

IREC's ISPQ Monthly is a recap of the latest news, policies and best practices from the ISPQ credentialing program for renewable energy, weatherization and the energy retrofit sector. To subscribe, [click here](#).



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THE ISPQ Insider



Energy efficiency curriculae: where it all started



Feature: Energy Efficiency Education: a conversation with NEEI's Roger Ebbage

Roger's a very compelling (though modest) kind of guy. Back in 1992, he convinced Lane Community College (LCC) to hire him as its Energy Management Coordinator, and (not surprisingly) transformed a moribund program into the national model for energy education. We *all* owe him, big time. Today, as the [Northwest Energy Education Institute's \(NEEI\)](#) Director of Energy and Water Programs, Roger's visionary work continues—he's busier than ever. I called him on Earth Day (how appropriate) to chat about his work and the changes he's seen over the past two decades. As with the first time we talked, Roger was gracious, compelling and modest. [Read more...](#)

Of note...

IREC's ISPQ credentialing program is looking for professionals to serve as ISPQ auditors. All qualified candidates are invited to apply, but there is a special need for those with technical expertise in the energy efficiency and weatherization fields. Auditors play a key role in ensuring the quality and accuracy of the IREC ISPQ evaluation process. Interested? Visit the [IREC ISPQ website](#) for more information, or contact [Pat Fox](#), IREC Director of Operations.

Update Your Listing in our Online Directory of Training Courses

Are you a renewable energy or energy efficiency trainer? Is your program listed in IREC's [online directory](#) of university courses or training providers? Or do you need to update what's already in our directory? These directories are a valuable resource for students seeking training programs and university courses, and updating your listing is as easy as 1-2-3. [Read more.](#)

ISPQ approved Job Task Analyses (JTA)

The Job Task Analysis is a formal process for determining what people do, under what working conditions they do it, what they must know to do it, and the skills they must have to do it. Usually a technical committee of subject matter experts is convened to develop the task analysis. The task analysis helps establish the basis for training curricula and helps define requirements for the assessment and credentialing of practitioners. IREC uses distinct



May 2011

From ISPQ's Director

I just came out of our latest ISPQ Award Committee meeting, and we now have 109 training providers who have achieved an IREC ISPQ credential! It is great to see that the interest in quality training continues to be strong and growing. To support this growth we are focusing on some of the resources we provide. The number of entries in our training directory has grown to 183 and we've been reaching out to all ISPQ accredited training programs to be sure they are included. In this newsletter you can read about the Solar Licensing Database and how we are maintaining that valuable resource. And over the next few months we will be reviewing our website to see how we can improve the design to help prospective students find our IREC ISPQ credentialed training providers more easily. As we grow in renewable energy and prepare for our expansion into energy efficiency and weatherization, we are actively expanding our auditing team. It takes a unique person with appropriate expertise, attention to detail, and an ability to work



Interstate Renewable Energy Council

ENERGY EFFICIENCY EDUCATION: A CONVERSATION WITH NEEI'S ROGER EBBAGE

by Jane Pulaski



I first met Roger in 2004 when I cold-called him to talk about the good, the bad, and the ugly of starting a renewable energy education program at our local community college, Austin Community College (ACC). He was amazingly generous with his time and his counsel was dead on. Within a few days, ACC's first non-credit course in renewable energy was sold out, a second section added. Without a doubt, his guidance was critical to the success at ACC.

Roger's a very compelling (though modest) kind of guy. He convinced Lane Community College (LCC) to hire him as its Energy Management Coordinator in 1992 and (not surprisingly), transformed a moribund program into the national model for energy education. We *all* owe him, big time.

Today, as the [Northwest Energy Education Institute's \(NEEI\)](#) Director of Energy and Water Programs, Roger's visionary work continues—he's busier than ever. I called him on Earth Day (how appropriate) to chat about his work and the changes he's seen over the past two decades. As with the first time we talked, Roger was wonderfully gracious. Here's our conversation.

Roger Ebbage

IREC: Roger, you've been in this field for quite a while now. In fact, you might be—if not the first—certainly among the first to elevate energy efficiency awareness as a curriculum in the community college space, long before the terms 'green energy,' or 'clean energy' were in circulation.

RE: I came to the Lane Energy Management Program in 1992, so I'm going on 20 years here. Lane's program began in 1980 so I guess you could call me a late-comer. Actually, the program had been dormant from 1988-1992 as federal policies during those years virtually eliminated student labor market incentives for residential weatherization and solar thermal installation studies. So what happened...[Bonneville Power Administration \(BPA\)](#) offered funding to Lane with which to reinstate the energy management effort because they (Bonneville) were seeing potential growth in the commercial building efficiency sector, and a need for well-educated and trained practitioners. The condition of their funding was to move from residential energy efficiency and solar thermal curriculum to cover auditing for commercial building efficiency. Lane retained its residential weatherization program, but solar thermal dropped out of the picture entirely.

IREC: I hardly think of you as a late-comer, Roger. BPA is one of four regional federal power marketing agencies under DOE's purview that transmits and sells wholesale electricity in WA, OR, ID and western Montana to public utilities ([thanks, Wikipedia](#)). So BPA was really hoping to get future utility employees trained, right?

RE: Exactly. They were looking for trained energy specialists who would work for utilities, engineering firms, school districts, etc. Lots of utilities do contract work with engineering firms and energy service companies, so it's a great opportunity for our students. Our graduates have gone to work for Oregon's Department of Energy, federal DOE, State and City government, mechanical engineering and energy service firms.

IREC: Is Lane the only kid on the block?

RE: For the longest time, Lane was one of the only comprehensive commercial energy auditing program of its kind in the U.S. There are others out there now, schools that we've helped launch their own energy management programs (like [Delaware Technical Community College](#)), others that offer adjunct courses to existing degree programs (i.e., programs in HVAC Tech). Still others might add a catch-all energy management course or two, and call that an 'energy management program.' Ours is all about energy efficiency—we're not adjunct any other program. I've said this before, but our program is so comprehensive—we cover all aspects of energy systems in a building, including financial calculations, computer tools—everything that will enable someone who finishes our program to be very comfortable with doing a comprehensive commercial energy audit at a school or a shopping mall—it's really a testament the depth of our curriculum.

IREC: Has registration always been robust? Do you ever have to worry about having enough students to make a class?

RE: We've always been lucky; we don't really have to hustle for students here at Lane because there's such interest in our courses. Our first class was big (relatively), with 32 students. From that first class of 32, 28 found jobs right away. Today, we've got 90 students who are taking courses leading to one of our three options, and there doesn't seem to be any sign of a slowdown.

IREC: 20 years is a long time to have this curricula around. What's different about it today? Surely new programs have emerged over the past 20 years, right?

RE: It's still all about commercial energy management. Building efficiency is still the foundation of the program. We've added some options, like renewable energy, solar thermal and PV. We've also added resource conservation management (RCM). If someone pursues the RCM program at Lane, they'll learn how to manage the waste stream through-put of that institution, with energy efficiency being the foundation of the waste stream. Assume an institution has done nothing, or very little, to manage their energy and resource consumption. If they hire one of our resource conservation management graduates, they could pay their salary from energy savings. If stuff stays out of the waste stream by going to the right recovery entity, it becomes a revenue stream for the institution. We also now have a water conservation degree program.

IREC: Did you have to tweak the curriculum to accommodate the students, or did you make the students comply with the requirements? We hear all the time that students' math and science knowledge is weak, and there's a lot of time spent in remedial classes in these areas. What knowledge do your students come into class with? What were the biggest educational challenges?

RE: We've always had math and science embedded into the curriculum. We really don't have pre-requisites. Since our energy management programs are so popular, we can require that our students to be up-to-speed in math, so they come in with beginning algebra under their belt (they have to test in to a higher math level or show transcripts). But that's something that's changed since 1992. We're not trying to eliminate potential students, but we want them to be prepared for the rigorous coursework. Physics, spreadsheets, general education courses—they're all part of the core content.

IREC: Let's talk demographics. I'm betting it's changed over the years. Who were attracted then, and who's showing up now?

RE: This is interesting. Yes, it's changed over time. Early on, we saw lots of folks who were laid off from the Northwest wood products industry. Maybe 25% had a college background, some engineering, a few women were in the mix. The average age was between 42-45. As I recall, there were four women in the original class of

32. Over the years, for reasons not within our control, the numbers have fluctuated. At one point, we had an enrollment as low as 15 entering the program, but now we're up to 90. The average age of our students has really been interesting to track as well. Today we are seeing younger students interested in our program. About four years ago, roughly 70% of my students already had a four-year degree. Those were the ones who wanted to be involved in having a career related to the helping the environment. That's changed a little bit now, primarily because of the recession. Today I'd say some 50% of my students have a four-year degree. Still, people who aren't especially inspired by 'green' opportunities see our program as a solid way to get a job, and a long-term future in this kind of work.

IREC: So the big question: have your students been successful in finding work after graduation? Have local or national businesses been aggressive recruiters of your students?

RE: Absolutely. We've got anecdotal statistics—about 70-80% of our students find work, and since we're about the only program of its kind in the country, we get students from all over. I'm dead honest with my students about the labor market. They need to relocate to find employment. We keep a close watch on the labor market and if we start seeing a saturated market place, I'll scale my programs back. There are enough trainers who haven't been successful placing students because their local labor market didn't materialize.

IREC: So it's not just 'greenies' who are flocking to your program.

RE: Oh sure, our classes are populated by those who are greenies, but we've also got those who just want a job. Some of my students believe this work will save life on earth; others just want job security to protect them from chronic layoffs from traditional work. Many of them anticipate clean energy jobs as the IT's of the 90's, but without the bubble. It's funny—I spoke with someone recently who said that 'green' is an industry that's always going to be around. 'You don't have to be a tree hugger to like this work,' he said. We're seeing a lot of these folks in our classes now, and that's a positive outcome for this type of education. But on the administrative side of this—I constantly get requests from Lane for 'completion rate' statistics—they want to see graduation numbers. Completion rates aren't necessarily the student's goal—work is their goal.

IREC: So here we are in 2011, where the terms 'clean energy,' 'green energy,' are common vernacular, and dozens of community colleges are fully on board with energy efficiency and renewable energy curricula. Are you satisfied with the growth and acceptance of this work? Maybe you're not so lonely now?

RE: I still get a fair share of calls to help others start similar programs, like Delaware Technical Community College (DTCC), and University of West Virginia Parkersburg. Through a National Science Foundation ATE grant, we're working with other colleges this Fall to help them get started. So yeah, now I've got company, and I like that a lot.

IREC: What else keeps you busy besides teaching?

RE: I teach a couple of classes a year, but I spend a lot of time fundraising because we get no general funding from the college. I also spend a lot of time training practitioners out in the field for a variety of organizations. I still do some grant writing and assisting my very competent staff when they let me. And I'm an alternate on the NABCEP Board, and serve on an IREC Advisory Committee. The advantage of being involved w/ IREC, NABCEP, ISPQ is they help me (and others) better understand how the markets are evolving and how to train and plan for constant industry evolution. Incidentally, I've not worked with more dedicated and competent organizations as IREC, NABCEP, ISPQ.

IREC: Ditto. I'm curious about the [Northwest Energy Education Institute \(NEEI\)](#). Not only do you teach incoming students at LCC, but through NEEi, practicing professionals in the industry can get additional training, right? And did I hear that there's a new building for NEEi in the works?

RE: NEEi is our umbrella organization. Under it, we have professional development, two-year degree programs; our water conservation curriculum is here as well. And yes, a new 90K square foot downtown academic building is under construction as we speak, designed so the energy and water management systems in the building will be the teaching tools for our students. We're building it to LEED Platinum standards. In addition to NEEi, the building will house other Lane programs like English as a Second Language and Continuing Education. It'll be a building that is fundamentally day-lit, naturally ventilated, using passive solar heating and cooling systems. Some 5K square feet will be our demonstration floor. This will be a hands-on learning environment where our students will be able to compare multiple comfort and lighting systems, one to another, all within the same building shell under the same weather conditions. It's planned for completion in 2012.

IREC: A building that is the teacher—how long have you waited for this? I may need a field trip. So in all the years you've been at this, Roger, what's surprised you the most?

RE: I've wanted a "building that teaches" for 10-12 years. Regarding my biggest surprise, sadly, I'd say there's still a global lack of awareness that the impact of our behavior affects climate change. People still don't get it. When gasoline prices go up, however, they get it. They behave differently, and they're more aware of managing their home energy usage. But in the commercial building sector, there's a huge disconnect. End-users keep the lights on, and when they can, turn up the heat when they're cold, and turn down the AC when they're hot. We can demonstrate the effects of excessive energy consumption all day long, and drill it day after day, but commercial building end-users still don't make the connection. The challenge that we face is to change end-users behavior – it's a cultural shift. That's a big reason we're so excited about our new building where students will work in a space where they can see the direct effects that their behavior has on energy use..

IREC: If that doesn't do it...You continue to inspire a lot of people, Roger. You remain optimistic and encouraged. Thanks for all the brilliant work you done over the years, and to the work yet to accomplish. Oh, and P.S...I'll be back to chat when the new building is operational. Nothing I love more than a 'green' sequel.