

Heather Kuiper, Doctoral Graduate Student, LPI,  
Oxygen Club of California Young Investigator Recipient 2009  
<http://lpi.oregonstate.edu>

Introduction/Conclusion: Naomi Hirsch, Environmental Health Sciences Center

Host: Sandra Uesugi, Environmental Health Sciences Center

Guest: Heather Kuiper, LPI, Oregon State University

[THEME MUSIC]

HIRSCH: Welcome to LPI on Health, a podcast series to inform you about the recent micronutrient research and events coming out of the Linus Pauling Institute at Oregon State University. For more information, visit our website at <http://lpi.oregonstate.edu>.

[THEME MUSIC]

UESUGI: This is Sandra and I'm here with Heather Kuiper who just recently won the Oxygen Club of California Young Investigator Award at the recent Diet and Optimum Health Conference in Portland.

Heather, can you tell us a little bit about your research that you presented for the Young Investigator Award?

KUIPER: I'm studying biological compounds that are breakdown products of fatty acids in the human body and finding higher levels of these compounds in smokers, but a decrease after smoking cessation. So we think these compounds have potential as biomarkers of oxidative stress.

UESUGI: Are these things you only see in smokers or do you see them in everyone?

KUIPER: They are present in everyone, but we think they have some potential to be health markers. It seems like in a more diseased state there are higher levels of these compounds.

UESUGI: How did you do the research on this?

KUIPER: I synthesized each of the compounds that I work with and analyze them using liquid chromatography tandem mass spectrometry.

UESUGI: What else are you working on with your research?

KUIPER: It's pretty much being able to analyze the specific levels of each metabolite. We did a study in a group of rats where we dosed them with carbon tetrachloride, which is a model of oxidative stress and were able to see significant increases in the levels in the rats that were dosed compared to those that were not.

UESUGI: Why is oxidative stress a health concern?

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KUIPER: Well, it's something that builds up in the body over time and decreases the ability of the body to remove toxic compounds.

UESUGI: What other future studies are you going to do with your research?

KUIPER: I'm actually trying to conclude my research at the moment. I'm trying to wrap up the smoking study that I'm working on.

UESUGI: So you're almost finished?

KUIPER: Yes.

UESUGI: And what are your plans after you finish?

KUIPER: I'd like to find a job or a post-doc where I can continue to use mass spectrometry as a tool to study biological problems related to human health.

UESUGI: Are there any health problems that you hope to tackle in your research?

KUIPER: I would be interested in getting involved in Alzheimer's research.

UESUGI: How did you come to be involved in this type of research? Is it something you were interested in at an early age or something you discovered later on?

KUIPER: I really enjoyed chemistry in high school and thought that was a good direction to go in. As I was looking for colleges, I also wanted to be able to apply chemistry to human health and thought maybe biochemistry would be the way to go but realized that no, chemistry was the best approach. I did my undergraduate work in chemistry with a focus in biochemistry. And then looking for graduate programs, found Dr. Stevens and that happened to be a very good fit.

UESUGI: Did you have any opportunities to do research as an undergrad?

KUIPER: I did. I worked on fatty acid content of fish and other lake species.

UESUGI: Where did you do your undergrad?

KUIPER: I did my undergrad at the State University of New York, College of Environmental Science and Forestry at Syracuse University.

UESUGI: Wow! (laughs)

KUIPER: (laughs) It does have the longest name of any college in the country.

UESUGI: As a grad student in the Linus Pauling Institute, what do you enjoy about being affiliated with the institute?

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KUIPER: I enjoy the ability to learn about all sorts of types of research beyond what's going on in my own lab and being able to collaborate with or ask questions of the other researchers in the institute.

UESUGI: Have you had an opportunity to work directly with some of the other investigators?

KUIPER: Sometimes when I have questions about mass spectrometry, I might go up and ask Alan Tayler in Maret Trabor's lab or I was helping John Clark in Emily Ho's lab with some synthesis that he was doing and getting him into quantitation in mass spectrometry.

UESUGI: Interesting! What do you like to do for fun, Heather?

KUIPER: I like to play softball and go for hikes with my dogs.

UESUGI: Summer's coming up so you should be able to do that soon.

KUIPER: Oh yes!

UESUGI: Well thanks, Heather, for talking to us today!

KUIPER: Thank you!

[THEME MUSIC]

HIRSCH: Thanks for tuning in. This podcast was produced in collaboration with the Environmental Health Sciences Center with funding from the National Institute of Environmental Health Sciences.

On behalf of everyone at the Linus Pauling Institute, we wish you optimum health. Have an awesome day!

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