



1
00:00:05,472 --> 00:00:06,840
>> Designing, building

2
00:00:06,840 --> 00:00:07,941
and launching rockets

3
00:00:07,941 --> 00:00:10,143
is always an exciting journey.

4
00:00:10,143 --> 00:00:11,511
But perhaps a real benefit

5
00:00:11,511 --> 00:00:12,545
of rockets isn't what

6
00:00:12,545 --> 00:00:14,047
they do during launch,

7
00:00:14,047 --> 00:00:14,914
but what they carry

8
00:00:14,914 --> 00:00:15,982
as their scientific

9
00:00:15,982 --> 00:00:17,650
or engineering mission.

10
00:00:17,650 --> 00:00:18,852
Payloads can be anything

11
00:00:18,852 --> 00:00:21,287
from telescopes to satellites

12
00:00:21,287 --> 00:00:23,189
to scientific instruments.

13
00:00:23,189 --> 00:00:24,457

The payload component

14

00:00:24,457 --> 00:00:25,291
of this year's

15

00:00:25,291 --> 00:00:27,827
NASA Student Launch competition

16

00:00:27,827 --> 00:00:28,995
challenged teams

17

00:00:28,995 --> 00:00:30,663
to build a system that,

18

00:00:30,663 --> 00:00:31,664
following the landing

19

00:00:31,664 --> 00:00:33,500
of the rocket, would navigate

20

00:00:33,500 --> 00:00:35,402
to a designated site,

21

00:00:35,402 --> 00:00:36,269
retrieve at least

22

00:00:36,269 --> 00:00:37,470
ten milliliters

23

00:00:37,470 --> 00:00:39,472
of simulated lunar ice,

24

00:00:39,472 --> 00:00:40,774
and then navigate at least

25

00:00:40,774 --> 00:00:42,609
ten feet away from that site

26

00:00:42,609 --> 00:00:44,944
with their sample safely stored.

27

00:00:44,944 --> 00:00:46,513
The Payload Design Award

28

00:00:46,513 --> 00:00:48,181
is given to the team

29

00:00:48,181 --> 00:00:49,449
with the most creative

30

00:00:49,449 --> 00:00:50,850
and innovative approach

31

00:00:50,850 --> 00:00:52,419
to tackling this challenge

32

00:00:52,419 --> 00:00:54,387
while maximizing safety,

33

00:00:54,387 --> 00:00:55,221
and scientific

34

00:00:55,221 --> 00:00:57,657
and engineering value.

35

00:00:57,657 --> 00:00:58,858
In third place,

36

00:00:58,858 --> 00:00:59,926
Purdue University

37

00:00:59,926 --> 00:01:03,229
of West Lafayette, Indiana.

38

00:01:03,229 --> 00:01:04,597

Second place goes to

39

00:01:04,597 --> 00:01:06,132

Vanderbilt University

40

00:01:06,132 --> 00:01:08,902

of Nashville, Tennessee.

41

00:01:08,902 --> 00:01:11,237

In first place, University

42

00:01:11,237 --> 00:01:13,473

of North Carolina, Charlotte.

43

00:01:13,473 --> 00:01:14,774

UNCC approached

44

00:01:14,774 --> 00:01:15,975

this mission objective

45

00:01:15,975 --> 00:01:18,344

by designing a two-part system.

46

00:01:18,344 --> 00:01:19,512

The first part detected

47

00:01:19,512 --> 00:01:21,080

the sample retrieval location

48

00:01:21,080 --> 00:01:22,615

during the rockets descent,

49

00:01:22,615 --> 00:01:23,216

and saved that

50

00:01:23,216 --> 00:01:25,118

location information.

51
00:01:25,118 --> 00:01:26,753
Once the rocket had landed,

52
00:01:26,753 --> 00:01:27,954
that location information

53
00:01:27,954 --> 00:01:29,589
was relayed to an unmanned

54
00:01:29,589 --> 00:01:30,924
aerial vehicle,

55
00:01:30,924 --> 00:01:32,659
with integrated computer vision

56
00:01:32,659 --> 00:01:34,427
and obstacle avoidance.

57
00:01:34,427 --> 00:01:35,862
This allowed it to calculate

58
00:01:35,862 --> 00:01:37,330
a clean flight path

59
00:01:37,330 --> 00:01:37,897
to the sample

60
00:01:37,897 --> 00:01:39,732
retrieval location.

61
00:01:39,732 --> 00:01:41,234
Testing of this system

62
00:01:41,234 --> 00:01:42,435
showed that the design

63
00:01:42,435 --> 00:01:43,470

and construction were

64

00:01:43,470 --> 00:01:45,905

successful, congratulations.

65

00:01:51,044 --> 00:01:51,544

>> Hello, my name

66

00:01:51,544 --> 00:01:52,712

is Jorge Herenandez,

67

00:01:52,712 --> 00:01:53,346

I'm the CEO

68

00:01:53,346 --> 00:01:54,414

of Bastion Technologies

69

00:01:54,414 --> 00:01:54,981

and I'm honored

70

00:01:54,981 --> 00:01:56,716

to represent our company

71

00:01:56,716 --> 00:01:57,684

and NASA Student Launch

72

00:01:57,684 --> 00:01:58,485

for presentation

73

00:01:58,485 --> 00:01:59,853

of the Safety Award.

74

00:01:59,853 --> 00:02:00,787

Bastion Technologies

75

00:02:00,787 --> 00:02:02,755

is a proud sponsor of this event

76
00:02:02,755 --> 00:02:03,756
and shows its commitment

77
00:02:03,756 --> 00:02:05,191
to continued support

78
00:02:05,191 --> 00:02:06,993
by providing a \$500 prize

79
00:02:06,993 --> 00:02:07,994
to the first place winner

80
00:02:07,994 --> 00:02:09,562
of this award

81
00:02:09,562 --> 00:02:11,097
in recognition of the fact

82
00:02:11,097 --> 00:02:11,865
that launching

83
00:02:11,865 --> 00:02:13,032
and even viewing a launch

84
00:02:13,032 --> 00:02:14,734
is inherently hazardous,

85
00:02:14,734 --> 00:02:16,135
you have been singled out

86
00:02:16,135 --> 00:02:17,103
for your efforts to maintain

87
00:02:17,103 --> 00:02:18,004
a safe environment

88
00:02:18,004 --> 00:02:19,439

during this event.

89

00:02:19,439 --> 00:02:20,440

As you know,

90

00:02:20,440 --> 00:02:21,574

NASA applies stringent

91

00:02:21,574 --> 00:02:23,109

range safety principles

92

00:02:23,109 --> 00:02:24,477

and techniques.

93

00:02:24,477 --> 00:02:25,311

You obviously took

94

00:02:25,311 --> 00:02:27,113

those cautions seriously,

95

00:02:27,113 --> 00:02:27,914

and did your best

96

00:02:27,914 --> 00:02:28,948

to incorporate appropriate

97

00:02:28,948 --> 00:02:31,751

safeguards into your projects.

98

00:02:31,751 --> 00:02:32,519

For that reason,

99

00:02:32,519 --> 00:02:33,786

I am proud to present you

100

00:02:33,786 --> 00:02:35,255

with the Safety Award.

101
00:02:35,255 --> 00:02:37,123
This award is given to the team

102
00:02:37,123 --> 00:02:38,892
that meets all safety

103
00:02:38,892 --> 00:02:40,960
expectations and has the highest

104
00:02:40,960 --> 00:02:42,095
quality documentation

105
00:02:42,095 --> 00:02:43,930
regarding safety.

106
00:02:43,930 --> 00:02:45,632
Here are the winners.

107
00:02:45,632 --> 00:02:48,268
Third place, the University

108
00:02:48,268 --> 00:02:51,137
of North Carolina, Charlotte.

109
00:02:51,137 --> 00:02:52,605
Second place,

110
00:02:52,605 --> 00:02:53,773
Vanderbilt University,

111
00:02:53,773 --> 00:02:57,610
Nashville, Tennessee.

112
00:02:57,610 --> 00:03:00,079
And first place goes to

113
00:03:00,079 --> 00:03:01,381

the University of Alabama

114

00:03:01,381 --> 00:03:03,116
in Huntsville.

115

00:03:03,116 --> 00:03:05,318
UAH created and continually

116

00:03:05,318 --> 00:03:06,419
updated safe--

117

00:03:06,419 --> 00:03:07,654
a safety manual

118

00:03:07,654 --> 00:03:09,355
that covered shop hazards,

119

00:03:09,355 --> 00:03:10,757
chemical material safety,

120

00:03:10,757 --> 00:03:12,125
construction hazards

121

00:03:12,125 --> 00:03:13,893
and a thorough investigation

122

00:03:13,893 --> 00:03:15,995
of all failure modes.

123

00:03:15,995 --> 00:03:17,363
Hazard worksheets are

124

00:03:17,363 --> 00:03:18,932
well organized in functional

125

00:03:18,932 --> 00:03:21,200
groups and operational phases.

126

00:03:21,200 --> 00:03:22,335

And match up with

127

00:03:22,335 --> 00:03:23,269

our launch procedures