CELEBRATING

HISPANIC HERITAGE

AT NASA

NASA SCIENCE LIVE

VIRTUAL EDITION

1
00:00:08,007 --> 00:00:10,977
Welcome. Welcome to another virtual episode of NASA

2
00:00:11,044 --> 00:00:13,980
Science Live. In honor of National Hispanic Heritage

3
00:00:14,047 --> 00:00:16,983
Month, we want to reinforce our commitment to equal

4
00:00:17,050 --> 00:00:20,053
opportunity, diversity and inclusion.

5
00:00:20,987 --> 00:00:23,957
My name is Raquel Villanueva. My last name originates

6
00:00:24,023 --> 00:00:27,927
from a town's name in Spain. It was brought to La Paz Bolivia

7
00:00:27,994 --> 00:00:30,997
where part of my family still resides. At NASA,

8
00:00:31,064 --> 00:00:34,000
wesee diversity as a strength. We're bringing you an

9
00:00:34,067 --> 00:00:37,003
episode all about our Hispanic American employees

10
00:00:37,070 --> 00:00:40,006
and the valuable ideas and perspectives they

11
00:00:40,073 --> 00:00:43,009
bring to the agency. Like many of our employees,

12
00:00:43,076 --> 00:00:46,946
today's episode is bilingual. So be sure to toggle

13
00:00:47,013 --> 00:00:50,917

between English captions or Español. Today

14
00:00:50,984 --> 00:00:53,953
we celebrate many of the amazing NASA employees with Hispanic

15
00:00:54,020 --> 00:00:56,990
heritage and the diverse and varied roles

16
00:00:57,056 --> 00:00:58,057
everyone fills.

17
00:01:00,026 --> 00:01:02,061
Hello, hello, hello. Hello, everyone.

18
00:01:05,031 --> 00:01:07,934
Hi, my name is Dr. Bea
Gallardo-Lacourt Hi, my name is
Carmen Pulido

19
00:01:08,001 --> 00:01:12,305
and I’m originally from Tijuana, Mexico. Hello, my name is Andrés Andrade.

20
00:01:12,372 --> 00:01:16,943
Hi my name is Bettina Inclan NASA’s Associate Administrator for the Office of Communications. Hi, I'm Frank

21
00:01:17,010 --> 00:01:18,945
Rubio from Miami, Florida.

22
00:01:19,012 --> 00:01:22,949
My name is Ali Guarneros-Luna
Hi, how are you?

23
00:01:23,016 --> 00:01:26,953
My name is Ashley Curiel and I’m from Guadalajara, Mexico.

24
00:01:27,020 --> 00:01:29,956
Mexico. Originally from Mexico City, but I Live now in Queens,

25

00:01:30,023 --> 00:01:32,992
New York. I am a proud American. First

26
00:01:33,059 --> 00:01:34,961
generation of Cuban and

27
00:01:35,028 --> 00:01:37,997
Mexican parents. I was born in Mexico, but I'm currently

28
00:01:38,064 --> 00:01:44,971
residing in Los Angeles,
California. Hi! My name is
Jessica Rola and I am a proud,
bilingual Mexican.

29
00:01:45,038 --> 00:01:47,941
I’m an aerospace engineer here at NASA Ames.

30
00:01:48,007 --> 00:01:50,977
I am a systems engineer at NASA's Jet Propulsion Laboratory

31
00:01:51,044 --> 00:01:55,982
in Pasadena. My job is to study
the solar system

32
00:01:56,049 --> 00:01:58,985
As a Thermal Engineer doing thermal analysis and design especially

33
00:01:59,052 --> 00:02:05,024
with cryogenic systems. I'm Clinical Psychologist

34
00:02:05,091 --> 00:02:08,928
at the Johnson Space Center medical clinic,
32
and I work with all our former astronauts. I'm a Public Affairs

35
00:02:08,995 --> 00:02:11,998
Officer at NASA's Armstrong Flight Research Center in Southern California.

36

00:02:12,065 --> 00:02:15,001
I am a Business Manager. At JPL, I'm a

37
00:02:15,068 --> 00:02:18,972
Mechanical Engineer and I support electromagnetic compatibility

38
00:02:19,038 --> 00:02:21,975
testing on spacecraft and instruments. I work for NASA's

39
00:02:22,041 --> 00:02:24,978
office of STEM engagement at The Goddard Institute for Space

40
00:02:25,044 --> 00:02:28,081
Studies. So, I work closely with students and with teachers

41
00:02:28,982 --> 00:02:31,985
I develop technology for the missions to the Moon and Mars

42
00:02:32,051 --> 00:02:34,954
and I am currently working with the Mars navigation team,

43
00:02:35,021 --> 00:02:37,957
The Mars 2020 team that is in charge of

44
00:02:38,024 --> 00:02:40,994
figuring out where the spacecraft is in space at all times

45
00:02:41,060 --> 00:02:43,997
and to tell it how to get to Mars. And I have been working at Goddard

46
00:02:44,063 --> 00:02:47,934
for one year in magnetosphere ionospheric cappings specifically

47
00:02:48,001 --> 00:02:50,937
the Aurora. And I became a NASA astronaut after a 20-year

48
00:02:51,004 --> 00:02:53,973
career in the US Army, eight years flying blackhawk helicopters,

49
00:02:54,040 --> 00:02:57,076
and twelve years as a Family Medicine Physician. My NASA journey

50
00:02:57,977 --> 00:03:00,947
began soon after I had just started my classes towards my Masters

51
00:03:01,014 --> 00:03:03,950
in Education. I remember I got the opportunity to interview at JPL

52
00:03:04,017 --> 00:03:04,951
after many months

53
00:03:05,018 --> 00:03:07,954
of not giving up and now

54
00:03:08,021 --> 00:03:10,957
I'm a lead engineer and representing NASA. And while I was still

55
00:03:11,024 --> 00:03:13,960
completing my Master's, I came back for a second internship

56
00:03:14,027 --> 00:03:16,963
which eventually led to a full-time position. Working here I

57
00:03:17,030 --> 00:03:20,967
realized that NASA also hires lawyers, custodians

58
00:03:21,034 --> 00:03:23,937
and even social media managers, so it's not

59
00:03:24,003 --> 00:03:26,973
all just pilots and engineers around here. Very proud of my culture

60
00:03:27,040 --> 00:03:30,076
and my Heritage. I'm very proud to be part of the NASA family.

61

00:03:30,977 --> 00:03:34,080
Thank you for taking the time to celebrate our rich culture. Thank you. See you soon.

62
00:03:37,984 --> 00:03:40,954
I love seeing the wide range of roles Hispanic Americans

63
00:03:41,020 --> 00:03:43,957
have at NASA. Be sure to stay tuned at the end of

64
00:03:44,023 --> 00:03:46,993
our show to find out how you can ask questions one-on-one

65
00:03:47,060 --> 00:03:50,930
with our NASA experts. We're now joined by Sabrina

66
00:03:50,997 --> 00:03:54,000
Delgado Arias, an Applications Coordinator

67
00:03:54,067 --> 00:03:57,937
at NASA's Goddard Space Flight Center. Welcome,

68
00:03:58,004 --> 00:04:01,007
Thank you very much.

69
00:04:01,074 --> 00:04:04,944
So Sabrina, I hear that you are researching some exciting topics.

70
00:04:05,011 --> 00:04:07,914
Can you share more about your work?

71
00:04:07,981 --> 00:04:10,917
Yes, well my work in a nutshell is to be

72
00:04:10,984 --> 00:04:13,953
able to understand how people use ICESAT-2

73
00:04:14,020 --> 00:04:16,990
data. This is the mission that I work primarily

74
00:04:17,056 --> 00:04:19,993
with. It was launched in 2018

75
00:04:20,059 --> 00:04:22,996
and it provides us with the 3D profile of our

76
00:04:23,062 --> 00:04:25,999
Earth using height measurements. We have a

77
00:04:26,065 --> 00:04:29,002
number of people that have expressed interest in the

78
00:04:29,068 --> 00:04:32,939
ICESAT-2 data. ICESAT-2 provides us with

79
00:04:33,006 --> 00:04:36,976
measurements of sea ice, of vegetation height,

80
00:04:37,043 --> 00:04:39,979
of Inland water data, and so

81
00:04:40,046 --> 00:04:43,916
I try to create awareness of what

82
00:04:43,983 --> 00:04:46,953
this data products are, or this data is and

83
00:04:47,020 --> 00:04:49,989
understand how people can inform practical

84
00:04:50,056 --> 00:04:52,992
applications. So, for example, we have a

85
00:04:53,059 --> 00:04:57,964
researcher in Brazil who is looking at

86

00:04:58,031 --> 00:05:01,000
how to use the Inland water data product to look

87
00:05:01,067 --> 00:05:04,937
at surface water from space over the Amazon basin.

88
00:05:05,004 --> 00:05:06,939
There are a lot of floods and droughts

89
00:05:07,006 --> 00:05:09,976
that have impacted the local population. And so

90
00:05:10,043 --> 00:05:13,980
this information is very much needed and

91
00:05:14,047 --> 00:05:16,983
we have other people that are looking at for example, the vegetation

92
00:05:17,050 --> 00:05:20,920
data products from ICESAT-2 here in the United States

93
00:05:20,987 --> 00:05:23,956
to look at changes in sage-grouse

94
00:05:24,023 --> 00:05:26,993
ecosystems or looking at changes

95
00:05:27,060 --> 00:05:30,997
in in dry-land ecosystems to inform

96
00:05:31,064 --> 00:05:34,000
changes to bird habitats. So

97
00:05:34,067 --> 00:05:36,969
these are just a couple of examples

98
00:05:37,036 --> 00:05:40,940
that is basically what I do. That

99
00:05:41,007 --> 00:05:43,976
is fascinating work. Can you tell us a little bit about

100
00:05:44,043 --> 00:05:47,947
the path that led you to your career at NASA? Yeah,

101
00:05:48,014 --> 00:05:50,983
well, I never expect it to work at NASA. First of all,

102
00:05:51,050 --> 00:05:54,921
I always thought about astronauts and outer space, but never really

103
00:05:54,987 --> 00:05:57,924
the Earth. We came here with my family

104
00:05:57,990 --> 00:06:00,960
in the late 1980s. My dad was a

105
00:06:01,027 --> 00:06:04,964
Telecommunications Engineer and he was part

106
00:06:05,031 --> 00:06:06,966
of the development team

107
00:06:07,033 --> 00:06:09,969
for what would have been the first space

108
00:06:10,036 --> 00:06:13,005
foreign telecommunication satellite in Colombia.

109
00:06:13,072 --> 00:06:16,008
And so, he really inspired in me that curiosity for Science

110
00:06:16,075 --> 00:06:19,946
and Technology. I think the same for my mom.

111

00:06:20,012 --> 00:06:22,982
She has always been very actively involved

112
00:06:23,049 --> 00:06:26,986
in our community through her volunteer work. And so she

113
00:06:27,053 --> 00:06:30,022
really has made me appreciate that love for serving

114
00:06:30,089 --> 00:06:33,960
others. I am very much a people person and

115
00:06:34,026 --> 00:06:36,963
I love to connect people and

116
00:06:37,029 --> 00:06:39,966
connect with people and this is a big part of what

117
00:06:40,032 --> 00:06:43,002
I do at Goddard. I studied

118
00:06:43,069 --> 00:06:46,973
agriculture and natural resources economics and

119
00:06:47,039 --> 00:06:50,943
Science and Technology policy. So I

120
00:06:51,010 --> 00:06:53,946
guess you could say it's an unexpected way to get to

121
00:06:54,013 --> 00:06:56,983
NASA. Like you just said it was an unexpected

122
00:06:57,049 --> 00:07:00,019
way, but for people following a similar career

123
00:07:00,086 --> 00:07:03,956
path, what would you like them to know?

124
00:07:04,023 --> 00:07:07,994
That there are a diverse number

125
00:07:08,060 --> 00:07:10,997
of professions that you can find at Goddard. I

126
00:07:11,063 --> 00:07:14,934
think this is one of the things that most impacted me when I started working

127
00:07:15,001 --> 00:07:17,937
there. You have Astrophysicists. You have

128
00:07:18,004 --> 00:07:21,941
Astronauts. You have all the way to educational

129
00:07:22,008 --> 00:07:24,944
and outreach experts. So, I would say

130
00:07:25,011 --> 00:07:27,947
there's an opportunity for all and I would

131
00:07:28,014 --> 00:07:30,983
encourage everyone to just love yourself

132
00:07:31,050 --> 00:07:33,953
and have this reflect in what you do

133
00:07:34,020 --> 00:07:36,956
so that this energy opens up the doors for you. It's

134
00:07:37,023 --> 00:07:40,960
a great answer. Thank you, Sabrina. Thank you very much.

135
00:07:41,027 --> 00:07:43,996
With hard work and dedication anything is possible

136

00:07:44,063 --> 00:07:46,999
and for Diana Trujillol, an aerospace engineer

137
00:07:47,066 --> 00:07:50,002
at NASA's Jet Propulsion Laboratory, these words

138
00:07:50,069 --> 00:07:53,940
are a true testament to her story. Diana

139
00:07:54,006 --> 00:07:56,976
moved from Colombia to the U.S. overcoming adversity

140
00:07:57,043 --> 00:08:00,012
and is now working on her second spacecraft

141
00:08:00,079 --> 00:08:02,882
sent to Mars. Let's take a look.

142
00:08:02,949 --> 00:08:07,520
It never occurred to me in my life that I could move from cleaning houses to arriving

143
00:08:07,587 --> 00:08:10,156
to this situation working with Mars 2020.

144
00:08:10,223 --> 00:08:11,257
My name is Diana Trujillo

145
00:08:11,324 --> 00:08:13,793
and I work with robotic arms to collect materials

146
00:08:13,860 --> 00:08:18,865
on the surface of the planet Mars in order to understand and answer the question,

147
00:08:18,931 --> 00:08:23,336
"Was there ever life on the surface of Mars?" That is one of the most

148
00:08:23,402 --> 00:08:26,939
fundamental questions that human beings have had for many years. We are in the

149
00:08:27,006 --> 00:08:30,543
laboratory where we do all of the tests on the robotic arm.

150
00:08:30,610 --> 00:08:34,347
The robotic arms for these missions are very important because we do not have a

151
00:08:34,413 --> 00:08:37,250
geologist who can walk on the surface. So, what

152
00:08:37,316 --> 00:08:41,287
we have to do is carry several instruments that we can lift up

153
00:08:41,354 --> 00:08:45,324
from the surface and that's when we need a robotic arm that can

154
00:08:45,391 --> 00:08:49,595
put the instruments down on the surface. We are standing in an area where

155
00:08:49,662 --> 00:08:53,399
we simulate the surface of Mars and the intention is to show that we can

156
00:08:53,466 --> 00:08:58,237
drive in different conditions with the robot. When I start to think about how

157
00:08:58,304 --> 00:09:01,841
It was that I got to where I am, it'se something that I can't believe. When I was in

158
00:09:01,908 --> 00:09:06,379
Colombia unfortunately there was a lot of violence and looking at the stars was something

159
00:09:06,445 --> 00:09:10,349
that could help calm me down. I came here to the United States

160
00:09:10,416 --> 00:09:15,655
when I was 17, I learned English when I got here. I come to work as one

161

00:09:15,721 --> 00:09:20,559
Hispanic woman representing many people who haven’t thought they can

162
00:09:20,626 --> 00:09:23,930
be part of this, but they can be at some point. Then I feel

163
00:09:23,996 --> 00:09:28,534
extremely happy to know that I have the opportunity to be part of a group that

164
00:09:28,601 --> 00:09:32,972
can change history.

165
00:09:33,039 --> 00:09:36,008
It takes a huge team of diverse individuals with an array

166
00:09:36,075 --> 00:09:39,912
of talents and skills to get many of our NASA missions

167
00:09:39,979 --> 00:09:42,949
off the ground. From mission start to finish, our Hispanic

168
00:09:43,015 --> 00:09:45,985
American employees have been trailblazers in the many

169
00:09:46,052 --> 00:09:49,956
roles they fill to explore the Earth and beyond. Today,

170
00:09:50,022 --> 00:09:52,992
we are joined by Lucas Paganini, a program scientist

171
00:09:53,059 --> 00:09:56,028
at NASA Headquarters. Glad you could join us today.

172
00:09:56,095 --> 00:10:01,934
Hello Lucas. Hello, thank you very much for the invitation. You’re welcome.

173
00:10:02,001 --> 00:10:02,935
So can you tell us a little

174
00:10:03,002 --> 00:10:05,972
bit about what you do as a program scientist.

175
00:10:06,038 --> 00:10:11,944
Sure, unlike a traditional scientist

176
00:10:12,011 --> 00:10:14,947
who specializes in a given scientific

177
00:10:15,014 --> 00:10:17,984
field, a program scientist at NASA Headquarters

178
00:10:18,050 --> 00:10:21,954
oversee the broad science content and execution

179
00:10:22,021 --> 00:10:24,991
of space mission and research programs. I

180
00:10:25,057 --> 00:10:27,994
work in the Planetary Science Division, which

181
00:10:28,060 --> 00:10:31,931
deals with the study of the solar system,

182
00:10:31,998 --> 00:10:35,935
except our planet and the Sun.

183
00:10:36,002 --> 00:10:38,938
And can you tell us who your most memorable project

184
00:10:39,005 --> 00:10:42,008
that you've worked on?

185
00:10:42,074 --> 00:10:45,978
Well, when I used to be a traditional scientist,

186

00:10:46,045 --> 00:10:49,015
my group discovered water vapor on

187
00:10:49,081 --> 00:10:52,952
one of Jupiter's moon called

188
00:10:53,019 --> 00:10:55,955
Europa. Europa is a moon slightly

189
00:10:56,022 --> 00:10:58,991
smaller than our own Moon and we believe

190
00:10:59,058 --> 00:11:01,994
it might have a liquid water ocean under

191
00:11:02,061 --> 00:11:04,997
its surface with twice as much water as

192
00:11:05,064 --> 00:11:08,968
all of Earth's oceans combined. Now,

193
00:11:09,035 --> 00:11:11,971
this has huge implications for our search

194
00:11:12,038 --> 00:11:15,007
for life beyond Earth and

195
00:11:15,074 --> 00:11:18,978
this is why NASA is working on a space mission

196
00:11:19,045 --> 00:11:22,915
called Europa Clipper that will go to Europa

197
00:11:22,982 --> 00:11:25,918
in 10 years and will gather details of the

198
00:11:25,985 --> 00:11:28,954
moon with unprecedented details at this

199
00:11:29,021 --> 00:11:32,925
distances never been achieved before.

200
00:11:32,992 --> 00:11:35,928
That's amazing. Let's take it back to

201
00:11:35,995 --> 00:11:38,931
your childhood. And can you tell me your earliest

202
00:11:38,998 --> 00:11:41,934
memory that made you want to pursue a profession in space

203
00:11:42,001 --> 00:11:44,003
exploration?

204
00:11:44,070 --> 00:11:47,940
Yes, of course since I was a child,

205
00:11:48,007 --> 00:11:50,976
I always wanted to be an astronaut and a pilot,

206
00:11:51,043 --> 00:11:54,013
you know, like so many kids I

207
00:11:54,080 --> 00:11:57,917
grew up seeing astronauts during the space

208
00:11:57,983 --> 00:12:00,953
shuttle era, building the International Space

209
00:12:01,020 --> 00:12:04,957
Station and servicing of the Hubble Space Telescope,

210
00:12:05,024 --> 00:12:07,960
but when I had to choose a career, space

211

00:12:08,027 --> 00:12:11,964
exploration was not available in my city. So,

212
00:12:12,031 --> 00:12:13,999
you know, it was only later on that

213
00:12:14,066 --> 00:12:18,938
the study of space found me. And

214
00:12:19,004 --> 00:12:22,007
this is actually a subject I want to get your take on Lucas, according

215
00:12:22,074 --> 00:12:25,911
to the National Science Foundation, Hispanic Americans accounted

216
00:12:25,978 --> 00:12:28,948
for six percent of the workforce in science and engineering.

217
00:12:29,014 --> 00:12:31,951
Can you explain the importance of having representation

218
00:12:32,017 --> 00:12:34,987
in this field and what we can do in order to have

219
00:12:35,054 --> 00:12:38,924
better representation in STEM?

220
00:12:38,991 --> 00:12:41,994
Yeah, this is very important. Science

221
00:12:42,061 --> 00:12:45,965
and engineering is the future and

222
00:12:46,031 --> 00:12:49,935
for any community to thrive they must be part of this

223
00:12:50,002 --> 00:12:52,938
wave. I think it's our duty as role

224
00:12:53,005 --> 00:12:56,942
models to motivate kids and young scientists

225
00:12:57,009 --> 00:12:59,945
to consider these careers. You

226
00:13:00,012 --> 00:13:02,948
know, our community is the largest minority

227
00:13:03,015 --> 00:13:06,919
group in the United States accounting for 20%

228
00:13:06,986 --> 00:13:08,921
of the total population. So

229
00:13:08,988 --> 00:13:11,991
definitely 6% is rather low,

230
00:13:12,057 --> 00:13:14,994
but you know, unfortunately only 20% of our

231
00:13:15,060 --> 00:13:18,964
community has college degrees. So, there

232
00:13:19,031 --> 00:13:21,967
is a long way to go but

233
00:13:22,034 --> 00:13:24,970
on the bright side the amount of Latin or

234
00:13:25,037 --> 00:13:28,941
Hispanic people with college degrees has tripled

235
00:13:29,008 --> 00:13:31,977
over the past 15 years. So, this is

236

00:13:32,044 --> 00:13:34,980
the highest increase for all groups, which

237
00:13:35,047 --> 00:13:38,017
is really encouraging, you know,

238
00:13:38,083 --> 00:13:41,987
I think the message is: Education is essential

239
00:13:42,054 --> 00:13:44,990
and it's what gave me the opportunity to come

240
00:13:45,057 --> 00:13:47,993
to NASA. Now, at NASA we are

241
00:13:48,060 --> 00:13:50,996
committed to a culture of diversity, inclusion

242
00:13:51,063 --> 00:13:53,999
and equality and we hope to see more

243
00:13:54,066 --> 00:13:57,937
young people from all backgrounds join

244
00:13:58,003 --> 00:14:00,940
us in the near future. So, you know keep

245
00:14:01,006 --> 00:14:03,976
studying, work hard. Everything is

246
00:14:04,043 --> 00:14:05,010
possible.

247
00:14:05,077 --> 00:14:12,952
Yes, we can. Thank you so much for joining us today, Lucas.
It was a pleasure, thank you very much for the invitation.

248
00:14:13,018 --> 00:14:13,986

After a

249
00:14:14,053 --> 00:14:16,021
mission is in its working stages. Can you guess what comes

250
00:14:16,088 --> 00:14:19,992
next? That's right the stage where logic and creativity

251
00:14:20,059 --> 00:14:23,028
meet to build spacecraft instruments and the complex

252
00:14:23,095 --> 00:14:26,999
advanced technologies needed to conduct NASA missions

253
00:14:27,066 --> 00:14:30,002
like the Perseverance rover, which is currently on its way to

254
00:14:30,069 --> 00:14:33,005
Mars. This rover is the first step to a

255
00:14:33,072 --> 00:14:34,974
round-trip mission that will

256
00:14:35,040 --> 00:14:37,977
collect and cache Martian samples for a future

257
00:14:38,043 --> 00:14:41,013
mission, which will retrieve those samples and bring them

258
00:14:41,080 --> 00:14:44,950
back to Earth. Today, we’re joined by Dr. Yajaira Sierra-Sastre,

259
00:14:45,017 --> 00:14:47,987
a project manager at NASA's

260
00:14:48,053 --> 00:14:51,991
Glenn Research Center. Welcome, Yajaira.

261
00:14:52,057 --> 00:14:54,994
Thank you very much. Thank you. And how did growing

262
00:14:55,060 --> 00:14:59,932
up in Puerto Rico foster your passion for space?

263
00:14:59,999 --> 00:15:02,968
Yes, I was born and raised in Puerto Rico. I come from a very small town called Arroyo.

264
00:15:03,035 --> 00:15:05,938
and I have really great memories

265
00:15:06,005 --> 00:15:09,008
about the nights spent staring at the black sky

266
00:15:09,074 --> 00:15:12,945
and the stars, you know in the middle of the night.

267
00:15:13,012 --> 00:15:15,981
I also have really good memories growing up and

268
00:15:16,048 --> 00:15:18,984
doing science fair projects, investigating the trims that I could

269
00:15:19,051 --> 00:15:22,921
see in the mouth of the river that crossed town. So

270
00:15:22,988 --> 00:15:25,958
Arroyo was my playground. It was that place that instilled in

271
00:15:26,025 --> 00:15:28,994
me that passion for science. Beautiful mountains

272
00:15:29,061 --> 00:15:29,094
and a

273
00:15:29,094 --> 00:15:32,965

beautiful ocean that really sparked in me that curiosity

274
00:15:33,032 --> 00:15:35,000
to explore the universe.

275
00:15:35,067 --> 00:15:38,003
So, you said your path to NASA took a

276
00:15:38,070 --> 00:15:42,007
few different turns. Can you tell us a little bit more about that?

277
00:15:42,074 --> 00:15:45,978
That's correct. So, prior to my job at NASA

278
00:15:46,045 --> 00:15:48,981
I had to reinvent myself many times

279
00:15:49,048 --> 00:15:52,951
over the course of my career. I am a material scientist by training

280
00:15:53,018 --> 00:15:56,922
but before becoming a scientist, I was a high school teacher

281
00:15:56,989 --> 00:15:59,925
and I taught for one year Chemistry at my former

282
00:15:59,992 --> 00:16:02,995
high school. After that, I continued doing

283
00:16:03,062 --> 00:16:04,997
research internships because I wanted to

284
00:16:05,064 --> 00:16:08,000
become a scientist and finally finished my

285
00:16:08,067 --> 00:16:11,937
PhD in Material Science, but after that after

286
00:16:12,004 --> 00:16:14,940
graduation, I work as a scientist for different

287
00:16:15,007 --> 00:16:17,943
startup companies also worked for the Federal

288
00:16:18,010 --> 00:16:20,979
Government in a different agency in a completely different

289
00:16:21,046 --> 00:16:23,982
technology area the for security feature

290
00:16:24,049 --> 00:16:26,985
applications. And now I am at NASA finally

291
00:16:27,052 --> 00:16:29,988
at NASA fulfilling my dream, space

292
00:16:30,055 --> 00:16:33,959
dream because space has been always a passion. Now

293
00:16:34,026 --> 00:16:34,993
you are leading

294
00:16:35,060 --> 00:16:38,931
an effort of building one of the Mars spring tires

295
00:16:38,997 --> 00:16:41,934
that will one day be used for NASA's first ever Mars

296
00:16:42,000 --> 00:16:44,937
Sample Return in 2026. Can you tell us more

297
00:16:45,003 --> 00:16:47,973
about the tires? Yes. So, I am the project

298
00:16:48,040 --> 00:16:50,976

manager for the Mars spring tire team. This is a team

299
00:16:51,043 --> 00:16:53,979
responsible for the design, build and testing of

300
00:16:54,046 --> 00:16:56,982
the shape memory alloy tires that will be

301
00:16:57,049 --> 00:16:59,985
in the future rover that we'll be sending

302
00:17:00,052 --> 00:17:03,021
to Mars. These tires are made of shapeshifting

303
00:17:03,088 --> 00:17:04,990
materials. Materials that can

304
00:17:05,057 --> 00:17:08,026
conform to rocky terrains and materials and tires

305
00:17:08,093 --> 00:17:10,996
that will be very durable and that will

306
00:17:11,063 --> 00:17:14,933
be able to just traverse those

307
00:17:15,000 --> 00:17:17,936
long distances to pick up the samples that the

308
00:17:18,003 --> 00:17:21,940
Perseverance rover will be collecting on the surface of Mars.

309
00:17:22,007 --> 00:17:24,943
Yajaira what advice do you have for other Hispanic Americans

310
00:17:25,010 --> 00:17:28,914
who want to pursue a career path like yours?

311
00:17:28,981 --> 00:17:31,950
I would like to advise other Hispanics to really consider

312
00:17:32,017 --> 00:17:34,987
a career in science. My career has been filled of many wonderful

313
00:17:35,053 --> 00:17:37,990
adventures from being a research scientist to joining

314
00:17:38,056 --> 00:17:40,993
a simulated Mars mission to now working at

315
00:17:41,059 --> 00:17:44,930
NASA in technologies that we will be sending to Mars.

316
00:17:44,997 --> 00:17:48,000
So, Science and Technology are filled

317
00:17:48,066 --> 00:17:51,937
with many many many awesome opportunities. I

318
00:17:52,004 --> 00:17:54,973
also like to tell other Hispanics like me

319
00:17:55,040 --> 00:17:57,976
to reach out to scientists and engineers. Ask questions

320
00:17:58,043 --> 00:18:01,013
about career paths because they can learn a lot about

321
00:18:01,079 --> 00:18:04,950
which career path they feel passionate

322
00:18:05,017 --> 00:18:07,986
about and most importantly I would like to tell

323
00:18:08,053 --> 00:18:10,956

Hispanics to leverage their biculturalism. We are

324
00:18:11,023 --> 00:18:13,992
people that are experienced at

325
00:18:14,059 --> 00:18:17,930
engaging with different types of people, diverse people

326
00:18:17,996 --> 00:18:20,933
from diverse cultures and backgrounds so leverage

327
00:18:20,999 --> 00:18:24,002
that in your workplaces, in your future career,

328
00:18:24,069 --> 00:18:27,940
to get innovative to to make

329
00:18:28,006 --> 00:18:28,073
our work

330
00:18:28,073 --> 00:18:34,947
places better places. Fantastic advice, Yajaira. Thank you for your time.

331
00:18:35,013 --> 00:18:37,983
Thank you very much. Now, there are so many people dedicated

332
00:18:38,050 --> 00:18:41,954
to working on new technologies that will help explore beyond

333
00:18:42,020 --> 00:18:44,957
Earth's horizon. Let's meet Dionne Hernandez-Lugo

334
00:18:45,023 --> 00:18:47,960
a project manager for Kilopower at NASA's

335
00:18:48,026 --> 00:18:50,963
Glenn Research Center who is working to create power

336
00:18:51,029 --> 00:18:53,999
systems for future astronauts to live and

337
00:18:54,066 --> 00:18:56,935
work on the Moon or Mars.

338
00:18:57,002 --> 00:19:04,510
If we are going to go to the
Moon or Mars we are going to
need nuclear energy. My name
is Dr. Dionne Hernández Lugo

339
00:19:04,576 --> 00:19:12,651
and I manage a group of
engineers developing
electrical systems for future
space exploration.

340
00:19:12,718 --> 00:19:18,657
Kilopower is a nuclear
system. The system consists
of using uranium.

341
00:19:18,724 --> 00:19:27,132
Uranium is heated and this heat
is then transferred to
electricity in order to not
only power

342
00:19:27,199 --> 00:19:33,305
instruments but also
give astronauts the ability to survive.

343
00:19:33,372 --> 00:19:39,978
Growing up in Puerto Rico, I
always asked a lot of
questions and asked my mom a
lot of things. She bought me a

344
00:19:40,045 --> 00:19:43,782
microscope and with this

microscope I could
collect different samples

345
00:19:43,849 --> 00:19:50,222
and be able to analyze them.
This is actually what made
me more interested in
science.

346
00:19:50,289 --> 00:19:57,029
Now here at NASA we can
explore and continue to
explore space.

347
00:19:57,095 --> 00:20:00,933
The excitement behind NASA's missions wouldn't be possible without

348
00:20:00,999 --> 00:20:03,969
viewers like you. Engaging, educating

349
00:20:04,036 --> 00:20:06,972
and reaching out to the public is an important part of NASA's

350
00:20:07,039 --> 00:20:10,008
mission. Besides, what's the point of doing awesome

351
00:20:10,075 --> 00:20:13,946
science in space if you have no one to share it with?

352
00:20:14,012 --> 00:20:16,982
Let's welcome other Adriana Manrique, a multimedia

353
00:20:17,049 --> 00:20:19,985
specialist and animator at the Conceptual Image

354
00:20:20,052 --> 00:20:25,958
Lab at NASA's Goddard Space Flight Center. Thank you for being with us.

355
00:20:26,024 --> 00:20:28,026

Thank you, Raquel. It’s a pleasure to be here.

356
00:20:28,093 --> 00:20:31,964
Adriana, you came to the United States to pursue your passion.

357
00:20:32,030 --> 00:20:34,967
Can you tell us some more about your journey? Sure. I

358
00:20:35,033 --> 00:20:37,970
came to the U.S. when I was 19 years old. I

359
00:20:38,036 --> 00:20:41,006
used to live in Tampico, Tamaulipas, Mexico and initially

360
00:20:41,073 --> 00:20:44,943
I came up here to study illustration and animation

361
00:20:45,010 --> 00:20:48,947
at the Savannah College of Art and Design. And

362
00:20:49,014 --> 00:20:51,950
can you tell us more about how you got into your role at Goddard’s Image

363
00:20:52,017 --> 00:20:54,953
Lab? Sure, during my last

364
00:20:55,020 --> 00:20:55,954
year of my master's

365
00:20:56,021 --> 00:20:58,991
the mission ICESAT-2 came down

366
00:20:59,057 --> 00:21:02,928
to the college and actually requested a group of students

367
00:21:02,995 --> 00:21:05,964
to create a series of multimedia

368
00:21:06,031 --> 00:21:09,001
products and those were animations, illustrations,

369
00:21:09,067 --> 00:21:12,938
posters and they're still being used today. It's

370
00:21:13,005 --> 00:21:15,941
amazing. Now. What is your role at Goddard’s

371
00:21:16,008 --> 00:21:17,943
Image Lab today?

372
00:21:18,010 --> 00:21:20,946
Right now, I am a Multimedia Specialist

373
00:21:21,013 --> 00:21:24,016
animator and I create 2D and 3D animations

374
00:21:24,082 --> 00:21:27,919
for several missions. Most of

375
00:21:27,986 --> 00:21:30,922
them that go through Goddard. As well,

376
00:21:30,989 --> 00:21:33,925
I also create illustrations, other

377
00:21:33,992 --> 00:21:36,928
graphic design products. And

378
00:21:36,995 --> 00:21:39,965
can you tell me what is one of your favorite projects that you've worked

379
00:21:40,032 --> 00:21:42,968
on? Sure, my favorite project

380
00:21:43,035 --> 00:21:45,971

was with ICESAT-2 and it was the 88

381
00:21:46,038 --> 00:21:47,939
Traverse video. Now what the

382
00:21:48,006 --> 00:21:50,976
88 Traverse is, is a trip

383
00:21:51,043 --> 00:21:53,979
that two scientists from the mission

384
00:21:54,046 --> 00:21:56,982
do every year down to the 88 South Line

385
00:21:57,049 --> 00:21:59,985
in Antarctica. And what they do is they

386
00:22:00,052 --> 00:22:02,988
Set up reflectors that will help calibrate the

387
00:22:03,055 --> 00:22:06,925
satellite in space. When talking to the scientist

388
00:22:06,992 --> 00:22:09,961
one of them mentioned that it's been,

389
00:22:10,028 --> 00:22:12,998
it's the first time that people have walked that exact

390
00:22:13,065 --> 00:22:16,001
traverse. So, the producer and I were like,

391
00:22:16,068 --> 00:22:17,936
this is amazing. It's like we need

392
00:22:18,003 --> 00:22:21,973
to put that sense of adventure, like the old

393
00:22:22,040 --> 00:22:24,976
explorers' type of thing and we just thought it was

394
00:22:25,043 --> 00:22:28,013
amazing because it's like boots on the ground doing this amazing stuff

395
00:22:28,080 --> 00:22:32,918
and it's actually to help a satellite up in space. Now

396
00:22:32,984 --> 00:22:35,987
what many people think of when you work at NASA is to be a scientist

397
00:22:36,054 --> 00:22:39,958
or engineer, but you are doing very cool work as an animator.

398
00:22:40,025 --> 00:22:42,961
What made you want to pursue a career in animation at

399
00:22:43,028 --> 00:22:44,029
NASA?

400
00:22:44,096 --> 00:22:47,933
Sure. The reason that I just love

401
00:22:47,999 --> 00:22:50,936
being here is because every single project

402
00:22:51,002 --> 00:22:53,939
it's a new challenge is something that I never thought

403
00:22:54,005 --> 00:22:56,975
I would have to learn about like heliophysics,

404
00:22:57,042 --> 00:22:59,978
lasers, astrophysics and all these kind

405
00:23:00,045 --> 00:23:02,981

of things that are just super specialized and just

406
00:23:03,048 --> 00:23:06,918
the people that I work with they’re amazing.

407
00:23:06,985 --> 00:23:13,925
So, every day, it's just a great great day.

408
00:23:13,992 --> 00:23:16,928
Thank you for being with us today Adriana. Thank you very much for having me.

409
00:23:16,995 --> 00:23:19,931
As you can see there are

410
00:23:19,998 --> 00:23:22,934
many fields that can lead to a career at NASA and

411
00:23:23,001 --> 00:23:26,004
you don't have to be a scientist or engineer to join the team. From

412
00:23:26,071 --> 00:23:29,007
lawyers and legislative roles to communication, social

413
00:23:29,074 --> 00:23:32,944
media and video, there's a place at NASA for a diverse

414
00:23:33,011 --> 00:23:35,947
range of careers and all are essential to

415
00:23:36,014 --> 00:23:38,950
the agency's mission and goals. I am joined

416
00:23:39,017 --> 00:23:41,953
Now by NASA Disasters Program Coordinator

417
00:23:42,020 --> 00:23:44,990
Ricardo Quiroga. Ricardo's research focuses

418
00:23:45,056 --> 00:23:45,991
on disaster risk

419
00:23:46,057 --> 00:23:49,928
reduction and the application of Earth's observation

420
00:23:49,995 --> 00:23:52,931
to develop products and services for decision makers

421
00:23:52,998 --> 00:23:55,967
throughout the disaster cycle. Ricardo, Thank

422
00:23:56,034 --> 00:23:58,003
you for joining us today.

423
00:23:58,069 --> 00:24:01,973
Thank you for having me here. This is an honor for me. And

424
00:24:02,040 --> 00:24:05,911
let's talk about how growing up in Colombia influenced

425
00:24:05,977 --> 00:24:08,914
the work you do today. Yes, I was born

426
00:24:08,980 --> 00:24:11,917
in Colombia in the coffee region with one of the

427
00:24:11,983 --> 00:24:14,953
most variety birds in the world.

428
00:24:15,020 --> 00:24:17,956
Also, I’ve touredall the ecosystems

429
00:24:18,023 --> 00:24:20,992
and regions in Colombia. Also visited in Amazon

430
00:24:21,059 --> 00:24:23,995

jungle where I work with indigenous communities trying

431
00:24:24,062 --> 00:24:27,999
to help to protect the ecosystems and those

432
00:24:28,066 --> 00:24:30,969
communities including the non-contacted

433
00:24:31,036 --> 00:24:34,940
communities. That's why I understood

434
00:24:35,006 --> 00:24:37,909
the needs of observations to understand

435
00:24:37,976 --> 00:24:40,946
the planet and deal with this kind

436
00:24:41,012 --> 00:24:43,949
of challenge and disasters. And

437
00:24:44,015 --> 00:24:46,985
can you tell us more about your role at NASA and

438
00:24:47,052 --> 00:24:50,956
for you personally, why it is important?

439
00:24:51,022 --> 00:24:53,992
Yes, my roll at NASA is to be a bridge between the data,

440
00:24:54,059 --> 00:24:57,963
NASA expertise and models with

441
00:24:58,029 --> 00:25:00,999
the communities, the countries, the government and disaster

442
00:25:01,066 --> 00:25:04,936
agencies. Be the bridge between NASA

443
00:25:05,003 --> 00:25:07,939
science and technology and decision-makers in the

444
00:25:08,006 --> 00:25:10,942
region. To support them, understanding the

445
00:25:11,009 --> 00:25:14,012
risk, understanding the damage and also providing

446
00:25:14,079 --> 00:25:17,949
near-real-time products to make this important decision

447
00:25:18,016 --> 00:25:20,986
in all the whole cycle of the disasters.

448
00:25:21,052 --> 00:25:23,989
And what natural disasters has your work helped

449
00:25:24,055 --> 00:25:26,992
in regards to recovery? Yeah,

450
00:25:27,058 --> 00:25:29,995
our program works with a different variety

451
00:25:30,061 --> 00:25:33,932
of disasters. For example, landslides, hurricanes

452
00:25:33,999 --> 00:25:36,968
floods, fires, providing near

453
00:25:37,035 --> 00:25:40,939
real-time data to end users. But

454
00:25:41,006 --> 00:25:43,975
nowadays, we are working with Guatemala City

455
00:25:44,042 --> 00:25:46,978

and multi-risk assessment in Guatemala City is important

456
00:25:47,045 --> 00:25:49,981
because their lives 1.8

457
00:25:50,048 --> 00:25:51,016
million people.

458
00:25:51,082 --> 00:25:54,920
Most of them poor communities and this

459
00:25:54,986 --> 00:25:57,956
is a combined effort with

460
00:25:58,023 --> 00:26:01,960
government of Guatemala, Guatemala City Government,

461
00:26:02,027 --> 00:26:04,996
United Nation disaster risk reduction and other Regional

462
00:26:05,063 --> 00:26:08,934
agencies in disasters. This is an

463
00:26:09,000 --> 00:26:11,970
incredible project because we are using high resolution

464
00:26:12,037 --> 00:26:15,006
data NASA data and NASA models to

465
00:26:15,073 --> 00:26:18,944
modeling the risk in that City and

466
00:26:19,010 --> 00:26:21,947
that city has high seismic risk

467
00:26:22,013 --> 00:26:24,950
that could affect many

468
00:26:25,016 --> 00:26:28,019
people. And how do you connect to the communities

469
00:26:28,086 --> 00:26:31,957
and the people that you work with that you mentioned?

470
00:26:32,023 --> 00:26:34,993
Yeah working the Americas is important to

471
00:26:35,060 --> 00:26:38,930
know the cultural elements, it’s important

472
00:26:38,997 --> 00:26:41,967
to speak the language, the original languages. Also

473
00:26:42,033 --> 00:26:45,003
trying to connect the people as friends because we are creating

474
00:26:45,070 --> 00:26:48,974
a community in disasters topics. That's

475
00:26:49,040 --> 00:26:50,976
why is very important that NASA

476
00:26:51,042 --> 00:26:54,980
to lead and achieve credibility, to

477
00:26:55,046 --> 00:26:59,951
join all those points, those stakeholders

478
00:27:00,018 --> 00:27:03,021
to create a collaborative efforts

479
00:27:03,088 --> 00:27:06,024
to support decision-making and also

480
00:27:06,091 --> 00:27:09,928

to deal with disasters in

481
00:27:09,995 --> 00:27:12,931
the in one of the most exposed regions in the world

482
00:27:12,998 --> 00:27:15,934
to disasters. The work you

483
00:27:16,001 --> 00:27:18,937
do is very important. And for those

484
00:27:19,004 --> 00:27:20,972
watching what's one piece of advice

485
00:27:21,039 --> 00:27:24,943
you could share with others who are just starting in their careers

486
00:27:25,010 --> 00:27:28,947
and maybe want to take a similar career path to yours?

487
00:27:29,014 --> 00:27:31,950
Well, I came here because I have my heart very

488
00:27:32,017 --> 00:27:34,986
connected with the nature, with the communities and

489
00:27:35,053 --> 00:27:38,923
at one point of my life and I understood that it is

490
00:27:38,990 --> 00:27:41,960
absolutely needed to involve science

491
00:27:42,027 --> 00:27:44,963
and technology to deal with the big challenges

492
00:27:45,030 --> 00:27:50,001
that humanity has in the future. For example, overpopulation,

493
00:27:50,068 --> 00:27:53,004
limited resources and also great

494
00:27:53,071 --> 00:27:56,941
disasters coming. I think the Science and Technology

495
00:27:57,008 --> 00:27:57,976
combined with passion for them

496
00:27:58,043 --> 00:28:01,913
is a key element to be part of this

497
00:28:01,980 --> 00:28:04,949
effort to save lives and goods in the communities

498
00:28:05,016 --> 00:28:07,986
of the Americas. Fantastic advice.

499
00:28:08,053 --> 00:28:12,924
Thank you, Ricardo, for sharing that and joining us today.

500
00:28:12,991 --> 00:28:15,927
Thank you for having me here is an honor to be part of

501
00:28:15,994 --> 00:28:18,930
the NASA Disaster Program. Thank you. Thank

502
00:28:18,997 --> 00:28:21,933
you and thank you for joining us at home. There's

503
00:28:22,000 --> 00:28:24,936
another opportunity coming up this afternoon for

504
00:28:25,003 --> 00:28:27,939
you to ask questions to some of NASA's Hispanic-American

505
00:28:28,006 --> 00:28:28,039

employees.

506
00:28:28,039 --> 00:28:30,975
Join a Reddit AMA at 4

507
00:28:31,042 --> 00:28:33,978
p.m. Eastern time. visit the NASA en Espanol

508
00:28:34,045 --> 00:28:36,981
accounts for information and a direct link

509
00:28:37,048 --> 00:28:39,984
and while you're there make sure to follow NASA español

510
00:28:40,051 --> 00:28:42,987
on Facebook, Twitter and Instagram. Thank