



Sloan Career Cornerstone Center

Profiles of Electrical Engineers and Computer Scientists



Gary L. Baldwin

**Director, Solid-State Technology Laboratory
Hewlett Packard Company
Palo Alto, CA**

Education:

B.S. - Electrical Engineering, University of California at Berkeley
M.S. - Electrical Engineering, University of California at Berkeley
Ph.D. - Electrical Engineering, University of California at Berkeley

Job Description:

Director of the Solid State Technology Laboratory, responsible for about a hundred people doing research on solid state technology with materials, devices, device physics, circuits, and lights.

Advice to Students:

"Learn how to get up on your feet in front of friends or strangers and make a statement about what you're working on, what you believe in, or a direction that you'd like to see a project go in."

Video Transcript 1:

"In general, we try and go after people who have a broad set of personality and communication skills. Technical skills are almost taken for granted. We go through an interview process which involves a seminar, a student candidate gives a talk, and then a full day or maybe even more than that of going around and talking to people in their offices and in their laboratories trying to see can this student communicate. Is this student able to stand on his or her feet and say what it is that's on their mind? Because communication plays an enormously important role in what we do here in HP laboratories."

Interview:

As director of the Solid State Technology Laboratory at Hewlett Packard, Gary Baldwin looks for engineers who can "make contributions across a broad range of product, process, and project areas." To get hired by the company, candidates need to have "a firm grounding in the fundamentals."

Baldwin offers crucial advice to undergraduates. "Have a very, very solid understanding the best you can possibly get of the fundamentals in whatever field you happen to be involved in:

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computer science, software, physics, chemistry, electrical engineering ... What we find are students [who] frequently dispense with the fundamentals and quickly elevate themselves to working with fancy tools, fancy algorithms, fancy mathematical expressions and formulas ... The tools are going to change and evolve, and people are going to move on to other things." The fundamentals, however, do not change. "You'll be able to move to a new field, applying your skills and your basic understanding of physics, chemistry, mathematics, and computer science in a much broader set of applications." Baldwin warns that the lack of fundamental knowledge "shows up very quickly."

Because engineers necessarily work in teams or with clients, Baldwin further recommends that undergraduates get training in three other areas. "I realize it's difficult to do these days because there's so much to know in the technical fields." Nonetheless, he emphasizes, "Learn to write well ... You'd be amazed at how much time is wasted by not being able to communicate in written form. It's an essential skill, and it's certainly essential for a higher level of success. People who don't write well just don't make it in my experience."

A related second skill that engineers need to have is the ability to speak well. Baldwin explains, "Learn how to get up on your feet in front of friends or strangers and make a statement about what you're working on, what you believe in, or a direction that you'd like to see a project go in. Interaction with customers depends critically on oral skills, and most undergraduates don't get much practice at that. I strongly advise undergraduates to get involved in some kind of activity that forces them to speak in front of an audience. It will really pay off handsomely later on."

Baldwin's third recommendation is that students take business courses. He speaks feelingly from experience. "I wish that I had had just one business course of any kind when I was an undergraduate or even a graduate [student]. I find myself having to learn ... about business concepts that are [more] easily learned in school."

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