --> 01:11:25,159

that's in a closer, uh, age group or area

of interest and set up that mentoring so that

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01:11:25,159 --> 01:11:35,370

person starts expanding it's really easy to

be in a big organization and you fall into

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01:11:35,370 --> 01:11:40,590

a narrow cubical and then all of a sudden

you get lost in the hustle and bustle.

681

01:11:40,590 --> 01:11:48,510

But expand the horizons in that sense and
as managers our job is to identify this talent

682

01:11:48,510 --> 01:11:54,550

and to nurn nurture it and help it grow.
As individuals our job is to say how can I

683

01:11:54,550 --> 01:12:00,150

grow and start adopting those measures and
how can I network and start networking so

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01:12:00,150 --> 01:12:08,809

you get out and expand your little circle
of comfort to make it here.

685

01:12:08,809 --> 01:12:18,309

>> From my perspective as an individual I
think from recognizing in my mind we have

686

01:12:18,309 --> 01:12:33,730

different backgrounds or cultures that actually
is beneficial we're not the same, I look different.

687

01:12:33,730 --> 01:12:39,150

What I focus on the fact focus on the fact
that when you bring something to the table,

688

01:12:39,150 --> 01:12:47,739

when you have to figure out to bring food
home or how many jobs you need to work through

689

01:12:47,739 --> 01:12:53,449

education, you start developing that mentality
of how do I get to my goal on the most efficient

690

01:12:53,449 --> 01:13:01,770

way fast enough and that doesn't cost a lot.
That stort of plentality you start creating

691

01:13:01,770 --> 01:13:07,510

and cultivating in a meeting where you're talking about we need to deploy the arm and

692

01:13:07,510 --> 01:13:11,440

take three pictures and put it back inside where do we park?

693

01:13:11,440 --> 01:13:18,219

It just comes to you, like, wait a second, I think we can do it this other way because

694

01:13:18,219 --> 01:13:25,780

it's something that you have everyone has different struggles and all the struggles

695

01:13:25,780 --> 01:13:30,750

can come together in a single moment no now when you are in meetings, I um completely

696

01:13:30,750 --> 01:13:37,889

agree with you it's about the mentoring. Everyone has their talent and their brilliance,

697

01:13:37,889 --> 01:13:42,000

they're working for NASA, that's why they're a part of the team.

698

01:13:42,000 --> 01:13:49,639

It's more of a not everyone will be as talkative or they don't come forward that often.

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01:13:49,639 --> 01:13:55,520

It's also talking to them, getting mentoring go, making sure that they understand how to

700

01:13:55,520 --> 01:14:00,280

develop themselves on the job. Sometimes I think that at least for me it

701

01:14:00,280 --> 01:14:08,820

was a so excited I'm part of this team y don't want to mess up.

702

01:14:08,820 --> 01:14:26,280

I don't know what to say, what not to say, how to navigate the objective was to get to

703

01:14:26,280 --> 01:14:39,020

NASA, now I'm part of NASA.

>> Which part of the international space station

704

01:14:39,020 --> 01:14:52,320

do you usually fix the most?

>> Sometimes you've got these false signals

705

01:14:52,320 --> 01:15:00,059

for air leaks so you've got to work the protocol whenever you get an alarm system and a big

706

01:15:00,059 --> 01:15:06,360

alarm that says hey, you got a leak.

That's usually one of the ones.

707

01:15:06,360 --> 01:15:15,320

The recycling of all the moisture the international space station collects sometimes it breaks

708

01:15:15,320 --> 01:15:19,389

down so they have to fix it.

Those are the things that usually the things

709

01:15:19,389 --> 01:15:24,429

that are use on a continuous basis.

>> Yes.

710

01:15:24,429 --> 01:15:30,120

Go ahead.

>> How many times did you went to space?

711

01:15:30,120 --> 01:15:34,179

>> You know, unfortunately I only went once in 2009.

712

01:15:34,179 --> 01:15:42,750

When I got back, I got the news that NASA was going to retire the shuttle fleet and

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01:15:42,750 --> 01:15:46,969

there were four more missions to fly after our mission and was it.

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01:15:46,969 --> 01:15:53,139

They already had astronaut applying to that position. I knew I wasn't going to fly again.

715

01:15:53,139 --> 01:15:57,050

I'm a big believer of history that history repeats itself.

716

01:15:57,050 --> 01:16:05,400

I said hm, when's the last time we retire ad vehicle and put a new one in line?

717

01:16:05,400 --> 01:16:12,030

It was when I was 10 years old, Apollo 17, 1972, and it wasn't until nine years later

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01:16:12,030 --> 01:16:14,900

in 1981 that we had the maiden flight for the space shuttle.

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01:16:14,900 --> 01:16:23,920

So I did math in my mind and I odz kay, they're going to retire in 2011, 2012, 9 years that's

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01:16:23,920 --> 01:16:25,289

2020.

I'm going to be how old?

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01:16:25,289 --> 01:16:30,389

So I said you know what, I'm going to get out while the getting's good and leaving on

722

01:16:30,389 --> 01:16:40,909

a high note and go on to other challenges.

>> Okay, um, go ahead.

723

01:16:40,909 --> 01:16:47,590

>> Around how long did it how much time in college did you spend to be able to become

724

01:16:47,590 --> 01:16:51,679

an astronaut?

>> Well, first of all, you need a technical

725

01:16:51,679 --> 01:16:59,050

degree, whether it's science, engineering, medicine, whatever, under graduate.

726

01:16:59,050 --> 01:17:04,140

It's good to have a graduate degree, masters.

And it's great to have a PhD.

727

01:17:04,140 --> 01:17:14,070

So then you want to work in an area like NASA or a contractor that works in the space industry

728

01:17:14,070 --> 01:17:17,300

so you can get the experience, and then you start applying.

729

01:17:17,300 --> 01:17:22,820

It's a very competitive process.

I think this go around more than 18,000 folk

730

01:17:22,820 --> 01:17:30,440

that meet the minimum requirements are applying.

So you just gotta be patient, keep trying

731

01:17:30,440 --> 01:17:33,840

and follow my recipe and I'm sure you'll get there.

732

01:17:33,840 --> 01:17:39,790

>> It take as few years but they fly by.

>> Exactly.

733

01:17:39,790 --> 01:17:49,109

>> Do you ever get scared, like, in general about what you're doing?

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01:17:49,109 --> 01:17:56,820

>> I do.

I do because you have a lot of responsibility.

735

01:17:56,820 --> 01:18:02,960

In my specific case of mission lead we're making decisions as to where are we going

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01:18:02,960 --> 01:18:11,559

to drive, where are we going to instill the arm, what rocks are we going to touch, is

737

01:18:11,559 --> 01:18:15,820

the vehicle stable.

We wanted to make sure that everything we

738

01:18:15,820 --> 01:18:27,200

do with the rover we can be safe you cr unstow the arm think you're okay, and then something

739

01:18:27,200 --> 01:18:40,260

else happens.

So I do but the good news about it is that

740

01:18:40,260 --> 01:18:45,619

we are trained to do the job that we are doing at that moment.

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01:18:45,619 --> 01:18:50,420

So we're doing the best that we can, assessing the situation, making the right decisions

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01:18:50,420 --> 01:18:54,230

and at that point give it all and everything you know to the best of your abilities. So

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01:18:54,230 --> 01:18:59,449

you have to trust that things are going to be okay.

744

01:18:59,449 --> 01:19:05,840

The next day the first thing I do is check that it actually did go well.

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01:19:05,840 --> 01:19:14,390

>> You know, human space flight, it's challenging. It's certainly not routine.

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01:19:14,390 --> 01:19:21,989

I know when I finished my basing training my technical assignment was to work as a caped

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01:19:21,989 --> 01:19:29,860

crusader which meant I was part of a 4■astronaut team that went one week before the launch,

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01:19:29,860 --> 01:19:35,840

and we basically lived inside the shuttle, calibrating, setting up the equipment, setting

749

01:19:35,840 --> 01:19:39,840

everything up, and my biggest concern was bt for me, it was actually for my crew mates

750

01:19:39,840 --> 01:19:44,960

in a sense that, you know, unfortunately my face was the last one they saw before we closed

751

01:19:44,960 --> 01:19:47,840

the hatch.

But more importantly was the fact that did

752

01:19:47,840 --> 01:19:50,619

I put the switch in the right position?

Did I do this, did I do that?

753

01:19:50,619 --> 01:19:55,870

Thing that can affect the outcome of the mission,
and several lives on board.

754

01:19:55,870 --> 01:20:02,300

That's what scared me the most is I'd better
not make a mistake. The only other team time

755

01:20:02,300 --> 01:20:06,909

I could remember and say yeah, maybe I was
little scared was when we were getting ready

756

01:20:06,909 --> 01:20:11,050

for launch and if I can just walk you through
tha t.

757

01:20:11,050 --> 01:20:18,360

You're sitting back on your back, and you
reach down, countdown to 0, the three engines

758

01:20:18,360 --> 01:20:25,330

start, you hear them, you feel a gentle vibration
and you say okay, we're getting ready to go.

759

01:20:25,330 --> 01:20:27,260

And then, like, two seconds later the solid
rocket boosters turn on.

760

01:20:27,260 --> 01:20:31,559

Man, all of a sud thn noise level goes up
an order of magnitude, the vibration, a violent

761

01:20:31,559 --> 01:20:38,261

vibration, and then just as you think this whole thing's going to fall apart, uh, it

762

01:20:38,261 --> 01:20:43,720

leans a little bit and you feel the push and you're off to the races.

763

01:20:43,720 --> 01:20:54,079

I think at that point when it leaned like that, I'd what the heck's happening.

764

01:20:54,079 --> 01:20:59,869

I came back and libbed to tell about it.

>> I think we have time for one more question.

765

01:20:59,869 --> 01:21:03,690

Or one or two.

>> Um.

766

01:21:03,690 --> 01:21:07,520

Gentlemen in the back?

Yes.

767

01:21:07,520 --> 01:21:15,190

>> My name is William, I have one question I got for y'all is what are the different

768

01:21:15,190 --> 01:21:22,019

internships or opportunities that you have for kids our age to follow stem careers or

769

01:21:22,019 --> 01:21:29,449

how can you find those opportunities.

>> Okay, well, for NASA, uh, I mean, there's

770

01:21:29,449 --> 01:21:34,143

lot of opportunities.

We've got the associate director here, Don

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01:21:34,143 --> 01:21:43,469

James of education if you just log on to NASA.gov, you'll see there's internships, fellowships

772

01:21:43,469 --> 01:21:51,619

a burn of programs out there that NASA has that gives opportunity all the way from high

773

01:21:51,619 --> 01:21:59,230

school to post opportunities for the kids and I encourage you to look at that website.

774

01:21:59,230 --> 01:22:05,040

There's ways to sign up for it and fight r fill out applications.

775

01:22:05,040 --> 01:22:07,440

So visit NASA.gov.

>> Absolutely.

776

01:22:07,440 --> 01:22:19,340

And you wouldn't believe how many there are I work at summer, and when the summer I work

777

01:22:19,340 --> 01:22:27,550

at JPL, in some cases they're asking us to work for home so the interns can actually

778

01:22:27,550 --> 01:22:32,780

come to campus and do their thing.

I think that what I'm trying to tell you is

779

01:22:32,780 --> 01:22:41,130

that when I was on your shoes I will be thinking well, there's internship, but maybe not enough.

780

01:22:41,130 --> 01:22:45,909

And yes, you have to be talented and bright, but there's so many.

781

01:22:45,909 --> 01:22:54,829

There are an incredible amount and pretty soon you'll be hearing from Mr.\hDonald James.

782

01:22:54,829 --> 01:23:02,210

We wanted you to get an understand offing the opportunities that are out there and the

783

01:23:02,210 --> 01:23:05,959

future opportunities as well.

>> Young lady right here, please proceed.

784

01:23:05,959 --> 01:23:20,170

>> When you were in the middle of pursuing your dream, were there people being negative

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01:23:20,170 --> 01:23:27,849

saying you couldn't do it?

And if th there were, how did you get through

786

01:23:27,849 --> 01:23:28,849

it?

>> Great question.

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01:23:28,849 --> 01:23:29,849

>> Absolutely.

There's always the nay sayers.

788

01:23:29,849 --> 01:23:34,719

People would also tell me.

Wow died didn't you get frustrated rejected

789

01:23:34,719 --> 01:23:41,380

11 times?

I looked at it\h■ ■\hyou know y looked

790

01:23:41,380 --> 01:23:46,110

at the glass not half empty but half full

because I would look at it I would say you

791

01:23:46,110 --> 01:23:51,469

know, what's the worst that could happen if
or don't get selected?

792

01:23:51,469 --> 01:24:00,059

Well, because I shot so high to be an astronaut,
that forced me to go to college, get an engineering

793

01:24:00,059 --> 01:24:02,929

degree.

It forced me to go to graduate school.

794

01:24:02,929 --> 01:24:10,420

It forced me to work at the international
lab where I was having a great career.

795

01:24:10,420 --> 01:24:16,469

So the consolation prize was I want to be
a great engineer.

796

01:24:16,469 --> 01:24:24,540

Not too bad of a consolation prize.

The moral of that story is it's not the best

797

01:24:24,540 --> 01:24:27,650

Make sure you're going to enjoy that
journey.

798

01:24:27,650 --> 01:24:33,570

Because that's where you're going to spend
95% of your time.

799

01:24:33,570 --> 01:24:38,699

So enjoy the journey.

>> From my perspective, yes, there was

800

01:24:38,699 --> 01:24:42,320

There.

You will find people that will probably think

801

01:24:42,320 --> 01:24:45,199

you will not be able to do what you want to do.

802

01:24:45,199 --> 01:24:50,020

The thing that you have to recognize is probably because you are shooting for something that

803

01:24:50,020 --> 01:24:53,519

people round you didn't think was possible for them.

804

01:24:53,519 --> 01:24:58,790

When you're going for something people think is impossible, they're probably going to

805

01:24:58,790 --> 01:25:03,720

say you're not going to get that done, or probably not going to get there.

806

01:25:03,720 --> 01:25:10,050

Just to tell you a story about mine, when I was going to apply for NASA, I called my parents

807

01:25:10,050 --> 01:25:15,179

and I told my dad I'm going to apply for NASA and he couldn't believe it.

808

01:25:15,179 --> 01:25:21,539

He actually was concerned that are you sure you want to apply for it?

809

01:25:21,539 --> 01:25:23,869

Because you're going to get rejected and probably this is not a good fit for you.

810

01:25:23,869 --> 01:25:32,820

I think that my advice to you would be to believe in what you want to do.

811

01:25:32,820 --> 01:25:39,489

If you have a clear understanding of this
is who I want to be if you know who you want

812

01:25:39,489 --> 01:25:45,060

too to be\h■ ■\hmaybe you haven't figured
out how to get there, but find the path and

813

01:25:45,060 --> 01:25:48,209

it doesn't matter what's going on around you.
You will find a way.

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01:25:48,209 --> 01:25:51,780

There's lots of people around me that helped
me lots of people I talked to that I mentioned

815

01:25:51,780 --> 01:25:54,699

what I want to do.
They were the one whose said do this, try

816

01:25:54,699 --> 01:25:59,570

this, don't do that.
You will find people that want to help you

817

01:25:59,570 --> 01:26:02,059

but you have to believe in what we want to
do.

818

01:26:02,059 --> 01:26:07,849

>> Can I add a little something?
I think you hit the nail on the head.

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01:26:07,849 --> 01:26:15,850

Also I think importance of meantership and
finding people that believe in you is also

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01:26:15,850 --> 01:26:20,469

very important.
I feel like especially Hispanics or Latinos,

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01:26:20,469 --> 01:26:25,199

you don't necessarily have, you know, people to go to like Diana mentioned people that

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01:26:25,199 --> 01:26:33,260

look like you or that can relate to you.

So I think it's very important to try to find

823

01:26:33,260 --> 01:26:35,699

mentors or people that actually believe in you.

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01:26:35,699 --> 01:26:43,230

Sometimes people believe in you more than you believe in yourself, am I right?

825

01:26:43,230 --> 01:26:47,090

>> And don't wait for the mentor to come to you.

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01:26:47,090 --> 01:26:53,219

You have to reach out to them.

There's so many times that I've gone to the

827

01:26:53,219 --> 01:26:56,530

person and said hey, I want to do your job in a few years from now or many years from

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01:26:56,530 --> 01:27:01,780

now.

Can you please sit down with me and currently

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01:27:01,780 --> 01:27:05,860

I have five mentors and all of them I talk to about different things.

830

01:27:05,860 --> 01:27:10,409

Don't think you have to limit the amount of talk that you have to talk to, and don't expect

831

01:27:10,409 --> 01:27:13,050

them to come to you.

Feel free to go to them.

832

01:27:13,050 --> 01:27:15,300

You wouldn't believe how excited they actually get.

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01:27:15,300 --> 01:27:22,019

Ti they tell you I did this, do that, don't do this\h■ ■\h.

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01:27:22,019 --> 01:27:27,650

>> I was notified that apparently there is a few questions but I'll go ahead and open

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01:27:27,650 --> 01:27:31,219

it up to maybe two more.

Proceed.

836

01:27:31,219 --> 01:27:41,599

>> Hi, my name is Chris.

In terms of work ethic what do you think getting

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01:27:41,599 --> 01:27:52,730

y fish leent and correctly?

>> How to get the taivelg how to get the task

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01:27:52,730 --> 01:27:55,210

done?

I think the important thing is before you

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01:27:55,210 --> 01:28:00,900

even start working on it is you develop a strategy.

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01:28:00,900 --> 01:28:07,690

Some times the most important part is before you even start work, working on a task.

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01:28:07,690 --> 01:28:11,110

It's the planning of it, how you're going to execute it.

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01:28:11,110 --> 01:28:16,659

Lots of times we're eager beavers and we want to jump right in and start working on it without

843

01:28:16,659 --> 01:28:21,469

having a strategy.

You feel like you're going to get delayed

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01:28:21,469 --> 01:28:26,700

by doing this planning at the front end, but believe me you'll be finishing a lot quicker

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01:28:26,700 --> 01:28:31,510

than the person who didn't do the pre-planning.

I think pre-planning before execution is

846

01:28:31,510 --> 01:28:36,010

the smartest way to go.

>> I think so, too.

847

01:28:36,010 --> 01:28:44,329

I think it's interesting because I have a team of at least 5 to 8 different systems

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01:28:44,329 --> 01:28:49,960

engineers that work on the mission and they're the ones the tactical lead personnel.

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01:28:49,960 --> 01:28:53,230

The average age of my team is in between this and this approximately 22 years old.

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01:28:53,230 --> 01:29:02,780

One of the things that I look about it the most is that, um, the plan.

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01:29:02,780 --> 01:29:08,920

I talk to them and ask them to please do something,
I think that what it matters is for them or

852

01:29:08,920 --> 01:29:11,869

in this case for you to understand what is
the final goal.

853

01:29:11,869 --> 01:29:14,449

And then think about how you're going to get
there.

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01:29:14,449 --> 01:29:18,570

And then talk to the person that is asking
you to do the tarveg or in this case if it's

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01:29:18,570 --> 01:29:24,340

a project of yours at school go back to your
teacher or professor say you asked me to do

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01:29:24,340 --> 01:29:28,110

this.

This is the goal and this is what I think

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01:29:28,110 --> 01:29:35,329

I should do to get there.

It will save you a lot of time.

858

01:29:35,329 --> 01:29:40,789

Professors respect from their perspective
it's another chance for them to either correct

859

01:29:40,789 --> 01:29:44,559

or redirect or help even more and give you
more resources.

860

01:29:44,559 --> 01:29:53,820

So I think I know where you're coming from.

You're so eager to demonstrate that you can

861

01:29:53,820 --> 01:29:58,640

add value so you want to jump the gun and start running it.

862

01:29:58,640 --> 01:30:04,240

But, um, I think that it's more valuable to demonstrate that you can think about the plan

863

01:30:04,240 --> 01:30:09,269

and you have a goal to get to it, and then get the back up for it.

864

01:30:09,269 --> 01:30:16,239

>> Hi, my name is Lucy MACIAS.

We run a youth development program at north

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01:30:16,239 --> 01:30:23,460

western high school.

The youth that we work with comes from limited

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01:30:23,460 --> 01:30:28,750

resources their families try to stup support them but maybe just cannot.

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01:30:28,750 --> 01:30:35,800

Our job is to try to motivate them.

To continue getting an education or just believing

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01:30:35,800 --> 01:30:41,539

in themselves.

But a lot of times we have a lot of obstacles

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01:30:41,539 --> 01:30:48,000

that prevent us from keeping them motivated.

What was a way that mentors were effective

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01:30:48,000 --> 01:30:54,710

to you and how do you care is a good way to reach youth that have a lot of, um, obstacles

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01:30:54,710 --> 01:31:02,579

in their way?

>> I think in my particular case, even though

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01:31:02,579 --> 01:31:09,770

my parents only had a third grade education,
they provided an environment that basically

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01:31:09,770 --> 01:31:23,810

gave me the license to dream, dream big, and
my dad gave me a recipe to provide gave me

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01:31:23,810 --> 01:31:31,079

the tools to put that dream into reality.

Along the way I had teachers like miss young

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01:31:31,079 --> 01:31:47,309

who helped great mentors in math and science.

I think it's great.

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01:31:47,309 --> 01:31:53,760

I don't think it just has to be the parents.

You know y was lucky that my parents were

877

01:31:53,760 --> 01:31:58,110

very engaged.

I understand other parents rnts as engaged.

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01:31:58,110 --> 01:32:05,100

You become the substitute.

You empower them stoo believe in themselves

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01:32:05,100 --> 01:32:15,690

you empower the persons to believe that they
cu cheeive anything and doing so you provide

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01:32:15,690 --> 01:32:20,500

the role that my parents provided.

Are I y think the economic disadvantage was

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01:32:20,500 --> 01:32:27,219

the secondary issue.

The fist was believing that I could do that.

882

01:32:27,219 --> 01:32:33,019

The second is how am I going to pay for this.

That's when you start working two jobs and

883

01:32:33,019 --> 01:32:36,090

take out student leet loans, but there's an

answer to all that.

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01:32:36,090 --> 01:32:56,159

The great thing, let's get them there first.

I think you providing that mentor role

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01:32:56,159 --> 01:32:58,440

and giving them that life\h■ ■\hgiving

them that license to dream, that's the best

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01:32:58,440 --> 01:33:05,369

thing to do.

>> Um, I think that for me there were two

887

01:33:05,369 --> 01:33:14,840

things and maybe I would recommend.

I had a professor, actually, a teacher in

888

01:33:14,840 --> 01:33:22,949

my high school in my chemistry teacher who

I will do my homework very quick learly or

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01:33:22,949 --> 01:33:29,500

do my test very quickly and I would feel bad

because I wasn't sure if I did it right because

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01:33:29,500 --> 01:33:38,030

I did it so quickly and he would give me extra

problems.

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01:33:38,030 --> 01:33:45,309

That made me feel unique.

It made me feel like you actually believe

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01:33:45,309 --> 01:33:54,650

in me.

You're asking me to push the boundary it's

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01:33:54,650 --> 01:34:05,540

not wrong that I need more.

I feel like he trusted me, he believed in

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01:34:05,540 --> 01:34:17,780

me, and sometimes it's the heart of the student,

I loved chemistry but I was really bad at

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01:34:17,780 --> 01:34:19,270

physics.

I hated physics.

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01:34:19,270 --> 01:34:25,400

But my professor actually was my teacher was

very involved with me in help ming understand

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01:34:25,400 --> 01:34:32,369

how to take the teachers made nee feel like

I could do something.

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01:34:32,369 --> 01:34:41,070

But I need ad little bit more.

I needed somebody who was actually doing it.

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01:34:41,070 --> 01:34:49,960

That relationship between understanding.

Does that person even exist?

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01:34:49,960 --> 01:34:55,499

Do they look like me?

I think I will recommend having probably is

901

01:34:55,499 --> 01:35:00,489

having guest speakers come to class and have them tell the story.

902

01:35:00,489 --> 01:35:06,100

And then have the opportunity for them to ask questions of what did you do, or questions

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01:35:06,100 --> 01:35:07,570

that the students are asking us today. Did you feel scared?

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01:35:07,570 --> 01:35:10,100

Did you have any concerns? How did you manage to do those things?

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01:35:10,100 --> 01:35:19,050

>> I would just like to say, you know, thank you for the work that you're doing.

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01:35:19,050 --> 01:35:24,519

I think it's amazing. For me, personally, I'm, like, the youngest of eight kids and

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01:35:24,519 --> 01:35:29,389

second to go to college. So I actually never even thought about going

908

01:35:29,389 --> 01:35:33,429

to college. It was because of people like you who actually

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01:35:33,429 --> 01:35:38,179

taught me to believe in myself and think about the possibilities that I'm here today.

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01:35:38,179 --> 01:35:39,659

So the words "the work that you guys are doing is amazing."

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01:35:39,659 --> 01:35:45,179

So thank you for being here. Um, I think I have room for Nguyen more. Crrn I take one

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01:35:45,179 --> 01:35:47,589

more question?

>> Absolutely.

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01:35:47,589 --> 01:35:53,230

>> All right.

Who gets the last question?

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01:35:53,230 --> 01:35:57,260

This gentleman right there.

Yes.

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01:35:57,260 --> 01:36:07,969

>> How did you get to Mars?

>> How will we get to Mars? We first need

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01:36:07,969 --> 01:36:14,030

to come up with a lot of technology that we could develop.

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01:36:14,030 --> 01:36:15,389

That will actually take people safely to Mars.

It's very important to get to Mars but it's

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01:36:15,389 --> 01:36:24,099

more important that we can get there and come back. The thing that we have to do is a series

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01:36:24,099 --> 01:36:31,850

of missions that demonstrate that we can survive on Mars, that we have the technology that

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01:36:31,850 --> 01:36:35,769

will keep us alive.

The technology that brings us back.

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01:36:35,769 --> 01:36:36,769

And then at the same time, think about the crew.

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01:36:36,769 --> 01:36:40,030

Right, the most important thing is that although we're exploring we're going there as a united

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01:36:40,030 --> 01:36:43,710

team.

We all have to figure out how to work together,

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01:36:43,710 --> 01:36:48,769

how to live together, a long journey probably eight to nineh■ ■\h.

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01:36:48,769 --> 01:36:53,769

So I think that NASA itself and other companies are working to get us there.

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01:36:53,769 --> 01:36:57,709

And we can find a path as long as we work together and don't forget what the goals are.

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01:36:57,709 --> 01:37:08,909

>> Does that path take us through the moon?

>> That will not be up to me to decide fl.

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01:37:08,909 --> 01:37:15,920

>> On that note, um, why don't we give our, um, speakers here a round of applause.

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01:37:15,920 --> 01:37:22,929

And thank them for being here with us today. Taking your questions.

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01:37:22,929 --> 01:37:25,840

I would now like to ask if they could take their seats and I would like to now transition

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01:37:25,840 --> 01:37:32,820

over and welcome our, um, associate administrator
for education, Mr.\hDonald, uh, James he will

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01:37:32,820 --> 01:37:39,090

be able to answer any and all questions you
have in term of resources and where NASA is

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01:37:39,090 --> 01:37:53,419

in term of our education plalt form.
Thank you.

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01:37:53,419 --> 01:38:01,019

>> I don't think I need the platform.
I'm really glad to see you.

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01:38:01,019 --> 01:38:08,630

I'm really glad to see the students much of
what I'm going to say is directed that students

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01:38:08,630 --> 01:38:13,290

but wasn't that just a cool way to start the
day, with Diana and Jose?

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01:38:13,290 --> 01:38:24,369

I don't know u about you, but that was amazing.
It's always gratifying to me to find connections

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01:38:24,369 --> 01:38:31,780

to people and, uh, Jose and I discovered that,
you know, we came from the same area in California,

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01:38:31,780 --> 01:38:35,599

Stockton.
My father moved thereafter he finished law

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01:38:35,599 --> 01:38:40,980

school, he wanted to be a civil rights attorney.
In stock thrn there were many brown people

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01:38:40,980 --> 01:38:46,619

and black people who had civil rights issues
and I remember as a little kid him talking

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01:38:46,619 --> 01:38:51,750

about the struggles of the farm workers and
defending people who didn't have money and

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01:38:51,750 --> 01:38:54,690

resources.

So that was really my first introduction to

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01:38:54,690 --> 01:38:59,249

people who were not like me, and people who
were like me.

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01:38:59,249 --> 01:39:04,949

So it's really great to have an AMIGO from
Stockton, California.

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01:39:04,949 --> 01:39:09,139

I actually spent most of my up bringing in
Sacramento.

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01:39:09,139 --> 01:39:13,710

I'm really glad to have the students here,
is this the first time you've been to NASA

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01:39:13,710 --> 01:39:17,090

before, raise your hands.

Wow.

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01:39:17,090 --> 01:39:20,590

Did you guys know that NASA headquarters was
here in Washington D.C.?

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01:39:20,590 --> 01:39:28,739

A lot of times I ask people that question
they think it's in Houston. I don't know why...:

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01:39:28,739 --> 01:39:33,960

You know, we call the students who are out the Mars generation.

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01:39:33,960 --> 01:39:40,300

We say that because, um, we actually have plans to send humans to Mars and actually

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01:39:40,300 --> 01:39:47,360

bring them back in about 20 or 30 years ch
If you add your age to 20 or 30 years you're

954

01:39:47,360 --> 01:39:51,760

the perfect age.

Who would actually like to personally go on

955

01:39:51,760 --> 01:40:01,719

a rocket and go to Mars?

I see people in the front and in the back.

956

01:40:01,719 --> 01:40:06,760

The person you're sitting next to you're willing to be in a space craft for about five or six

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01:40:06,760 --> 01:40:11,330

months.

Yes, and then you have to work on Mars for

958

01:40:11,330 --> 01:40:14,690

about a year, then you come back.

So you're going to be gone a long time.

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01:40:14,690 --> 01:40:20,210

If you're still willing to do that, then we have plans for you.

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01:40:20,210 --> 01:40:27,090

The whole point of the work that we do in NASA education is to insure that thlt things

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01:40:27,090 --> 01:40:33,789

that NASA wants to do in 10, twents, 30 years
from now that was can accomplish by having

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01:40:33,789 --> 01:40:39,130

the right people to do it.

And it really is all about the people.

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01:40:39,130 --> 01:40:44,790

There's no machine that's going to do everything
for us because somebody had to program the

964

01:40:44,790 --> 01:40:48,300

machine, someone had to fabricate it, someone
had to design it.

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01:40:48,300 --> 01:40:54,140

If we don't have capable people like yourselves
to do the kinds of exciting things that we

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01:40:54,140 --> 01:40:57,579

envision doing then we're not going to be
able to do it.

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01:40:57,579 --> 01:41:12,340

I don't know about you, but I just think.

How many people think there are planets out

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01:41:12,340 --> 01:41:20,460

there just like earth.

That may mean that there's life on those planets.

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01:41:20,460 --> 01:41:25,579

How many of you thij that we're eventually
going to find out that there's life somewhere

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01:41:25,579 --> 01:41:29,530

in the universe other than on earth?

I believe that.

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01:41:29,530 --> 01:41:34,639

And I mean, can you imagine one day if we actually figured that out.

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01:41:34,639 --> 01:41:39,849

One of the reasons we're on Mars because we found out there was water on Mars and

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01:41:39,849 --> 01:41:44,480

then it went away.

Maybe Mars had life at one point and maybe

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01:41:44,480 --> 01:41:48,920

it's going to have life again. Right maybe that's what's going to happen with earth.

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01:41:48,920 --> 01:41:55,380

That's why they call it Rover Curiosity because we're curious about all these things.

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01:41:55,380 --> 01:42:02,340

I just want to let you know that we are here to help you realize whatever dream that you

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01:42:02,340 --> 01:42:07,829

have.

I want to talk to people who might not be

978

01:42:07,829 --> 01:42:15,619

interested in this notion of stem.

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01:42:15,619 --> 01:42:18,480

It stands for science, technology, engineering, and math.

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01:42:18,480 --> 01:42:25,309

As you know, there are many science disciplines right technology is about how you do things.

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01:42:25,309 --> 01:42:29,039

Engineering, there's many disciplines, and in maths we have a lot of disciplines.

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01:42:29,039 --> 01:42:32,010

I want to let you know that it's not all about Stem.

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01:42:32,010 --> 01:42:36,809

For those of you who think those disciplines are uninteresting.

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01:42:36,809 --> 01:42:40,849

NASA hires about two or three hundred people every year.

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01:42:40,849 --> 01:42:47,429

Most of those jobs are not, quote, stem jobs. My message to you is if you're sitting out

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01:42:47,429 --> 01:42:53,510

there and thinking I'm not going to be able to do NASA because I'm not a stem person.

987

01:42:53,510 --> 01:43:00,300

Then I want you to think that again because we need accountants, we need writers, we need

988

01:43:00,300 --> 01:43:08,050

people who can speak, we need people who can do art, we need people who can buy things.

989

01:43:08,050 --> 01:43:10,210

There's a lot of different things that you could do.

990

01:43:10,210 --> 01:43:20,390

The question is what is going to be your part in our journey to Mars. I love astronauts.

991

01:43:20,390 --> 01:43:23,540

Some astronauts are some of my best friends
but you know what?

992

01:43:23,540 --> 01:43:27,599

They sit at the top of a pyramid of a lot
of people.

993

01:43:27,599 --> 01:43:33,310

There are so many people that it took to get
Mr.\hHernandez into space that if they didn't

994

01:43:33,310 --> 01:43:38,190

have if he didn't have those people he would
be sitting here still dreaming about going

995

01:43:38,190 --> 01:43:41,380

to space.
Yes, he's rn an unusual person and he did

996

01:43:41,380 --> 01:43:48,079

an unusual thing, but it takes thens of thousands
of people in oorder to enable that.

997

01:43:48,079 --> 01:43:53,410

So maybe you can be a part of the journey
as well.

998

01:43:53,410 --> 01:43:58,340

I want to tell you a brief story about, uh,
and I want some things up here to share with

999

01:43:58,340 --> 01:44:07,260

you.
I was recently in GUADALARA Mexico.

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01:44:07,260 --> 01:44:15,330

Called the international astronautical congress.
Maybe one day one of the students would be

1001

01:44:15,330 --> 01:44:21,310

able to go there and the first thing, so this is in a different country and even though

1002

01:44:21,310 --> 01:44:25,090

I've been to Mexico before I hadn't really been to this part of the country.

1003

01:44:25,090 --> 01:44:36,530

The very first things I noted was that you have to have a badge to get into this conference.

1004

01:44:36,530 --> 01:44:44,239

The first thing I noticed when I got our badge is I don't know if you can see it, but there's

1005

01:44:44,239 --> 01:44:52,780

this beautiful colored lanyard that was hand-made by somebody in Mexico for the thousands of

1006

01:44:52,780 --> 01:44:57,340

people that came.

And I just stared, I said that is just the

1007

01:44:57,340 --> 01:45:01,410

coolest thing.

And what it did for me is that it reminded

1008

01:45:01,410 --> 01:45:06,440

me in our humanity, there's people doing their part.

1009

01:45:06,440 --> 01:45:13,090

I don't know who made this lanyard for all the people but somebody put this together

1010

01:45:13,090 --> 01:45:19,610

and they were doing their part to help all of us who were at this congress feel special

1011

01:45:19,610 --> 01:45:26,780

I just thought this was really great.

And the other thing they had these backpacks.

1012

01:45:26,780 --> 01:45:32,199

Ordinarily you go to conferences you get a standard backpack that has these logos of

1013

01:45:32,199 --> 01:45:35,449

all the companies that donated money and things like that.

1014

01:45:35,449 --> 01:45:40,369

I thought this is just really cool.

Someone probably made that.

1015

01:45:40,369 --> 01:45:44,840

I went up and I said I would thriek have one of these backpacks.

1016

01:45:44,840 --> 01:45:50,449

They said these are gist for the students, not for the delegates.

1017

01:45:50,449 --> 01:45:57,280

I said I really want a backpack.

So just like Mr.\hHernandez says, perseverance

1018

01:45:57,280 --> 01:46:03,860

is really important.

I said I'm a student because I'm always learning,

1019

01:46:03,860 --> 01:46:08,000

nice try.

So I was standing in front of a group of student

1020

01:46:08,000 --> 01:46:16,190

and Id I want un one of these backpacks. You have something that I really want.

1021

01:46:16,190 --> 01:46:18,949

You have a backpack.

And I think I have something that you really

1022

01:46:18,949 --> 01:46:26,260

want, I have money.

So maybe we can work something out.

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01:46:26,260 --> 01:46:31,510

It turns out I actually had some cool NASA stuff.

1024

01:46:31,510 --> 01:46:37,580

So they really wanted some cool NASA stuff.

So I got a backpack.

1025

01:46:37,580 --> 01:46:39,699

So I have a question to any of the students out there.

1026

01:46:39,699 --> 01:46:46,159

By any chance did anybody have a birthday last Saturday, October\h1?

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01:46:46,159 --> 01:46:53,630

What about close?

When's your birthday, shout it out?

1028

01:46:53,630 --> 01:46:56,410

The what?

September\h30?

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01:46:56,410 --> 01:46:58,800

One day, all the.

All right.

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01:46:58,800 --> 01:47:05,449

Well, guess what, that's the day before October\h1, which is actually NASA's birthday, and so

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01:47:05,449 --> 01:47:11,590

NASA turned 58 years old last Saturday which means that you were born one day before NASA

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01:47:11,590 --> 01:47:15,429

so Congratulations.

When this is over you can have my backpack

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01:47:15,429 --> 01:47:30,150

from Mexico as my gift to you.

Let's talk about how you doo you get to NASA.

1034

01:47:30,150 --> 01:47:39,570

Intern.NASA.gov on the internet.

We mostly bring interns when you go to college

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01:47:39,570 --> 01:47:43,409

and graduate school.

Sometimes we do it for high school students.

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01:47:43,409 --> 01:47:49,460

But intern.NASA dot gov, that's how you can lurp about getting internships.

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01:47:49,460 --> 01:47:55,210

We also do fellowships and scholarships when you get up in age.

1038

01:47:55,210 --> 01:48:01,530

We do other programs and activities for those of you that might be interested in going to

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01:48:01,530 --> 01:48:08,639

an Hispanic serving institution.

Simply defined as any institution of higher

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01:48:08,639 --> 01:48:14,480

education that has 25% of people of Hispanic back grnd.

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01:48:14,480 --> 01:48:21,760

So NASA has special programs where we invest in those universities, uh, to support, uh,

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01:48:21,760 --> 01:48:30,139

that activity.

So I want to close by telling you that if

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01:48:30,139 --> 01:48:36,320

you are interested in anything that we are doing, we are here to help you do that.

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01:48:36,320 --> 01:48:42,860

You just need to ask the question, and ask people how can I accomplish this.

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01:48:42,860 --> 01:48:45,420

This somewhat I'm interested in and how can I accomplish this?

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01:48:45,420 --> 01:48:50,850

If they don't give you a good answer, come to somebody else.

1047

01:48:50,850 --> 01:48:55,630

Hurry up, I'm getting old, one day I'm going to leave.

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01:48:55,630 --> 01:49:00,590

That's why we need you because a lot of us are getting old at NASA. If you look at the

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01:49:00,590 --> 01:49:05,840

average age of NASA during the height of the Apollo program we were about 25 to 27.

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01:49:05,840 --> 01:49:11,989

Right now it's about 52.

So this bow wave of people that are flowing

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01:49:11,989 --> 01:49:17,420

through NASA and eventually we're all going to end up in rocking chairs and we need somebody

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01:49:17,420 --> 01:49:22,760

to build the rockets to get us to go to Mars. I'd actually like to see that before, what

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01:49:22,760 --> 01:49:26,440

did you say as you go to bed? I like that.

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01:49:26,440 --> 01:49:30,039

When you don't ever wake up. You know.

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01:49:30,039 --> 01:49:37,349

So, um,. We really are about trying to insure this

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01:49:37,349 --> 01:49:47,989

country, this world can include people from all walks of life to participate in this great

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01:49:47,989 --> 01:49:58,820

adventure we call space exploration. The question is what role are you going to

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01:49:58,820 --> 01:50:06,260

play you don't have to be an astro noted you don't have to be an engineer.

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01:50:06,260 --> 01:50:11,570

Back in the Apollo days if you were to walk the halls of NASA and ask the person who was

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01:50:11,570 --> 01:50:16,980

the janitor what his or her job was they would say ymple working to get a man to the moon

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01:50:16,980 --> 01:50:23,999

and bring him back safely.

That's what we're all about is a team on that.

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01:50:23,999 --> 01:50:30,840

I want to say a couple of things you've heard today that I've thought about a lot this notion

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01:50:30,840 --> 01:50:35,020

of working hard and what does that actually mean?

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01:50:35,020 --> 01:50:46,179

Sometimes what does it actually mean.

I would like to give you a suggestion.

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01:50:46,179 --> 01:50:51,260

I have a formula too.

Jose has formulas. We think in formulas at

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01:50:51,260 --> 01:50:54,719

NASA.

To me it really means what are the trade offs

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01:50:54,719 --> 01:51:00,150

you're willing to make in order for you to get the thing that you want.

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01:51:00,150 --> 01:51:06,309

Because every minute, every day, you are making choices. You chose to get up this morning,

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01:51:06,309 --> 01:51:09,690

you chose to go to school.

You chose to be here.

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01:51:09,690 --> 01:51:14,539

You may not think you had a choice, but you really did have a choice.

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01:51:14,539 --> 01:51:22,179

Sometimes you make choices and there's consequences for those choices so in many ways I think

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01:51:22,179 --> 01:51:27,019

when you talk about working hard, it's really about what what sacrifices you're willing

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01:51:27,019 --> 01:51:35,560

to make.

Somebody says we're having a pool party and

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01:51:35,560 --> 01:51:42,539

you're thinking I didn't quite get that last algebra problem, but that pool party sure

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01:51:42,539 --> 01:51:45,880

sounds really great.

Well, you have a choice.

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01:51:45,880 --> 01:51:50,090

Do you want to go to the pool party or do you want to work on your algebra?

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01:51:50,090 --> 01:51:54,719

It's up to you decide at any given moment what's really important for us\h■ ■\hfor

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01:51:54,719 --> 01:51:58,469

you.

I think in term of what sacrifices and trades

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01:51:58,469 --> 01:52:03,869

there are.

I'm really glad at the students that are here

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01:52:03,869 --> 01:52:11,230

and I hope that you really got a lot out of our speakers and I thank you for being here.

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01:52:11,230 --> 01:52:15,599

NASA is here we have a model we're with you when you learn.

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01:52:15,599 --> 01:52:22,550

Let us help you learn, and let us help you grow, and be a part of our agency.

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01:52:22,550 --> 01:52:37,360

Thank you very much.

>> Thank you, Mr.\hJames.

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01:52:37,360 --> 01:52:41,059

Hello, everyone, I'm the Hispanic outreach and leadership alliance coach here at NASA

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01:52:41,059 --> 01:52:45,780

headquarters and I want to thank everyone for participating today.

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01:52:45,780 --> 01:52:50,409

Hispanic community is a very diverse, growing, and proud community, and today we are very

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01:52:50,409 --> 01:52:54,750

proud of our two speakers, Diana and Jose for everything you've accomplished and for

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01:52:54,750 --> 01:53:01,559

representing our community so very well.

We would like to present you with some gifts

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01:53:01,559 --> 01:53:15,829

to express our gratitude today.

For Ms.\hDiana the plaque reads for your exceptional

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01:53:15,829 --> 01:53:21,619

contribution to the participation in the Hispanic outreach and leadership alliance, hola, celebration

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01:53:21,619 --> 01:53:29,340

of Hispanic heritage month at NASA headquarters,
October\h4.

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01:53:29,340 --> 01:53:48,829

Thank you so much.
And for Jose as well.

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01:53:48,829 --> 01:53:53,920

Same thing for your exceptional contribution
to and the participation in the Hispanic outreach

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01:53:53,920 --> 01:54:20,449

and leadership alliance celebration today.
>> The Hispanic community contributes to many

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01:54:20,449 --> 01:54:25,869

aspects of our daily lives and as you've learned
today our community has contributed greatly

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01:54:25,869 --> 01:54:31,829

to science exploration.
We are astronauts, doctors, program mission

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01:54:31,829 --> 01:54:38,510

leads, judges, attorneys, doctors, surgeons,
and we all contribute to this great nation

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01:54:38,510 --> 01:54:49,269

in a variety of different ways. The theme
of today was the ASPIRA with NASA and to reach

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01:54:49,269 --> 01:54:55,020

a little bit beyond NASA lks.
Today we're happy to have north western high

1100

01:54:55,020 --> 01:54:58,869

school and GRUNTSTON middle school here with
us today.

1101

01:54:58,869 --> 01:55:04,789

[APPLAUSE]

Make some noise.

1102

01:55:04,789 --> 01:55:07,719

Did you guys enjoy the program?

>> Yeah.

1103

01:55:07,719 --> 01:55:11,570

>> Are you ready to knock out them straight A's?

1104

01:55:11,570 --> 01:55:20,840

>> Yes all right, the enthusiasm.

Preparation meets opportunity.

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01:55:20,840 --> 01:55:27,260

It remind us that in order for you to achieve success you need to be prepared for those

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01:55:27,260 --> 01:55:31,420

opportunity that come your way.

And the way you can all start preparing right

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01:55:31,420 --> 01:55:36,570

now is by making sure you're working on all your class work, studying hard and, and making

1108

01:55:36,570 --> 01:55:40,889

sure you're taking your education seriously.

We encourage you and challenge you to make

1109

01:55:40,889 --> 01:55:52,829

sure you're doing all those thing.

Dream big, stay foik focused we'd like to

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01:55:52,829 --> 01:55:59,040

thank several of our administration staff.

Mr.\hBolden for hi support, KRISTA Paquin,

1111

01:55:59,040 --> 01:56:09,520

Donald James, Cindy OLIVARES, the graphics team, NASA TV, HQ audio■visual

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01:56:09,520 --> 01:56:16,659

team r the office of communications, and the hola leadership board and all of the volunteers

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01:56:16,659 --> 01:56:24,559

that help put this program together. So thank you so much for everyone today.

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01:56:24,559 --> 01:56:32,520

And on a personal side note you guys had a lot of tremendous questions.

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01:56:32,520 --> 01:56:38,000

I've been in internal with the agency since high school.

1116

01:56:38,000 --> 01:56:44,949

I went through college, finished college, and I encourage you to go out there, do that

1117

01:56:44,949 --> 01:56:51,120

research, get that GPA polished, keep it at least a 3, shoot for a 4, make sure you focus.