

When Ray asked me to speak here tonight I felt quite honored, and I said I'd have to think of something profound to say. He reassured me that that wouldn't be necessary—that he had scheduled the profound people in the afternoon—and that for the dinner he was looking for someone old. I may have looked a bit distressed, so he went on to explain that he wanted a speaker who could connect WINLAB to the long arc of history—someone who was actually there in the dark age between Marconi and Goodman.

I thought I would need some help with that, so I went looking for Larry Greenstein (many of our students may not know that Larry worked with Marconi). It turned out he was in Chicago, so I broke into his office, and there I found a dusty old book called *The Bible of Wireless*. It was just what I needed, and so I copied a few verses to share with you tonight.

---

*The Bible of Wireless, annotated version, Chapter 10, Verses 18-53*

*And it came to pass that the tribe of wireless would wander in the wilderness for forty long years, looking for channels, but they found them not.*

*And then God took pity upon them, and He sent his angel Minow to them, and Minow said, "Gather thy warriors in the Vast Wasteland and do battle there, for the tribe of Uhuf has many channels, and they do use them not for good but for sex and violence instead." And so the tribe of wireless went there and did battle for fifteen long years, and they came away with many channels. And then the people did rejoice, and they built many tall towers to praise their God, and it was good.*

*But when ten years had passed, many did turn their faces away from their old God, whom they called Analog, and began to worship new gods, who were called Cidma, and Tidma, and Gusm. These were young and warlike gods, and each did say "worship me and I will bring you greater wealth than the others," and the people were divided and confused.*

*And in that time there arose on the banks of the river Raritan a great prophet who was called Goodman, and he smote his desk with his staff.*

*[Biblical scholars have long debated the meaning of this verse, but most believe that this reference to Goodman's staff refers to Philomena, Melissa and Noreen. All three have been observed smiting their heads upon their desks, particularly on days when proposals are due, and this is thought to be a ritual practiced in remembrance of Goodman.]*

*And Goodman gathered his disciples about him and they built a great tower of ivory there. And when it was finished they went inside and ate small mushrooms, and they had many strange visions. And twice in each year, they came out from their tower, and they spoke in tongues to the multitude that assembled there, and all were amazed.*

*But when ten years had passed and the multitude had assembled, Goodman did not appear. And the disciples went into his office, and they found Seskar sitting on his desk. "Where is Goodman?" they asked. "He is not here,"*

*Seskar said. "He has taken the mushrooms and gone to Brooklyn." And the disciples were afraid.*

*And in those times the people spoke of a guru who lived in a cave in the region of Princeton, and he was called Raychaudhuri. And they went to the cave and said, "Master, what shall we do, for we have no mushrooms and our equations do not compute." And Raychaudhuri showed them a small box.*

*"What is this small box?" asked the disciple they called Rose. "Is it a new version of Matlab?"*

*"It is a radio," said Raychaudhuri. "You must build them." And they were confused, for they had not seen such things before.*

*And so Raychaudhuri came with them to their tower at the Raritan, and there Seskar made them a shrine, and he built many radios and hung them from its ceiling, and the people were amazed.*

---

In addition to being here as a biblical scholar, I'm also here to represent the last of the groups you will be hearing from—the AARB—the American Association of Retired Bell Labsers. We all worked at Holmdel during the decades when that huge building was filled to overflowing and funding drifted down from the hanging planters. For us, it was a world that seemed safe and permanent. I built two organizations there that I thought would last long after I was gone, but sadly they did not, and the building itself is now deserted and empty. I still go there, but only in my dreams. In my dreams it's still full of people I know, but I can't find my office.

For our little group of exiles, WINLAB has been a special joy—a place where we could still explore those endlessly fascinating wireless puzzles with some really smart people. It seems we spend our careers focused on distant goals, but somewhere along the way, if we're lucky, we discover that it's the journey and the companionship that we really love. And as corporate research has become increasingly short-term and focused, places like WINLAB have become even more important—not just to us but to the world. Those that survive for many years, as WINLAB has, preserve a sort of communal knowledge, and they keep a few mushrooms around as well, for working on special problems. Those students who seem to be sleeping are really having visions.

So how has WINLAB not only survived but grown and prospered for all these years? One answer is that its people have repeatedly reinvented themselves. Instead of plowing the same old furrows, just because that's what they were good at, they've seen new needs and new opportunities. Then they've attracted other talented people with diverse backgrounds, and supported those people in their research and in their careers. The quality of the work produced by WINLAB faculty and students has been demonstrated in many major awards, and its diversity was evident in the displays and demonstrations we saw this morning. There are far too many people and accomplishments to name here, but a few people have to be recognized for their special contribution to its long life and success. (We should do this at least once every 20 years.)

We begin, of course, with the prophet David and the Guru Ray, who have led WINLAB for 18 of its 20 years. Leading a center like WINLAB is no small challenge. It takes the

knowledge and vision to see new opportunities, the stubborn perseverance to find resources and start programs, and the patience to teach and support young people. We've been blessed with two leaders who share those rare qualities, and each has marked WINLAB with his own unique personality and style as well.

Now I understand that if either of them were up here at this moment, they would be giving the credit for WINLAB's success to the rest of us, so let me answer that we get that. We know it's a common cause, and we're proud of our accomplishments as a group, but we also know that without David and Ray to cajole and push and support us all, and to do all the thankless jobs that no one else was willing to do, WINLAB would not exist today.

There are two other people in the audience who understand this better than the rest of us. Between David and Ray, there was a two-year interregnum. That was a dangerous time for WINLAB, with challenges that could have weakened or even destroyed a leaderless center, but Roy and Narayan were willing to step in as acting directors, each for a year, in addition to doing their regular work, and because they kept WINLAB strong, Ray has been able to focus on the growth rather than mere survival.

And finally, I need to embarrass one last person, for reasons that all WINLAB people will understand. That person is Ivan, who built not only that shrine with radios hanging from the ceiling but most of the physical assets that make WINLAB so diverse and exciting. It's well and good for the rest of us to dream great dreams, but turning those dreams into a physical reality is incredibly hard. We're sure there are many things that Ivan can't do—they just haven't come up yet.

So with whatever you happen to be drinking, let's raise a toast to them, and to ourselves and to our friends who have gathered here to help us celebrate—to the 20 years that were and all the years to come—TO WINLAB!

---