



## Profiles of Physicists



**Eric Lee**

**Manufacturing Tools Project Leader  
SEMATECH**

**Education:**

B.S. -- Physics; Massachusetts Institute of Technology

**Job Description:**

Manufacturing Tools Project Leader, developing plasma-etch processes for semiconductor manufacturing, which delineate patterns on the silicon or film on the wafer.

**Advice to Students:**

"It's very important to be technically competent. It's also very important to have people skills. You've got to be able to write. You've got to be a salesman, because your job requires you to sell colleagues on your ideas."

**Video Transcript 1:**

"So what I do, in part of that chip-making process, is design physical processes like plasma etch, for instance, which is what I do, to delineate patterns in the silicon or whatever film that we're putting down -- it could be a polymer; it could be a metal. And this is part of a multi-layer process that results in the end computer chip. At the moment, we've got some work where we're trying to help one of our customers, a production fab, transfer in a product that we've proven here in a pilot line situation. So we have designed process, we're gathering the data now to transfer to them, so that they can take and try to duplicate that data, and scale up the process to thousands of wafers started every week."

**Video Transcript 2:**

"It's very much a team environment. This industry doesn't have as much of the desktop science as you'll see in a lot of physics labs. It's very important to be technically competent. It's also very important to have people skills here. You've got to be able to write. You've got to be a salesman, because your job requires you to sell colleagues on your ideas. So you must be able to articulate them, you must be able to produce the data to support it, and you must be able to get along with these people who are instrumental in bringing it to success. My part of the process is just a small piece of the line. To make a finished computer chip, or at least from bare silicon to the time it walks out of our door, can be 150 different process steps. And mine will be a small portion of that. So you've got to be able to work in a team environment. And you're also trying to be aware of the interactions that may not always be obvious."

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