Shuttle and Station Life Science Experiments

Laura Sarmiento

Ian Mair> So... What is your occupation Laura?

<Omar Garcia> um im kind of lost how does this work

<Laura-NASA> I am an Experiment Support Scientist (ESS) for the International Space Station Medical Project (ISSMP)

> Hello and thanks to Laura Sarmiento who works at NASA

<Laura-NASA> It is my job to support the life science experiments that are performed on station and shuttle

<Ian Mair> Omar... You type questions for our honored quest, Laura, and she answers.

<Brook Sell> what exactly are some of the experiments you have worked on?

<Laura-NASA> I write requirements documents, train the crew members (astronauts), sit in a back room to mission control when experiment operations are happening , act as a liason between the principle investigator of an experiment and NASA a

<Laura-NASA> I work with an experiment called SWAB which stand for surface water and air biocharicterization

<Laura-NASA> we like acronyms at nasa :)

<Ian Mair> ahaha.... I can tell!

<Laura-NASA> SWAB takes environmental samples of surfaces, the air and the water systems on the ISS to make sure there arent microbial contaminations

<Brook Sell> thats cool..

<Ian Mair> So what is your job like on a day to day basis?

<Laura-NASA> Its hard to say really since each day is definitely
different

<Sarah Stephen> So what do you do when you find a contamination?

<Brook Sell> what are some of the things that you have found using
SWAB, anything abnormal to our conditions on Earth?

<Laura-NASA> it depends on the contamination...so far on the ISS
we havent found anything unexpected or bad

<Omar Garcia> your job sounds cool how did you get started

<Laura-NASA> I started as a HAS student just like yall

<Ian Mair> Cool! How was your experience with H

<Ian Mair> AS

<Miriam A. Bustamante> really wow that is great to hear so what do
you do now ?

<Omar Garcia> really lol

<Laura-NASA> after HAS i applied for the co-op program at JSC
and did 5 semesters fo work

<Laura-NASA> I loved the HAS experience

<Miriam A. Bustamante> what kind of work did you do ?

<Laura-NASA> make sure to take in everything, but also have fun!
you will b/c folks at NASA are great

<Miriam A. Bustamante> Is it intimidating ?

<Laura-NASA> No, people here are more than willing to answer
questions you have, so dont hesitate to ask

<Omar Garcia> how long have you been working for nasa

<Laura-NASA> I started co-oping in 2004.

<Laura-NASA> i have been full time for almost a year and a half now

<Omar Garcia> is that kind of like an internship

<Ian Mair> What did you do during your time that you co-oped with NASA?

<Laura-NASA> Miriam- I help support the life science experiments that fly on shuttle and station

<Sarah Stephen> Did NASA hire you immediatly after your internship?

<Laura-NASA> yes, co-oping is like an internship, the difference is that you come back and do several tours.

> Where did you go to college, udergrad and/or grad?

<Laura-NASA> tours are semesters, usually at least 2 long semesters (fall/spring) and then a couple of summers

<Miriam A. Bustamante> wow thats great it must be interesting

<Laura-NASA> As a co-op I worked in the Human Adaptation and Countermeasures Office on experiments regarding cardiac diagnostics and vestibular systems (inner ear), i also worked in Space Medicine, and in Astromaterials

<Miriam A. Bustamante> Laura what part of Texas are you from ?

<Laura-NASA> I graduated from UT in Austin with a BS degree in neurobiology

<Laura-NASA> I am from Houston

<Miriam A. Bustamante> So how exactly did you come into contact with the internships did you apply or were you selected?

<Laura-NASA> I applied. When yall come to JSC for the week this summer you will learn alot about the other education programs NASA has to offer

<Omar Garcia> what would you recommend we do to become future Nasa employees

<Laura-NASA> Omar--i would suggest study something you love to do and be good at it.

<Miriam A. Bustamante> Was the application simple or were there many standards for admission?

<Omar Garcia> was it hard to get into Nasa or did ur intership facilitate the process

<Laura-NASA> Well, the co-op program is pretty competitive, but your experience with HAS will definitly help you out

<Laura-NASA> A majority of new hires at NASA come from the co-op program

Laura-NASA> but, there are also a lot of contractor companies. I am with a contractor company right now actually

<Miriam A. Bustamante> Really so what other subject areas can one apply for the co-op program?

<Laura-NASA> And participating in the co-op program helped me get the job i have now

<Omar Garcia> in what year of college did you apply for the co-op program

<Laura-NASA> the JSC co-op program hires primarily students pursuing engineering, science and business degrees

<Laura-NASA> but NASA has a range of jobs so look around. and the contractor companies have internship and co-op programs too

<Miriam A. Bustamante> Oh thnk you that helps I want to major in sciences so that helps.

<Laura-NASA> I applied my freshman year and started co-oping sophomore year

<Miriam A. Bustamante> thank you sorry

<Ian Mair> wow. How does that work with the college? do you recieve credit for co-oping?

<Patrick Thornton> Laura, what contrator company are you with right now?

<Laura-NASA> each school has different rules about co-oping so whichever university you choose to go, make sure to go to their career office as soon as you can to learn the process

<Miriam A. Bustamante> really ? sophmore year wow thats awesome ! was this because you were ahead in college or just really good at you subject area ?

<Laura-NASA> I work for a company called MEI Technologies. I am a subcontractor to Lockheed Martin and Wyle Laboratories

<Ian Mair> How did UT deal with the co-op program?

<Omar Garcia> so you two jobs then

<Miriam A. Bustamante> You are contracted with lockheed martin ? wow so what work do you do for them ?

<Laura-NASA> I started co-opin earlier than normal b/c i had more hours to do so. I had to be a jr. standing to co-op and after i was accepted by NASA i spent the summer before sophomore year making sure i had the right amount of credits

<Laura-NASA> At UT the engineering school has a well established and great co-op prgram

<Laura-NASA> the natural science college doesnt do co-ops as much as engineering but still a good system

<Omar Garcia> they would offer a coop in aerospace engineering right at UT

<Laura-NASA> yes. UT has lots of aero eng. co-ops. And NASA takes lots of aero eng as well

<Patrick Thornton> I'm visiting UT next weekend, is there somewhere I could visit on campus to get more info about co-op?

<Laura-NASA> yes.

<Miriam A. Bustamante> So what work have you done with lockheed martin ?

<Laura-NASA> I dont remember where the specific enginering career office is, but there is a general career office in Jester

<Ian Mair> How did you get interested in your current occupation?

<Laura-NASA> SWAB is one of the experiments i work with. I also work with an experiment that is going to measure the seated height of the astronauts in space. Astronauts grow taller in space and we are looking at how much they grow

<Laura-NASA> Ian- i have wanted to be an astronaut since i was

about 4. the space bug bit me early :) and I have always loved science

<Miriam A. Bustamante> really astonauts grow but i thought that they loss calcium concentration in thier bone does this mean that thier cartilege grows ?

<Jason Laico> dosent gravity also affect growth in space?

<Laura-NASA> The height growth comes from a lenthing of the spine. the space in between the vertebrae spreads out because gravity isnt compressing it

<Omar Garcia> so are you located at the Nasa location in houston or the other ones

<Laura-NASA> also the curvature of your spine comes from gravity on the ground, so that also lengthens in space

<Miriam A. Bustamante> oh wow so its the vertibrea does this affect them when they are placed in 1g gravity again?

<Laura-NASA> I am at JSC in Houston

<Joanna M. Schiefelbe> So are there any experiments being done about how gravity affects diseases, like scoliosis?

<Laura-NASA> THe compression from gravity brings them back to their original height when they return to the ground

<Laura-NASA> Most of the othere NASA centers also have co-ops and internships

<Miriam A. Bustamante> are there currently any NASA experiments on arthritis ?

<Laura-NASA> each NASA center works on different areas

<Laura-NASA> hmm, I am not sure if there are any experiments that look at arthritis. We do have experiments that focus on bone loss and muscle atrophy

<Omar Garcia> would aerospace engineering be in the Jet Propulsion Labaratories in California

<Laura-NASA> yes

<Joanna M. Schiefelbe> One would think that microgravity would be good for people with back problems...

<Miriam A. Bustamante> so what other projects are you currently involved with ?

<Crystal Alsip> Will microgravity really cure back problems? Or help ease it?

<Laura-NASA> an aero eng. would be able to work at probably pretty much any of the NASA centers

<Laura-NASA> I am not sure on the back problem thing.

<Crystal Alsip> That's interesting.

<Laura-NASA> I also work on a project that has crew members go through a series of tasks that mimic mission tasks that crew would perform after landing on the moon or Mars

<Laura-NASA> the go through those tasks pre and post flight

<Laura-NASA> to see the effects the flight has on their ability to perform the tasks

<Crystal Alsip> Would any of us do a simulation as if we are on Mars?

<Laura-NASA> the tasks are things like climbing a ladder, opening a

hatch, lifing objects, etc.

<Omar Garcia> oh ok lol thank you so do you plan on venturing into space if the oppurtunity arises

<Miriam A. Bustamante> are you going to become an astronaut ?

<Laura-NASA> Crystal- do you mean as part of a job at NASA?

Yes, there a lots of different simulations for Mars missions. both for the hardware (like the rovers) and for humans (like having people live in a vacum chamber to test the physcological effects)

<Laura-NASA> I dunno, I havent taken being an astronaut off the table. But the work I do now is rewarding to me, so I will have to see what the future holds

<Ian Mair> What is the most challenging part of your current job?

<Laura-NASA> Ian- good question.

<Miriam A. Bustamante> Laura thank you very much for all the wonderfull info input, sorry i have to leave but dinner calls and i am hungry .

<Laura-NASA> I work on several different experiments so keeping them all straight took some getting used to.

<Laura-NASA> thanks Miriam!

<Omar Garcia> do you have time to do other things than work

<Crystal Alsip> I dont know as a part of a job, but I was just interested if we will experience the tasks like the astronauts do.

<Laura-NASA> Also, I interact with a lot of differnet people from a lot of different groups all with different personalities. I think that applies at most jobs, but its definitely a skill that takes pracitice

<Crystal Alsip> What do the NASA jobs range from?

<Erin Carmey> How are the interactions with other people?

<Laura-NASA> Crystal--- there is an education program NASA has called the reduced gravity program. this is where students can propose a test to be done on the microgravity aircraft

<Ian Mair> Communication is always tough. What are some of the necessary skills to be successful in your occupation?

<Laura-NASA> this aircraft flies in parabolas where at the top of the parabola, the passengers experience about 30 sec of weightlessness.

<Laura-NASA> i participated in this program in 2004 and it was amazing. def the closest thing to the real thing astronauts fell

<Laura-NASA> feel*

<Crystal Alsip> I always wanted to experience microgravity. ^^ But not going up into space.

<Laura-NASA> The people at NASA are fantastic. Everyone loves their job and it really shows

<Omar Garcia> Thank you for taking time out of your busy life to talk with us i appreciate it Good luck with your experiments

<Erin Carmey> that must make the enviornment so enjoyable

<Laura-NASA> In my job its definitely importnant to be a team player

<Laura-NASA> that goes for all of NASA really, since it takes a whole lot of people working together to put people in space

<Laura-NASA> thank you Omar! Good luck to you too in your

career

<Laura-NASA> Erin- it does. My coworkers are great

<Erin Carmey> What do you need to be a good "team player" at NASA?

<Ian Mair> What course work or preparation do you feel was the most helpful in preparing you for your job?

Laura-NASA> A good team player can mean a lot of things since a team is comprised of different functions. But I have found it helps to keep an open mind

<Laura-NASA> and keep an idea on different perspectives

<Erin Carmey> good advice! (Thats something I need to work on lol)

<Laura-NASA> sometimes you need to think big picture and sometimes you need to think more local. and sometimes you need to think both.

<Joanna M. Schiefelbe> Here's some random questions: do you like coffee? If so, what kind do you like best? Does it help in your job? :)

<Laura-NASA> its a good skill to have, and one thats a constant thing to keep working on. cause its easy to forget

<Erin Carmey> okay

<Laura-NASA> good question Joanna :) I like coffee, I dont drink it every morning but sometimes

<Laura-NASA> when we support operations we have to come in at early hours

<Crystal Alsip> Do any of the jobs consist of Astronomy/

Astrophysics?

<Laura-NASA> the station runs on GMT time which is about 5 or 6 hours ahead of us. so the start of their day is about 1AM our time

<Laura-NASA> so coffee def helps then!

<Joanna M. Schiefelbe> Wow!! Talk about an early morning!!

<Erin Carmey> And I thought I got up early!

<Laura-NASA> yes, NASA has a lot of astronomers and astrophysisits

<Crystal Alsip> Awesome, thanks!

<Ian Mair> On the other end of the spectrum.... What is the most rewarding thing about your job?

<Laura-NASA> oh man...there are too many things!

<Ian Mair> hahahah... you have a good job then!

<Laura-NASA> I think sometimes i can get a little jaded because I do it every day, but sometimes i step back and think wow, I really do work at NASA and I really am helping people live and work in space

<Laura-NASA> This is a passion of mine so it is definitely rewarding. thats why I feel its very important to follow a passion you have

<Ian Mair> Yeah. You get to do what a lot of others (like ourselves) only dream of doing!

<Joanna M. Schiefelbe> That's so cool... I want to major in Aerospace Engineering in college, and eventually become an astronaut. Space has been my passion for a while now...

<Laura-NASA> :) One day you will be there too if you want it!

<Laura-NASA> Joanna thats great!

<Joanna M. Schiefelbe> More than anything!!

<Joanna M. Schiefelbe> Well, nearly anything...

<Laura-NASA> aero eng has a lot of different possibilities too.

<Laura-NASA> there are many different areas you can work with that degree

<Ian Mair> Same her Joanna! On the want part and the desire to become an astronaut!

<Joanna M. Schiefelbe> Yeah, I just found out I get to help a professor at A&M Kingsville program a robot!!! I'm so excited!!!

<Laura-NASA> yall are also the perfect age to be part of the astronaut class that goes back to the moon and onto Mars!

<Joanna M. Schiefelbe> YAY!!!

<Patrick Thornton> Really? that'd be amazing to go to Mars!

<Erin Carmey> I'm looking forward to just having the opportunity to work at NASA. (And possibly become a flight controler)

<Ian Mair> Thats what I'm looking for!!!! Been a dream since I could remember!

<Laura-NASA> :)

<Laura-NASA> Erin- what area of flight control are you thinking?

<Mark Herrington> What kind of things does an aerospace enginer

<Laura-NASA> I am happy yall are so passionate! You will def have a great time with the HAS program!

<Laura-NASA> Mark- aero eng at NASA can do anything from designing rockets to training astronauts to flight control

<Erin Carmey> Laura- I'm not so sure...lol it's in-between choices.
Hopefully HAS can help me narrow things down.
<Mark Herrington> that cool
<Laura-NASA> HAS will def give you guys a good look at the
different things that go on at NASA
<Laura-NASA> and give you a sense of what it is like to work here
<Joanna M. Schiefelbe> Do you know what the differences between
aerospace and astronautical engineering are? I'm guessing the
fomer has more to do with machinery. ^.^
<Erin Carney> I can't wait!
<Ian Mair> I know! I'm so excited!
<Laura-NASA> Hmm, I am not sure Joanna. I know similar degrees
are called different things at different schools.
<Erin Carney> The best part is chating with poeple that are intrested
too! I'm so glad we get to do this!
<Laura-NASA> Thats what I always enjoyed about the co-op
program as well as HAS. you meet so many people who have the
same interests
<Erin Carney> It's awsome!!
<Laura-NASA> A lot of my closest friends I met through HAS and
co-op
<Erin Carney> Did you keep any friends from high school?
<Ian Mair> Really??? That is incredible.
<Laura-NASA> yes.
<Laura-NASA> I still talk to a lot of people I went to high school

with.

<Patrick Thornton> That's great, I'm really excited to get to work with others with the same passions mine.

<Joanna M. Schiefelbe> Does anyone know how long HAS has been around?

<Laura-NASA> 10 years now

<Joanna M. Schiefelbe> Oh, yeah. It says so on the shirts...

<Laura-NASA> it started in 1999 and the first summer program was in 2000

<Patrick Thornton> Did you start focusing in on working at NASA in high school or more during your first years of college?

Laura-NASA> Patrick- a little of both. I learned about all the education programs at NASA when I was at HAS. so i started thinking about what I wanted to do

<Laura-NASA> and in my freshman year of college, I made sure to go to the career offices to see what I needed to do

<Joanna M. Schiefelbe> How long did it take you to get your degree?

<Laura-NASA> I graduated in 5 years. Co-oping does mean it takes longer to graduate, but it is worth it.

<Nathan Hughart> What all will we be doing at the summer program?

<Laura-NASA> Co-oping gives you the real sense of what the job is and what you do and dont want to do.

<Nathan Hughart> I know we'll be doing some projects....but outside of that....I dont really know

<Laura-NASA> the summer program will be busy for yall, but lots of fun!

<Laura-NASA> Yes you work on several projects but will also get a chance to see some of JSC and hear some fantastic speakers

<Nathan Hughart> Yeah....

<Nathan Hughart> mk

<Mark Herrington> what level of degree do you have

<Erin Carney> Like who? Do you kow?

<Erin Carney> about the speakers that is...

<Laura-NASA> Mark- I have a BS degree in neurobiology