

Yuk-ting (Joyce) Lau
Biology major, Class of '06

Research Mentor: Prof. Bassem Allam,
School of Marine & Atmospheric Sciences

Researcher of the Month - March 2006

About Joyce

"Field work, that's the best thing about marine sciences...the field work!" The enthusiasm, energy and passion which Joyce brings to her research is something she herself could not have predicted two years ago when she started doing routine cell counts and working in the recently established research group of Professor Bassem Allam of the [Marine Sciences Research Center](#) (MSRC). Working in Prof. Allam's lab provided many opportunities for Joyce to develop lab skills, and learn techniques she had never used before, as she became acquainted with the care and keeping of clams. Last summer, Joyce received URECA summer funding to investigate the role of marine aggregates, an ensemble of particulate organic material known as "marine snow", as a reservoir for marine bacteria — particularly focusing on the pathogenic *Vibrio* species. She plans to present her project at the upcoming URECA [Celebration](#) on April 26th. Now, as she nears graduation and is weighing her options and offers of graduate programs in marine sciences (a field in which she plans to complete a Ph.D.), Joyce reflects how:



. . . the experience really changed me. It gave me a goal to work towards. I knew what I wanted. After working in the lab. *I knew this was what I wanted to continue to do.* It also helped a lot to have an advisor who knew you personally and who really cared. I'm in the Bio department. And I don't want to complain. It's a really big department. And just like the school. It's a really big school. What do people complain about? They complain about how it's not intimate, there's nobody who really knows you, you get advice but you go, they just look at your file, and they don't remember you. But the thing is, if you make contact with somebody and you have a mentor, they'll help you. If you want to apply for a scholarship or graduate school, the whole process...or just plain old advice (what kind of classes should I take?)... that sort of thing, If you ever feel like you're lost..it really gives you somebody to talk to.

In addition to her mentor's positive and decisive influence on her future career, Joyce credits her mother, an environmental scientist, for first getting her interested in nature—by taking her hiking, and bringing her on trips to Colorado, Arizona, and Nevada, places which inspire a fascination with the natural world. Born in Hong Kong, Joyce has resided in New York since the age of five, and attended Stuyvesant High School. She loves her "niche" here in the MSRC yet is eager to explore new things, and may possibly be bound for Antarctica for her next research project — following graduation from SBU. Below are some excerpts shared from her interview with Karen Kernan, [URECA](#) Director .

The Interview

Karen: What can you tell me about your mentor?

Joyce: He's so great. He's so helpful. He's always giving me advice on things, and he's always looking out for my best interests. . . Back [when I first started in 2004], I asked him to help me on this project for class. It was for this other class, there was no obligation to do it at all. But he was more than happy to take time out to do it with me. He's a really good mentor; he really is. I've talked to other people now in graduate school. And you can kind of tell advisors who really care about students. And he's the type who really cares about his students. He's always trying to help me. . . If I have a problem, I can ask him. What I really like about him I guess is that I can discuss problems with him. He really respects what I say. He treats me as one of his grad students. He doesn't treat me as someone doing minute work or something like that. When I raise an issue, he'll think about it and he'll really consider it.

Right now, for instance, I'm doing a data analysis [project]. . . There are so many ways you can do it. It's hard to say what's the right way if you've never had experience in doing it before. So I bug him with questions all the time. He doesn't mind at all. . . He really wants to help. It's so nice.. Sometimes you might feel bad talking to your PI because you know they're very busy, you know they're always writing grants, proposals, stuff like that. But I just knock on his door, and ask, "Hey, are you busy?" "Yeah, but it's OK. I've always got time for you."

What's it like working in the Marine Sciences Research Center?

It's pretty different, it's almost like a separate campus because you've got to take the bus. 10 minutes on the bus! But what I really like about Marine Sciences is that I've sort of found my niche there. It's sort of like a small college in a large university for me. I talk to my advisor, but I also know other people there..I speak to them. Everybody is just really nice there.

Do you have a favorite research experience?

Being out in a boat is amazing. . . . Over the summer I was able to go with one of the grad students out to Raritan Bay, by Staten Island. We went with DEP [Department of Environmental Protection]. . . It was really cool. The graduate student had put out bags of clams to test QPX [Quahog parasite unknown, a clam pathogen] transmission. So it was out for a year already, and we had to find it. We had to go through the GPS thing. It was really fun. . . When we took it out. . . opened the bag. . . you can't be afraid of things being mucky. You can't just expect to find your clams. You're going to find crabs, shrimp, fish, worms, sea squirts, all sorts of little things. It was a lot of fun! . . . The best thing about marine science is you get your lab work but you get your field work too!

How did you first get involved with bivalve research?

It was my sophomore year, and I had recently become interested in marine biology. . I had taken a class, and thought, wow, there's a lot of really cool things going on in it. Then I went on the URECA website. Professor Allam had posted an undergrad research opportunity on the URECA bulletin board. When I initially went [to his lab] he wasn't even there. . He was apparently out for a meeting. I was able to speak with somebody who also works in the same lab. [Finally then I met up with him. My mentor was a new professor. Maybe that's why he was looking for somebody. It's kind of weird 'cause I've been the only undergraduate there the whole time. I've done a whole bunch of different things. I've been basically working with graduate students with their projects. Learning different things. And then, last summer, when I did the URECA thing, that's when I came up with my own thing.

Did you have much experience when you started in the lab?

No, I had no experience. But they were really nice. When I first started...[Prof. Allam] had just started [and] he was around in the lab a lot. So he was able to teach me some stuff. Initially I did some cell counts. That's what I started with—cell counts. But I stuck it out, and I came back the next semester and then I got some more interesting things to do!

It [seemed] a little boring [at first], because it was the only thing I kept doing. At the same time, it gave me a chance to learn what the cells look like. To figure out..these are bivalve cells which look different than human cells. It happened to work out really well in that I was fortunate to help develop techniques in new projects being started in the lab, projects that were concurrent with my developing URECA project. . .It was the first time we had starting to work on some of these projects in the lab, so we had to really develop the techniques . . . I knew what [my professor] was going to be [working on] in the summer.. And I took a microbio class right before that to prepare myself for microbio work. . . I would discuss with him my ideas, what could we do, and different perspectives we could take. Over time, my mentor and I sort of developed the project [for URECA]....My past experience definitely helped. Some of the stuff that was pretty basic I was able to do without having to learn it again.

Had you applied for URECA summer funding before spring of 2005?

I applied for the first summer [2004] and then didn't get in. And I then re-applied with a different project. I don't know if it's commonly done...I had more background by that point. The first time I applied it was the summer of my sophomore year. I had just started, it had only been a year. By my junior year, it had been 2 years. I definitely gained experience.

Will you be presenting at next spring's URECA Celebration?

This is actually my first year presenting. Last summer-- that was my first official project, my own project. In the past years I've been working with grad students. This summer was the first time I had my own project.

How would you say research has enhanced your education?

I think it's definitely enhanced my education. Because what I like to do is take classes in parallel with what I'm doing. So say I'm doing microbiology work, I'll take a microbiology class first, and then do the work. Or I will take a statistics course, and then I'll use that in conjunction with figuring out the statistics that I need to for research. One time I took a Bio 201 class. There's an organismal project that you have to do. So I picked mussels. And I asked my PI to help me come out with a project for that class. We took mussels and we placed them in different temperatures. We wanted to see the phagocytosis rate. Even though I had very simple skills (like counting cells), I was able to utilize that to help me to see whether the phagocytosis rate changed. . . I thought that was really cool to be able to incorporate that.

Do you feel that the research experiences you have have helped prepare you for graduate school?

Definitely. I've been applying to graduate school. The research experience I've gotten because I started my sophomore year has really given me an edge on my application. Recently I went to LA to interview for USC. It's a PhD program. Honestly, everybody there had experience. There is no way you could have gotten there without experience. Everybody had done something. I don't even know how I would get into grad school without experience. Because people are going to wonder: how do you know you want to do this if you've never tried it before. It really, really helped.

What advice would you give to other students interested in getting involved in research?

I would say, find someone you're interested in and then just go and ask them. Because so many times if you just show that you're really enthusiastic about the subject, and you really want to be there. . . If you're interested and you find someone who's interested, just go for it. Because really, people are so nice, they'll just take you in. I really think also that you should start early. Because the experience really changed me. It gave me a goal to work towards. I knew what I wanted. After working in the lab... I knew this was what I wanted to continue to do.

Anything else you'd like to add about research?

I guess I'd say that people should really try it. When I tell people I do research, they say "It's so boring..why would you do that? . . . You're in lab all the time?" [But] I love it. I'd say for people who aren't maybe thinking about research already, I'd say give it a chance. Because you'll really be surprised. Research is sort of for people who are curious. If you're curious about things, and you want to know why it happens, it's your first indication that you should consider research. And I guess, another thing is.. if you like to do something different everyday, then consider research. You're doing similar things, yet it's like getting a variety package because you're also doing so many different things. You may work on this for a couple of months . . and then maybe after a year. you're might be going on to do some different project Sometimes you try and do something and it may not work out: You think, oh man, why don't I have results? This isn't what I predicted in my hypothesis! And sometimes it works out even better that way. It gives you more to work on, raises more questions. You realize it's okay..more future projects!

What is the most frustrating or most difficult aspect of doing research for you?

It's tough as an undergraduate to balance your coursework. But as far as the time involved..you're going to find that you love it so much that you're going to want to be there, ALL THE TIME! So that's not really a problem. If it feels like it's a job and it's a duty, then it's probably not right for you. But if it feels like you want to be there all the time, and you want to be in the lab because you have something you want to do...then it's definitely for you!