good afternoon ladies and gentlemen I am Leland Melvin associate administrator for education and on behalf of NASA Administrator Charlie Bolden and USAID administrator Rajiv Shah I welcome you to today's event I like to give a special thank you and welcome to David Barras he's my counterpart at USAID we're working some education programs together so thank you also for coming and first I like to talk about relationships this is a wonderful relationship that we're joining forces
to help change the world if you take a look at the slide of there as an astronaut both Charlie and I flew in space multiple times and if you look at this slide here you see people from all around the world we had african-american Asian American French German Russian and the first female commander now when I got to space dr. Whitson who you see there in the green shirt in the middle she invited us over to dinner to break bread in the service module in a Russian segment and we said you guys bring the vegetables will have the meat and so we
floated over with our rehydrated vegetables and we were sitting there having this meal at this outpost 240 miles up in space driving around the planet every 90 minutes at 17,500 miles per hour looking at the planet below listening to shaday while we were eating our meals but I tell you this because these were people in space it were at one time fighting against each other and we were working together for a common goal to extend humankind and civilization so as I look at the students because the students please
stand up in here for a second if i look

00:01:47,769 --> 00:01:50,849
at the students in here

00:01:53,500 --> 00:01:58,670
all of you are the future you are the

00:01:56,780 --> 00:02:01,460
future of our civilization you're the

00:01:58,670 --> 00:02:02,810
future of helping come together working

00:02:01,459 --> 00:02:04,519
with people that don't sound like you

00:02:02,810 --> 00:02:06,560
they don't talk like you they maybe

00:02:04,519 --> 00:02:07,879
don't eat the same food that you eat but

00:02:06,560 --> 00:02:09,110
you got to come together well I got to

00:02:07,879 --> 00:02:11,030
come together to make a difference in

00:02:09,110 --> 00:02:17,510
this world so thank you for coming you

00:02:11,030 --> 00:02:19,519
can all sit down now so as I said

00:02:17,509 --> 00:02:21,259
breaking bread together in space sharing

00:02:19,519 --> 00:02:23,180
together relationships it's all about

00:02:21,259 --> 00:02:25,719
coming together as one if you go to the
next slide this is Tracy Caldwell Dyson
looking out of the cert out of the acapella it's of our space window
looking down on the planet and as we go around the planet every 90 minutes you see so many different things but one thing that you don't see is Geographic borders borders that separate people it's just one planet and this relationship is going to help us as a civilization come together to ensure that we get along we work together and we make differences in the world and so breaking down barriers of race sex and
even close mindedness you must get a lot of people who may not look like you sound like you're even like you the signing of this mou between NASA and USAID is a fine example of relationship building of coming together to make a difference not just for one agency or even one country but for people of this world at this time I'd like to introduce administrator Shah did you please come to the stage dr. Rajiv Shah was sworn in as the 16th administrator of the United States Agency for International Development USAID on December 31st 2009
welcome

thank you it is wonderful to be here

with you and thank you so much Leland

for those inspiring opening words in

your kind introduction I want to thank

NASA for hosting this event and

continuing to inspire our country and

our kids I want to thank administrator

Bolden for seizing the opportunity to

partner with us with a huge amount of

passion and commitment and I want to

thank in particular all of the students

that have come today because really it

this is really about the
opportunities we have for the future

together and fifty years ago President

Kennedy asked Congress to achieve two

incredibly ambitious goals one everyone

in this building is very familiar with

the challenge to get to the moon and

the challenge to be leaders in our space

exploration and to use that as a way to

both demonstrate our technological

prowess and bring our world closer

together and we saw the successful

fruits of those labors the other goal

was perhaps less well understood at that

time but in 1961 President Kennedy sent

a letter to Congress asking Congress to
create the US Agency for International Development to help transmit our values around the world to look after those who were the most vulnerable to make sure children didn't suffer and die from famine and hunger and disease and a lack of access to water and basic health and for 50 years we've been carrying that mantle so to have the opportunity today to announce a partnership under President Obama's leadership to bring together NASA representing all of what we can do when we put our minds together and try to solve tough problems and US
aid representing our challenge of getting our values and our core compassion and commitments transmitted to the farthest corners of the globe's to protect the most vulnerable people is just a very special and unique opportunity for me to join so I want to thank everybody for pulling this together today you know our logo at US aid is the picture they're over there with the handshake and it represents the partnerships we engage in with countries around the world on commodities that we send food
that we send right under the logo it says from the American people but the reality is the things we do in development and the things we do around the world are also for the American people we see whether in Afghanistan or other parts of the world that our core activities are a critical part of keeping us safe and maintaining our security we have seen in successful engagements over decades in places like South Korea that we help create real economic opportunity for American businesses and American communities and
I see every time I visit college

158
00:06:37.949 --> 00:06:42.779
campuses around this country how we are

159
00:06:40.560 --> 00:06:44.930
part of expressing our moral values

160
00:06:42.779 --> 00:06:47.609
around the world and how that inspires

161
00:06:44.930 --> 00:06:50.850
students and future generations of

162
00:06:47.610 --> 00:06:53.550
students to do ever more to invent the

163
00:06:50.850 --> 00:06:56.189
kind of solutions that can really bring

164
00:06:53.550 --> 00:06:57.810
about tremendous change there are two

165
00:06:56.189 --> 00:06:59.969
specific programs I think we're going to

166
00:06:59.970 --> 00:07:02.339
learn about today the launch program and

167
00:07:02.339 --> 00:07:06.239
the severe program I'm thrilled that

168
00:07:04.319 --> 00:07:06.239
Carrie Stokes one of our leaders from

169
00:07:04.319 --> 00:07:08.939
our economic growth and climate group

170
00:07:06.240 --> 00:07:11.120
will be here to talk to us about the

171
00:07:08.939 --> 00:07:13.860
severe program the fact that we can use
satellite imagery and other geospatial data to identify where disasters might strike and to identify where when those disasters might strike tens of thousands of people might lose their lives and then do things to prevent it ahead of time I'm also thrilled we're going to learn about the launch program and we'll learn from our colleagues that are creating new applications of mobile technology and mobile phones to really bring human opportunity to people who have lived off-grid for far far too long it's been
a real priority of mine to reintroduce science technology and innovation into what USA it stands for and represents you know just last week or just a few weeks ago I had the chance to visit a group of students at MIT and they took me into one of their basement laboratories where PhD students and undergrads were coming together most had visited developing countries worked in rural villages seen how young girls often don't get to go to school because they're out getting water and then purifying it back home so their
families have something to drink or

they've seen how mothers forego meals

even when they're pregnant so their

other kids can eat and they've been seen

the disastrous consequences of that

acute malnutrition on young children and

pregnant women and they were literally

inventing the solutions to those

problems they were inventing new water

purifiers that could help save thousands

millions of labor hours of girls so the

girls could go to school they were

inventing improved products for

nutrition food products so that the very
poor most vulnerable amongst us has a
chance to lead a healthy productive life

and I was so proud of those students and
in the same way I'm so proud of what
we're all doing here together today

because we're bringing the inventiveness
the technology what NASA represents to
the challenge of development and we're
doing it in a real spirit of partnership
so I want to thank the entire NASA team
for really inspiring me and for showing
all of us that when we're committed and
inventive we can change the world for
the better in a fundamental way I now
have the unique pleasure of opera
introducing administrator Bolden and I
don't think he needs much of an
introduction in this building but let me
tell you he's a distinguished former
Marine he's in the u.s. astronaut Hall
of Fame he's been a CEO and a
motivational speaker and he's probably
the coolest administrator in the federal
government as a result of all of that
but what I'm so committed what I'm so
excited about is when when he first came
to see me when we first met he told me
he said look Raj I want us to do stuff
together that actually generates results
for the poorest and most vulnerable

people around the world and I have a sense that whether it’s inventing new water purification technologies and using space-based experiments to do it or whether it’s just figuring out how to get this incredible community of inspirational leaders who have been astronauts or current astronauts thinking about and talking about this next greatest challenge of our time the quest to end hunger and poverty the quest to extend human opportunity to the farthest corners of the globe I’m
committed to it and I want to partner

with you and so for that sir thank you

don't much and I'm excited to have to be

here today with you let's get my hand

great rush thanks so very much and

thanks to all of you for coming out this

afternoon I know there hopefully there

are thousands of people around the

country who are watching this over

television or whatever but I'm delighted

to be here today to take part in

formalizing the exceptional relationship

that nASA has with the US Agency for

International Development through the

International Development through the
signing of this MOU this afternoon I

really want to extend a special welcome

to you dr. Shaw and your staff for

all that you have done you know you have

you funded severe for a long time you

are the dominant funder and we just go

to work with you and that's been a lot

of fun as I look at Carrie smiling out

there and an arrow and we've met each

other at different places around the

world and it's been absolutely

incredible when you and Dan and Carrie

going to talk a little bit about severe

later on so or shortly okay I'm not

going to be here very long I see some of
00:11:46,029 --> 00:11:51,850
you going whoo how long is he going to

00:11:49,299 --> 00:11:55,169
talk I'm not going to talk very long but

00:11:51,850 --> 00:11:58,269
but hopefully dan and sherry will will

00:11:55,169 --> 00:12:00,159
hopefully they will help you to carry

00:11:58,269 --> 00:12:02,049
will help you to understand the

00:12:00,159 --> 00:12:04,389
significance of programs like launch and

00:12:02,049 --> 00:12:06,789
like severe for what they do for people

00:12:04,389 --> 00:12:08,529
around the world who otherwise would not

00:12:06,789 --> 00:12:10,929
be able to do things for themselves when

00:12:08,529 --> 00:12:14,799
we were in Nairobi Kenya they had just

00:12:10,929 --> 00:12:17,589
started working on drought and flood

00:12:14,799 --> 00:12:20,379
models for 15 nations in East Africa and

00:12:17,590 --> 00:12:25,540
we had an opportunity to open the third

00:12:20,379 --> 00:12:27,250
severe center in Katmandu Nepal I mean
you know enough I guess in the was that

the foothills would you call it the

foothills of the Himalayas about you

know but but it was absolutely

incredible

to see these people really excited about

having an opportunity to work with USAID

and NASA on something that was really

going to make a difference for people in

that part of the world I joined dr. Shaw

so in welcoming the students here yeah

I'm particularly pleased to see the

number of you who have been able to come

out today and I know it's a very busy
time of the school year for you you're

trying to get through the to the end of

the year and hoping it'll end soon I can

see some of you smiling as i say that

some of you hope it never ends but your

moms and dads or you know kind of hoping

the other way i hope that more students

around the around the country right now

are watching this telecast today over

the last several years working in close

partnership with USAID we've

demonstrated the useful application of

space technology to address a variety of

environmental challenges throughout the
developing world using pilot projects

and programs such as severe program

about which you will be hearing more

our partnership in severe has been a model for the successful use of environmental data from space and on the ground to help decision-makers better address the challenges of sustainable international development the first severe operational facility was developed in cooperation with countries in Central America and is based in Panama severe has since expanded to include additional regional capabilities
based in Kenya and in Nepal as I just
mentioned a new mo you will serve to
document our mutual commitment to
expanding our efforts in this and other
important programs NASA and USAID are
also working to turn breakthrough
science and technology innovations
discussed at launched initiatives and
launch forums that have been held
earlier this year and last year at the
Kennedy Space Center into real
applications of benefit to both agencies
and most importantly to people around
the world. Dr. Shaw and I have a strong
belief in our exploration of space have

a strong belief that the revolutionary new innovations that will help NASA in our exploration of space may also help USAID and their partners to address some of today's most difficult international development challenges our partnership will seek to address important health nutritional environmental safety and other challenges in developing countries in a manner that is mutually beneficial for the missions of our agencies dr. Shaw this is a very exciting and
important day for our two agencies and I

welcome the opportunity to work closely

with the US Agency for International

Development under our new agreement to

find solutions to developmental

challenges around the world I hope that

the joint work that we will highlight

this afternoon will serve to inspire

students here today and those watching

our telecast about the values of science

technology engineering and mathematics

in their daily lives we need you every

one of you out there not only in outer

space but also here on the ground

one of you out there not only in outer
solving problems for the world community

then will continue to make a real difference in the world and I do hope that some of you who have not thought about what you want to do in the years ahead will give consideration to becoming members of either the team at USAID or the team at NASA so thanks again for coming out and welcome to all of you.

thanks administrator Shah and boldin okay let me find my place next I’m going to introduce Dan Merlin he's a NASA research scientist with over 17 years of experience in satellite remote sensing.
applications and geographic information

systems in the developing world dan is currently the director of severe the regional visualization and monitoring system which is a joint NASA and USAID program consisting of operational facilities in Panama Kenya and Nepal as one of the 100 steps toward the global Earth observation system of systems

surveyor has provided key decision support information for monitoring the land surface oceans and atmosphere in addition to his work at NASA dan has
promoted small businesses in rural Central American villages to provide economic alternatives to tropical rainforests slash and burn agriculture and he's also built this is pretty cool he's also built a Children's Library in playgrounds in rural villages in Guatemala please join me in welcoming band Erwin thank you it's a it's a real pleasure to be here my career actually started about 20 years ago a prior to joining NASA I was working for USAID in Guatemala on a project where I was sent down there to actually map a new rain
forest reserve and my job consisted of
using a first generation GPS and survey

demarcate this reserve and as you can
imagine it was an incredibly physically
challenging job the mosquitoes the heat
walking sometimes 20 miles a day and
then I did that for about a year and by
happenstance a NASA scientist by the
name of Tom Seaver comes down to
Guatemala to do his fieldwork
comes down there and I meet him and he
rolls out these satellite images of
guatemala and i'm looking at venom and

00:18:30,980 --> 00:18:35,269
i'm saying oh my goodness i just spent

00:18:32,630 --> 00:18:36,860
the last year walking around and mapping

00:18:35,269 --> 00:18:40,099
and i can see everything i've done in

00:18:36,859 --> 00:18:41,809
about five minutes and it was an

00:18:40,099 --> 00:18:43,730
extraordinary experience and it taught

00:18:41,809 --> 00:18:45,559
me of course it didn't totally replace

00:18:43,730 --> 00:18:47,450
the importance of being in the field and

00:18:45,559 --> 00:18:49,909
in working with communities but it

00:18:47,450 --> 00:18:52,490
changed my life and it changed my career

00:18:49,910 --> 00:18:54,500
and basically from there on i ended up

00:18:52,490 --> 00:18:56,509
joining nasa and dedicating my life and

00:18:54,500 --> 00:18:58,789
career to the use of satellite

00:18:56,509 --> 00:19:00,200
information and earth observations for

00:18:58,789 --> 00:19:03,019
development i actually spent several
years in Guatemala there after taking satellite imagery to the villages and showing them what was happening in their communities and seeing what was happening with the advance of the agricultural frontier and showing them that their forest was disappearing rapidly. Next, please now when most people think of NASA, they think of the space shuttle or the International Space Station or exploring the solar system. Fewer people know that a goal of NASA since it was founded is to study the Earth from space to advanced scientific...
understanding and meet societal needs in

over the past 50 years the population on

our planet has doubled and human

activities are now affecting about half

of the lands earth surface and from that

vantage point of space using satellites

using our eyes in the sky we can view

and monitor our planet in different ways

and better understand and look at our

earth these the solid earth the land

surface the atmosphere and the oceans

next please and change is happening in

so many ways and one of the best ways to

see it is from satellite is you look at
this image of Santa Cruz Bolivia in the Amazon basin from 1975 you see intact forests and if you next slide please and look what happens in 2008 the entire and we're looking at about a hundred kilometers across completely dominated by agricultural parcels replacing the intact forest next please and what you're seeing here is a political boundary from space this image was acquired in the mid 80s and you can actually see a political boundary from space due to the d4 station that occurred on the Mexican
side of the border and Guatemala still

500
00:20:43,039 --> 00:20:47,450
had its forests intact and that image

501
00:20:45,339 --> 00:20:49,609
extremely powerful is published in

502
00:20:47,450 --> 00:20:51,169
National Geographic and it got the

503
00:20:49,609 --> 00:20:53,479
presidents of Guatemala and Mexico

504
00:20:51,169 --> 00:20:55,910
together for the first time in many

505
00:20:53,480 --> 00:20:58,960
years and the congress and president of

506
00:20:55,910 --> 00:21:02,058
guatemala actually use this image as

507
00:20:58,960 --> 00:21:03,558
justification for the maya biosphere

508
00:21:02,058 --> 00:21:06,079
reserve which is the largest protected

509
00:21:03,558 --> 00:21:08,329
area in all of Central America so it's a

510
00:21:06,079 --> 00:21:10,418
great example showing how an image

511
00:21:08,329 --> 00:21:14,000
space-based information can really

512
00:21:10,419 --> 00:21:19,370
affect policy here on earth to protect

513
00:21:14,000 --> 00:21:22,190
our natural resources next please where
NASA looks at Earth from space. US aid works on the ground helping people around the world make a better life. Recover from a disaster striving to live in a free and democratic country and what's exciting with the renewed focus on science and technology and innovation. The agency's really have formed what I sometimes call a space to village relationship next please and one of the ways that that NASA and US aid are working together is through the severe project and severe which is Spanish to serve is a joint agency effort to use.
satellite imagery and geospatial information to improve decision-making in the developing world and this is done through satellite imagery and in maps and visualization tools and monitoring capabilities and and training and partnerships and NASA through the Applied Sciences program enables science and applications and US aid provides its development expertise it enables the partnerships and the in-country staff and infrastructure so it's a fantastic relationship and I as well want to acknowledge my counterpart Carrie Stokes
and thanks to her servia really is

becoming a global network and I also

want to acknowledge my NASA headquarters

colleagues woody Turner and Lawrence

friedel from the Applied Sciences

program who have been so critical in

making severe what it is today next

please so severe is a is becoming a

global network it consists of a program

coordination office at the NASA Marshall

Space Flight Center in Huntsville

Alabama and we team we bring the

expertise from all of the

NASA centers that are doing relevant


work to earth science including Goddard

and JPL and Ames and Langley and

Stennis and we bring that expertise and knowledge and then we have as was said previously we have these regional centers and that's really where the work gets done we provide that knowledge and science and expertise but thanks to us aid we can enable these partnerships in many places such as Panama for severe Mesoamerica at an organization called Cadillac in East Africa at RCM rd server east africa and most recently a severe himalaya at ec mod in Katmandu Nepal next please in severe teams at
cadillac and RC Mr D and E seem odd

they're made up of young and enthusiastic scientists and researchers

not much older than the students here in

the room and they represent the different countries that we work in next

please in examples of some of the things that we do fires through slash and burn

agriculture devastate the landscape in

many places around the world for example

in Central America you can see in that

image the red spots that are the fire

hot spots detected by the modis sensors

aboard the Terran Aqua satellites in the
smoke that is actually crossing the Gulf

of Mexico and going into Mexico in the

United States so we're able to use

satellites to see where these fires are

to help for example the country of

Guatemala see where the fires are they

have limited resources and they can use

this information in real-time and

operationally to help put their

firefighting resources out to the

communities where these fires are

occurring and sometimes they don't even

know that the fires are occurring until

they see the satellite image which comes
in daily and then we've taken it a step further by creating a fire forecast.

model with the country of Guatemala actually they took the lead in developing it some researchers for example Victor ooga Ramos in in in their Park Service where they take the satellite data and they bring it together with models and they can actually predict the areas that forest fires are going to occur providing a forecast makes please a few years ago there was an algal bloom off the coast of Central America which affects
sea life and the safety of swimming at beaches and we worked with the government of El Salvador to customize products you can see that red area which is the intense chlorophyll concentration which developed into a red tide and the government said of El Salvador said that this type of product saves them 14 million dollars to their fishing industry every year next please and in Guatemala this is a lake called Lake atitlán and it's one of the most beautiful lakes in the world it's a lake that's completely surrounded by volcanoes but you can also see because
of the landscape that yellow line that's
the watershed so it's an incompletely
enclosed watershed and you have villages
around the lake and a little over a year
ago they started reporting a
cyanobacteria outbreak in the lake and
then we use the NASA satellites to to
take an image of that and you can see
that green in the image is the
cyanobacteria that was detected on the
surface of the lake and that image it
was so powerful it made the front page
of Guatemala's largest newspaper and
resulted in an action plan to clean up
the lake so and of course US aid is critically important than in that plan to work with the communities to clean up the lake next please and of course the pakistan floods were devastating but one of the best ways they were so extensive that one of the best ways to to understand the extent of the flooding was through satellite imagery and we threw our severe himalaya group a TC mod developed maps us often times several times weekly to show the extent of the flood as it occurred throughout last fall and then seeing how
that flood affected infrastructure and

affected agriculture so the products

became heavily used during the pakistan

training and capacity building is so

critical to enable the researchers and

the scientists and the students around

the world to use these tools so they can

integrate them into their work and make

better decisions and we have a program

in East Africa called mykko severe

together with the

american association of geographers

that's giving students from africa new
opportunities to use satellite data so

00:27:26,799 --> 00:27:30,279
you have students as you can see in the

00:27:28,539 --> 00:27:33,250
picture that that oftentimes don't have

00:27:30,279 --> 00:27:34,839
the the resources and the ability to use

00:27:33,250 --> 00:27:37,299
this information and now they're doing

00:27:34,839 --> 00:27:39,789
all sorts of projects such as looking at

00:27:37,299 --> 00:27:43,089
the land cover and biodiversity and food

00:27:39,789 --> 00:27:47,109
security in countries such as Uganda and

00:27:43,089 --> 00:27:49,000
Kenya next please and of course as I

00:27:47,109 --> 00:27:51,129
mentioned earlier our earth is facing a

00:27:49,000 --> 00:27:53,349
transformation like we've never seen

00:27:51,130 --> 00:27:55,270
before throughout human history I showed

00:27:53,349 --> 00:27:57,969
some examples from Bolivia and from

00:27:55,269 --> 00:27:59,859
Mexico but I always feel like the image

00:27:57,970 --> 00:28:02,140
of earth city lights gives us the
feeling of the extent of the human impact that's occurring on our planet Earth thanks please and to provide additional observations during extreme events and humanitarian crises NASA is now developing a pathfinder camera system called I serve for the International Space Station taking advantage of ISS is unique orbit and the crew support so during future events NASA and US aid we can work together and share that imagery during events next please now the Maya civilization you can see the the ancient city of
Mirador, it covered many parts of Central America and was one of the most advanced civilizations throughout human history. But around 800 AD something happened, the civilization collapse and it's estimated that 10 million people perished and we now know that the Maya had cut down most of their trees to make their temples and this affected the local climatic conditions and you had natural regional conditions that were occurring causing what we believe to be a great drought and most of the experts believe that is the drought that caused the demise of...
the Maya civilization and as smart as

could not adapt to the natural and

had desmaya brilliant astronomers

mathematicians had they had had they had

the tools that we have today the ability

to observe their earth or the ability to

then take that

information and such as USA does do

something about it and today we faced

similar challenges is our landscape is

changing and we deal with natural
forcings on the environment however with

00:29:44,529 --> 00:29:49,359
our eyes on this in the sky and our

00:29:46,298 --> 00:29:51,400
boots on the ground NASA and US aid and

00:29:49,359 --> 00:29:53,649
our partner organizations and countries

00:29:51,400 --> 00:29:56,169
we have the tools and we have the

00:29:53,650 --> 00:29:57,669
knowledge to better avoid making the

00:29:56,169 --> 00:29:59,679
same mistakes of the past and working

00:29:57,669 --> 00:30:01,750
together to make the world a better

00:29:59,679 --> 00:30:17,919
place for generations to come next

00:30:01,750 --> 00:30:20,038
please thank you very much thank you Dan

00:30:17,919 --> 00:30:22,990
and Carrie thanks for that wonderful

00:30:20,038 --> 00:30:23,980
very informative presentation and we

00:30:22,990 --> 00:30:26,380
really appreciate the work you're doing

00:30:23,980 --> 00:30:27,909
together this relationship next would

00:30:26,380 --> 00:30:31,120
like to introduce two young innovators
who work with usaid in nasa the state department in nike on the launch project

Okay I'll get you guys to print a minute

Josh Nesbitt is a CEO of medic mobile and Dietrich Lawson is his chief technology officer medic mobile develops and extends existing open source platform to support community health worker coordination and management community mobilization for vaccination and satellite clinics as well as logistics and supply chain management referrals routine data collection and mapping of health services their
756
00:31:03,220 --> 00:31:07,000
innovative technology has provided

757
00:31:04,750 --> 00:31:09,279
critical support to developing countries

758
00:31:07,000 --> 00:31:12,909
in Africa and elsewhere around the globe

759
00:31:09,279 --> 00:31:16,109
please join me in welcoming Josh Nesbitt

760
00:31:12,909 --> 00:31:16,110
and Dietrich Lawson

761
00:31:18,329 --> 00:31:22,658
it's it's really amazing to be here and

762
00:31:21,190 --> 00:31:24,909
it is not every day that you're

763
00:31:22,659 --> 00:31:26,049
introduced by an astronaut so I think

764
00:31:24,909 --> 00:31:29,380
that we can check that off our bucket

765
00:31:26,048 --> 00:31:31,720
list so I want to jump right into it

766
00:31:29,380 --> 00:31:36,278
with the first slide if we can bring

767
00:31:31,720 --> 00:31:38,860
them up hopefully so medic mobile

768
00:31:36,278 --> 00:31:40,960
started its work if you go to the next

769
00:31:38,859 --> 00:31:43,388
slide again many mobile swords work in
2008 at a single Hospital in rural Malawi where two doctors were serving a quarter million people spread 100 miles in every direction so you literally had patients walking 60 80 100 miles to access care if you go to the next slide you'll see a picture of Dixon in the middle of the photo here and Dixon was one of about 500 volunteer community health workers who had been charged and had stepped up himself to decentralize patient care and be the frontline of global health in his local community and I had a conversation with Dixon one day
and he said he was walking 45 miles
every four days to hand deliver paper
reports and it was really clear that
these health workers were just as
disconnected as the patients were from
this clinic and its resources but I had a better mobile phone signal in rural Malawi than I did in Palo Alto I was a Stanford undergrad at the time and I met a guy who was coding and hacking away living out of a van on the edge of campus creating a really useful piece of software and on the next slide you'll see a shot of frontline SMS the front line basically runs on any laptop any
desktop you plug in a mobile phone tethered by USB cable or a gsm modem

with a local sim card and without the internet you have a functioning SMS server this is really all that we needed

so to go to the next slide we went back to the clinic distributed ten-dollar mobile phones seven dollar solar panels and set up an SMS coordination system and saw some really amazing things happen in just six months the next slide shows an intervention really simple for the first time ever there was localized emergency care and 150
patients receive care that wouldn't have been seen otherwise the next slide shows a new patient tracking system that they implemented for HIV TB in home-based care and this save them thousands of dollars in thousands of hours in travel and work time and the running operations cost for this program five hundred dollars over that first six months and maybe the most exciting use case intervention is on the next slide they started and this is something the health workers did on their own actually they sort of doing active case finding
for tuberculosis started finding symptoms in the communities and referring them for care and they doubled the number of patients that were treating for TB in just six months through a really simple communication system so we had these aha moments and to go to the next slide fast forward two years or a team of ten full time and we now work in 12 countries and places that we work and challenges that we're tackling it's places where mobile is sometimes the best but also often own the only way to get the information that
you need to take action an example of

00:34:15,849 --> 00:34:20,019
that is in DRC so if you look at the

00:34:17,648 --> 00:34:22,809
next slide on the right this is a

00:34:20,019 --> 00:34:25,599
delivery bed in a health post and on the

00:34:22,809 --> 00:34:27,369
left this is a medical record system at

00:34:25,599 --> 00:34:30,399
the biggest government hospital in

00:34:27,369 --> 00:34:32,550
Kinshasa and in this situation there is

00:34:30,398 --> 00:34:35,168
no emergency transport coordination

00:34:32,550 --> 00:34:37,119
there is no coordinated patient

00:34:35,168 --> 00:34:43,960
referrals and at some of the health posts that we visited a couple of weeks

00:34:38,440 --> 00:34:43,960
back fully 10% of mothers delivering our

00:34:42,068 --> 00:34:45,759
dying of complications it's just

00:34:43,960 --> 00:34:48,039
unacceptable and mobile is not a

00:34:45,760 --> 00:34:51,010
solution is a tool that paired with
people becomes a solution but we're excited about the very specific challenges in gaps that mobile might help to bridge I'm going to pass it off to Deitrick to talk a little bit about the technology thanks Josh as you said I'm Dietrich and I'm the CTO of medic mobile and if you go to the next slide you'll josh previously talked about frontline SMS I now I just want to talk about a few of the the software things that we're doing with frontline SMS some of the stuff that we built on top of it and some of what we're using it for and
so this is front line forms and it's built on top of frontline SMS and it's really interesting because it allows you to do data collection on really low-end handsets in typically when you do data collection you have to buy PDAs or you have to buy smartphones but this is a forty-dollar java enabled phone it's a lot cheaper than most of the other options out there and you just fill it out on them on your phone hit Send and the data is encoded in a text message and sent via SMS back to the main hub and this is this allows us to do a lot
of really interesting things so if you
go to the next slide one of these

things is stock level reporting so

envision that you have a bunch of health

posts sort of scattered around an area

and they all depend on a central health

office to distribute medicines to them

so that they can distribute them to the

patients in turn previously the system

was very badly coordinated some of the

health posts might run out of medicine

and patients wouldn't get the care that

they need now these health posts can

communicate with the central hub and get
the medicines that they need and all the

patients get care so if you go to the

next slide you'll see something else

that we're doing with frontline forms

which is patient view so you know Josh

showed that slide of all of the medical

records in the Democratic Republic of

Congo you know all of the red pieces of

paper on that on that shelf inpatient

view is built to replace that right

because it's pretty inefficient and we

really we want to provide them with a

better option so patient view is a

medical record specifically built for

the areas that we work in that has a
heavy emphasis on mobile so it has basic functionalities like a normal medical record you can collect data about patience you have patient profiles you have health worker profiles but it also has a lot of mobile features like you can send SMS between health workers you can collect data from the field using front line forms and it's really specifically targeted for some of the gaps that Josh was talking about earlier you know he was talking about how Dixon might have to walk 40 miles to deliver a report well now Dixon can just you know
type in on his phone hit Send that's all

he has to do and so it's really exciting we also wanted to bring mobile to other medical records as well so if you go to the next slide you'll see a screenshot of the openmrs messaging module so openmrs is a free and open source medical record system that's again built specifically for the developing world and it is used in a lot of the larger hospitals so we're talking about 100,000 patients or more and the messaging module allows openmrs to send and receive all kinds of messages so SMS
Twitter email and other stuff and it's going to be used in the future to send reminders so that health workers remember to vaccinate their patients and also coordinate messaging inside and out.

What you see here is text forms now. Front line forms is really good for low-end data collection but we wanted to drive the cost even lower so we created text forms which allows you to collect data using just plain text SMS sent from any handset with SMS capability and this is you know very very useful it was.
created specifically in the aftermath of

00:37:55,690 --> 00:37:58,760
the haiti earthquake when we partnered

00:37:57,849 --> 00:38:00,410
with google created

00:37:58,760 --> 00:38:02,390
it would allow hospitals to share data

00:38:00,409 --> 00:38:04,159
about availability and so a lot of these

00:38:02,389 --> 00:38:05,539
places all hospitals needed to know

00:38:04,159 --> 00:38:07,339
where they could transfer patients or

00:38:05,539 --> 00:38:09,320
like where had a neurosurgery room or

00:38:07,340 --> 00:38:11,720
you know what services were available in

00:38:09,320 --> 00:38:14,180
their area and so the hospitals could

00:38:11,719 --> 00:38:16,099
send SMS to text forms textem arms would

00:38:14,179 --> 00:38:17,929
parse this data into a machine-readable

00:38:16,099 --> 00:38:19,279
format and pass it off to resource

00:38:17,929 --> 00:38:21,230
finder which is a screenshot that you

00:38:19,280 --> 00:38:23,390
see here this is a web app that Google
mid and then the hospital administrators could go on and click on these green crosses and see data about these hospitals at a glance you know this hospital has 40 available beds this hospital has a pediatric ward that sort of thing and so it was really useful for that so that's all of the stuff that working on right now I want to talk about some of the stuff that really excited for for the future so if you go to the next slide you'll see a diagram of an algorithm that our friend Rob monroe at Stanford created to help us
automatically categorize and tagged text

messages and so this is really really helpful for health workers that might be sitting at a health clinic going through hundreds of messages a day it would be so useful for them because they have lots of important things to do it be useful for them to have a you know a tag that says administrative or urgent care required or you know medicine requests so that they can more quickly go through these text messages sort them out easier and get on with other things that they have to do another thing that we're
excited about if you go to the next

slide is sell a phone so this was

created actually by a fellow launch

innovator called named dr. oz jean out

of UCLA and what it is it's a piece of

technology that allows you to do to take

cellular level images of blood and other

liquids on the back of a camera phone

using only a fifteen dollar add on to

that camera phone and so what the way it

works is you put the blood on a slide

and you take can take a picture of it

with the phone and then it's sent via

SMS sorry back to the server the server
analyzes it and can detect things like malaria it can do viral load counts for HIV patients it can do cotan water testing if you're looking at a water slide and we're working to integrate this with patient view in bring point of care diagnostics in seconds for pennies to the developing world and the places that we work so we're really excited about that I'm going to now turn it back to Josh for some closing remarks right so if you jump to the next slide we have really aggressive plans for growth Dietrich's 21 he dropped out of college for a bit to work with us because he was
so passionate about the

I graduated a little bit early to sort

of get on with it we're sort of from the

Silicon Valley and from that mindset and

we approached scale and impact the same

way that I think Google and Twitter and

Facebook approach their user numbers in

their scale and so we want 250,000

health workers to use these tools in the

next three years to improve care for

millions of patients and programs like

launch let us do that they let us meet

corporate partners government agencies

local and international implementing
partners that we would never interact

with and so it’s sort of proven to us

that we’re participating in an idea

economy where what matters is the idea

and your ability to execute and you can

move from there so we’re really excited

about launch and the things that it’s

offered but we also wanted to direct to

directly engage the American people in

the mission and we were hit with a

statistic if you go to the next slide

every single day in the US half a

million mobile phones we just hit Earth

Day this is another message half a
million mobile phones but are being put into trash cans and desk drawers and every single one of these phones has hazardous material but it's also a value and so we launched the campaign if you go to the next slide called hope phones and the pitch is that you can give your old phone a new life on the front line of global health will take your phone or recycle it here in the US and we'll take the value of that handset the funding that we get from the recycling process and use that funding to provide to purchase mobile phones in local markets
for our community health workers so it's

00:41:42,650 --> 00:41:46,430
a green process here in the US we pay

00:41:44,778 --> 00:41:48,199
for your shipping both ways and the

00:41:46,429 --> 00:41:50,389
funding lets us fuel our mobile health

00:41:48,199 --> 00:41:51,858
initiatives abroad so this is a way that

00:41:50,389 --> 00:41:54,588
we can partner directly with the

00:41:51,858 --> 00:41:57,650
American people and I want to land with

00:41:54,588 --> 00:42:00,380
a comment that we really believe in the

00:41:57,650 --> 00:42:02,568
power of partnership especially around

00:42:00,380 --> 00:42:05,528
big challenges and we're really honored

00:42:02,568 --> 00:42:05,528
to be here thanks

00:42:15,429 --> 00:42:22,009
wow that's all I can say Josh and

00:42:20,300 --> 00:42:22,910
Dietrich that's some amazing work that

00:42:22,010 --> 00:42:24,500
you're doing and we're really

00:42:22,909 --> 00:42:26,149
appreciative for what you do to help
change the world thank you very much

next what to bring the administrators up to the stage to have a question and answer session so give them an opportunity to ask some questions and yeah in anything you want guys in astoria okay we'll stay right here all right now help facilitate this so anyone have any questions any students any anyone else don't be shy and we'll also put Carrie and Dan and Josh will put you guys on the spot in case their questions definitely so there may be something and
we do have questions from Twitter also

if no one knows why don't you yes I was

just wondering what type of grant sauce

on programs that you are looking at for

sustainable systems as we move into the

next year such that there's college

students can get involved on the summer

programs and also some fellowships and

grants so that we can be so that as they

were doing we can be out on the front

line trying to develop some work I'll

take a shot first we've got a couple of

things a number of things at NASA we do

a number of grants through our education
department that Leland oversees the
other thing that we're doing brand-new
is we're trying to fund 500 postgraduate or graduate grants in technology through our office of chief technologists for the 2011-2012 school year and we just put the solicitations on the street back before the holidays so there's something we have not done before and we're hoping to be able to do that and that that would be for study in any area of technology whether it's something that you heard josh and any other folk talk about or whatever I would just add to
that to say that US aid has a broad
range of programs as well for college
students and university students but
often geared towards PhDs and postdocs.

fellowships with our new office of science and technology Alex do you want
to put your hand up who runs alex Dagon
who runs that office and so we're really
trying to engage with and inspire more
college students in particular to get involved with development but from a science and technology perspective so

thanks for your question one of our followers how will this Agreement make a
difference to third world countries like
Ethiopia ah well all I can I'll give you an example for you know when we were in Nairobi Kenya with severe it's a probe it's an ongoing program between our two agencies what we're doing today is expanding the work that we do to include more education more science initiative so a company a country like Ethiopia will be touched and in fact dan I got to ask you is Ethiopia one of the 15 is it's one of the 15 East African nations that is already a part of the severe out of Nairobi and as I mentioned you know these are countries that are
stricken by alternately droughts and
floods but nobody ever put them together
before and when we were there this past
year they were actually helping them to
build drought and flood models so that
you know they could help to to
counteract the impact of both those
those tragedies in those particular
areas yeah hello my question is was
severe and will this information be
publicly available to those who would
like to use it for science Kerry you
were Dan yes the information all the
products that we create are publicly
available the data sets are available as well as the dry product so that's something that is very important so not only the initial users can take advantage of them but the science and research community can as well I think we have another okay go ahead over here yes I want to follow up on the previous question often universities in the US when we want to work with kind of parts the development world they in Africa we have difficulty getting support for them not for us because every time we go we are told that you must go to the USAID
mission and frankly it is not feasible

00:46:51,710 --> 00:46:58,250
for us to go for every project good a

00:46:55,219 --> 00:47:00,559
mission in Tanzania Kenya and so on and

00:46:58,250 --> 00:47:03,469
so on and frankly that has been the

00:47:00,559 --> 00:47:05,869
biggest single barrier towards their

00:47:03,469 --> 00:47:07,609
partnership with our counterparts you

00:47:05,869 --> 00:47:09,500
know in the development world do you

00:47:07,610 --> 00:47:12,769
have any specific way of addressing that

00:47:09,500 --> 00:47:14,449
problem yes so let me let me suggest two

00:47:12,769 --> 00:47:16,280
or three one is we launched a program

00:47:14,449 --> 00:47:18,379
under this administration called feed

00:47:16,280 --> 00:47:21,560
the future of which I know you're aware

00:47:18,380 --> 00:47:23,809
to help address global hunger and food

00:47:21,559 --> 00:47:25,880
insecurity and a lot of that is by

00:47:23,809 --> 00:47:28,159
supporting the training of agricultural
scientists figuring out how to use mobile phones to get market pricing for crops so that farmers can negotiate better deals with middlemen and a range of other things knowing how to interpret severe data in Ethiopia so that you can identify what likely drought patterns might mean for food production and market prices and respond accordingly those programs that we've through that we've rolled out hundreds of additional fellowships through programs like the award program with the an organization called the cgiar and with other direct
programs with us universities so it's a major priority and I was glad to see even in severe itself a component of that program being used to build capacity in institutions in sub-saharan Africa and South Asia and around the world because at the end of the day and this we've seen this before when USA and other partners got together and help support the Green Revolution decades ago to deal with hunger and in South Asia a big part of the legacy we left were thousands of agricultural scientists and trained scientists and professors at
universities and researchers and that's very much what we're trying to do so we've dramatically expanded those programs okay okay a little thick um I had a question um with USAID arm I know how you all were speaking on countries like Ethiopia in Africa um do you also help countries that are slightly more developed even become more developed like countries like nigeria and south africa who are slightly more developed than ethiopia but but not as developed as America like do y'all help countries like those also you know we do
we have programs and through launch and

severe and through the full range of our
work we work in more than a hundred
countries around the world you know

frankly in countries that have more
local resources we also ask countries to
expand their own investments in these
types of efforts so a lot of times our
resources are matching with increased
country commitments and we do that
because we know we get better results
that way and there's more accountability

on both sides so you know results in
accountability or a major focus for our
reform efforts at US aid so we are
pursuing that but with a real sense of mutual commitment okay we have time for two more questions we'll take the 10 line mill first one of our Twitter followers in Edinburgh UK how are you working with India on your programs and with the Indian space program we have a an umbrella agreement with the Indian Space Agency and i will tell you an interesting story they had a tremendous increase in funding this in 2010 when I've had my first meeting with the the Indian Minister of the Indian Space Agency he said they were spending 75% of
all of their funding on what they call society meeting societal needs the type of work that USAID and NASA are doing together while still intending to develop a human spaceflight program so NASA has a number of science agreements with with India under the umbrella agreement and I'm certain that USAID does something very similar we do we do absolutely and in fact during the president's visit just a few months ago to India we launched a series of programs that range from agriculture to education to helping
Unity's improve their governance and their transparency all of which leveraged technology and technology that was designed to be incredibly affordable and accessible very broadly to the hundreds of millions of rural its Indians that live there so that's a great question and thank you before we go to the last question me make a plea because we constantly hear people talk about you know NASA's work in in earth science if you will but you have to remember when Dan discovered the stuff at the beginning of the severe program.
he had the benefit of looking back at 30

1298 00:51:31,099 --> 00:51:37,429 years of earth science data that had

1299 00:51:35,210 --> 00:51:39,199 been archived and it's stuff that we

1300 00:51:37,429 --> 00:51:41,989 never I don't think anybody ever

1301 00:51:39,199 --> 00:51:44,149 envisioned that NASA earth science data

1302 00:51:41,989 --> 00:51:47,059 data provided by satellites and what we

1303 00:51:44,150 --> 00:51:49,099 call the a train would ever be put to

1304 00:51:47,059 --> 00:51:50,179 this type of youth so what's really

1305 00:51:49,099 --> 00:51:53,420 important and I would say to the

1306 00:51:50,179 --> 00:51:58,269 students back there you know just as

1307 00:51:53,420 --> 00:52:00,470 josh is done and go back to school ok

1308 00:51:58,269 --> 00:52:01,849 that's necessarily I'll tell you you

1309 00:52:00,469 --> 00:52:05,629 don't have to i mean you could be like

1310 00:52:01,849 --> 00:52:07,699 these rich guys but go back but but

1311 00:52:05,630 --> 00:52:09,740 think about the things that you can do
to make a difference in the world and you know there's an incredible amount of information that's available to help you make that difference we have no idea what's going to happen with the data that we accumulate over time so i would encourage you to you know come check with our two agencies and see if there's something you can do you say there's one more i thought i saw millions were more two more i think there's one way back there good afternoon my name is Marcelo sell mary oh i'm a freshman chemical engineering major at howard university
and my question is both agencies have
stressed students as the next wave of
operations so my question is what kind
of new programs new initiatives in both
agencies will be available for
specifically under graduates to help in
both agencies missions I know nASA has a
lot of internships currently available
now but what kind of new programs with
this partnership will be created to help
undergraduates real
be a factor in fulfilling the 2h these
missions because you stumped me well you
know I'm glad you asked that we actually
will this fall be launching at a series of very targeted programs for undergraduates in particular I think the truth is until quite recently there's been a sense that well you know you should be a graduate student or a postgraduate PhD and then you can learn this field and spend maybe 10 or 15 years really learning the field and then you start contributing and developing solutions I think it's josh is just sort of a personal embodiment of something of the counterfactual that you know that undergraduates have a huge amount to
offer and the reason I talked about MIT

in particular those were undergraduate

students and it's happening on college

campuses everywhere I go classes and

global development global health these

things are oversubscribed people are

sitting in the aisles standing in the

back and we want to create opportunities

for undergraduate students to really

figure out how can you be creative and

use the skills insights technology and

sense of confidence that you bring that

these are solvable problems that we can

develop business models or tools like

mobile medic or use geospatial data to
really help people see things a

different way and change the way they

think and you don't have to wait you can

do that as an undergrad and we're gonna

have a series of programs to support

that so we're working on that and we'll

get back to you in the fall but but

please do look at our website usa.gov

for more information about that and we

have a science and technology tag there

you can click on that there'll be more

right there but thanks for that question

so we're quick to the top hello I'm a

UCLA student i'm working at the State
Department I have a question about women in science and science women in science and technology how are you encouraging women and girls in the developing world to pursue more careers in science and technology I I wish we had Rebecca spike Kaiser here who we're very active with the first lady's with actually with the White House is an initiative on women in science and engineering as I'm certain USAID is but we we actually if you go to the NASA website there is a huge fee on women at NASA and I think it will give you some insight into the types of
00:55:24,608 --> 00:55:29,199
programs that that are that our

1398
00:55:27,010 --> 00:55:31,720
employees are engaged in I would

1399
00:55:29,199 --> 00:55:33,819
encourage you to try to find some of the

1400
00:55:31,719 --> 00:55:36,459
young ladies who are here and young is a

1401
00:55:33,820 --> 00:55:38,830
relative term okay I always get

1402
00:55:36,460 --> 00:55:42,338
complaints when I use that word hi I'm

1403
00:55:38,829 --> 00:55:44,440
64 years young so I am a young person

1404
00:55:42,338 --> 00:55:46,869
you're as young as you are in here but

1405
00:55:44,440 --> 00:55:49,179
as you get ready to leave here I'd

1406
00:55:46,869 --> 00:55:50,710
invite you to talk to any of the women

1407
00:55:49,179 --> 00:55:53,230
that you see here who may happen to be

1408
00:55:50,710 --> 00:55:55,329
working for either NASA or USAID and

1409
00:55:53,230 --> 00:55:57,880
have them tell you what it is that they

1410
00:55:55,329 --> 00:55:59,739
do but go to the NASA website for one

1411
00:55:57,880 --> 00:56:01,230
and look at women in NASA and I think

00:55:59,739 --> 00:56:03,189
you'll find it pretty interesting

00:56:01,230 --> 00:56:11,769
alright with that let's think the

00:56:03,190 --> 00:56:15,088
administrators for their time okay so

00:56:11,769 --> 00:56:17,699
next I like to introduce dr. Alex bagan

00:56:15,088 --> 00:56:21,579
dr. Dagan is the science and technology

00:56:17,699 --> 00:56:23,649
you can you sit back here sorry about

00:56:21,579 --> 00:56:25,869
the doctor Dagan is the science and

00:56:23,650 --> 00:56:28,150
technology advisor to the administrator

00:56:25,869 --> 00:56:29,710
of USAID in heads the office of science

00:56:28,150 --> 00:56:33,400
and technology within the new Bureau of

00:56:29,710 --> 00:56:35,829
policy planning and learning as the S&T

00:56:33,400 --> 00:56:37,930
advisor dr. Dagan serves as the key

00:56:35,829 --> 00:56:39,699
focal point for implementing the

00:56:37,929 --> 00:56:41,519
administrators vision to restore science
and technology to its rightful place

within USAID and ensure that USAID is

the global leader on employing science
technology and creativity to help solve

traditional and persistent development

challenges in novel ways he has a PhD in

master's degree from the University of

Chicago a law degree from the University of

California and the bachelor of

science degree from Duke University well

a lot of degrees there he is chosen

taught to do trick in a minute he is it

was chosen as an icon of science by seed

magazine in 2005 and if received
international recognition for his research and professional work please join me in welcoming Dr. Dagan man what an impressive day when one of the things that overly long intro on my bio probably didn't mention is the fact that I benefited from so many years of NASA data in terms of Landsat data and modis data and other imagery in terms of getting my own PhD done so thank you very much for all the work that's gone into that I remember meeting Woody Turner across a foosball table in England at a scientific
conference and finding out how much NASA does for researchers it's clear that NASA and USAID both do things that involve large additions goals they take on the grand challenges of our lifetimes.

they put humans into space connect the world to knowledge harvest and store energy from the Sun both agencies carry out vital missions for American people and protecting American homelands NASA creates technologies and innovations that keep Americans alive in the most extreme environments but we can apply those insights and those breakthroughs.
to solve some of the most challenging

problems at home in the developing world

and when NASA's technology is leveraged

against the deep international
development expertise USAID we can do

truly powerful and unprecedented things

we look forward to many more

accomplishments that match or suppressed

achievements of severe and launch in the

coming years and as President Obama

noted we are at a Sputnik moment we face

new global challenges and the solutions

to them are actually held by you the

students the next generation and your

counterparts in the developing world
it's pretty clear that despite the great brains exist within NASA and USAID all the solutions to critical development challenges will not come within the four walls of this institution or over at the ronald reagan building administrator Shahs remarks and our experiences as development professionals have shown that some of the most vital leading-edge work and development is done in university labs and research centers we believe that places like MIT zhdi lab the design school at Stanford NGOs like Palo Alto
design revolution and the global social

benefit in incubator at Santa Clara

University and countless others

are the engines of the most crucial

thinking and advances in international

development they advance an ethic of

multidisciplinary collaboration of

direct partnership with the developing

world and what's really interesting it

is student demand that is driving the

changes that we see across our

university campuses higher education is

also an unparalleled engine of

opportunity in the developing world as
well as it is within the United States

and USAID is working hard at better leveraging the power of university capabilities in science and technology for the for development through new partnerships that are underway the students you are part of this picture it isn't so impressive to see how Josh and Dietrich of metric mobile have shown you today what can be achieved a small team of students that started up metric medic mobile from scratch operating on a lean budget they have accomplished so much and they have so much more potential to
do that but no matter what your academic discipline is or was I encourage you to stretch your horizons a bit more our most vexing challenges in international development require solutions from creative multidisciplinary thinkers that means aspiring entrepreneurs and economist should probably know a little bit more about water infectious diseases and environment while mechanical engineers might want to delve into economics design or anthropology more deeply I'm sure the audience in this room has heard this quote many times longer repeat it because it's really
applicable to what we're doing in the developing world as President Kennedy said in his address at Rice University.

we chose to go to the moon in this decade and not to do other things not because they are easy but because they are hard because that goal will serve to organize and measure the best of our energy and skills because that challenge is one we're willing to accept one we're willing to postpone and one that we intend to wind in others to this administration and these administrators have chosen to also take on some of the
hardest challenges in the world in development they have chosen to be bold they have chosen to do big things and to paraphrase President Kennedy again it will not be one man that will be doing these challenges but it'll be an entire nation for all of us must work to put them there the same applies to the goals we do just this day with that I invite our two esteemed administrators to retake the stage to sign the MOU and thank you and test it thank you thank you ladies and gentlemen that concludes the program
you