Bill as Introduced

14feb02...1955h
6mar02...2752h

2001 SESSION

01-2040
04/10

HOUSE BILL ***1231-FN***

AN ACT implementing a pre-engineering technology curriculum in the public high schools in the state.

SPONSORS: Rep. Leber, Merr 1; Rep. Edwards, Ches 19; Rep. Tahir, Hills 38; Rep. C. Bouchard, Merr 22; Rep. Rausch, Rock 13; Sen. Gordon, Dist 2; Sen. Flanders, Dist 7; Sen. O'Hearn, Dist 12; Sen. Johnson, Dist 3; Sen. Larsen, Dist 15

COMMITTEE: Education

AMENDED ANALYSIS

This bill establishes a pre-engineering technology curriculum in the public high schools in the state and creates a pre-engineering technology curriculum advisory council to advise the department of education on the implementation of such curriculum. The bill also transfers a capital appropriation to implement the pre-engineering technology curriculum.

. . . . . .

Explanation: Matter added to current law appears in ***bold italics.***
Matter removed from current law appears [~~in brackets and struckthrough.~~]
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

14feb02...1955h
6mar02...2752h

01-2040
04/10

STATE OF NEW HAMPSHIRE

In the Year of Our Lord Two Thousand One

AN ACT implementing a pre-engineering technology curriculum in the public high schools in the state.

Be it Enacted by the Senate and House of Representatives in General Court convened:

1 New Subdivision; Pre-Engineering Technology Curriculum and Advisory Council. Amend RSA 188-E by inserting after section 13 the following new subdivision:

Pre-Engineering Technology Curriculum and Advisory Council

188-E:14 Pre-Engineering Technology Curriculum.

I. The department of education shall develop and implement a pre-engineering technology curriculum in the public high schools to provide statewide opportunities for high school students interested in careers in engineering, or allied engineering fields, to enroll in a high quality engineering technology curriculum.

II. The state board of education shall adopt rules, pursuant to RSA 541-A, relative to course content, curricular requirements, and general procedures for implementing the pre-engineering technology curriculum. At a minimum, the curriculum shall include the following courses:

(a) Introduction to engineering design

(b) Digital electronics

(c) Principles of engineering

(d) Computer integrated manufacturing

(e) Engineering design and development

III. In developing and implementing a pre-engineering technology curriculum, the efforts of the department of education shall complement existing public and private actions, and shall include the pursuit of innovative public-private partnerships with businesses, nongovernmental organizations, academic institutions, and other appropriate groups. Such partnerships shall at a minimum consist of a 50/50 match of public and private funds. Teachers teaching in the pre-engineering technology curriculum, shall be certified to teach the course work as required in this curriculum.

IV. The department of education shall include in its biennial capital budget request, funding for the planning, construction, renovation of equipment necessary for the operation of pre-engineering technology curriculum in the regional vocation education centers.

V. Public schools which implement the pre-engineering technology curriculum shall be responsible for maintaining the program with funding requests made through the budgetary cycle.

188-E:15 Pre-Engineering Technology Advisory Council. There is established a pre-engineering technology advisory council to advise the department of education in the implementation and expansion of the pre-engineering technology curriculum, to assist the department of education in pursuing public and private funds in order to ensure statewide access for all public high school students to pre-engineering technology curriculum coursework.

188-E:16 Membership and Terms.

I. The members of the advisory council shall be as follows:

(a) One member of the house of representatives, appointed by the speaker of the house.

(b) One member of the senate, appointed by the president of the senate.

(c) The commissioner of the department of education, or designee.

(d) The president of the New Hampshire community technical institute, or designee.

(e) The dean of the university of New Hampshire college of engineering and physical sciences, or designee.

(f) Three superintendents from school administrative units in which at least one school offers a pre-engineering technology curriculum to its students, appointed by the governor and council.

(g) Six members of the public representing businesses or other organizations, firms, or institutions which hire engineers or engineering technologists, appointed by the governor and council.

II.(a) The term of office for each member appointed under subparagraphs I(f) and I(g) shall be 3 years, or until a successor is appointed and qualified in the case of a vacancy. The term of office for all other members shall be coterminous with the term of office for the position that qualifies that member to serve on the advisory council. A vacancy shall be filled in the same manner, but only for the unexpired term.

(b) The advisory council shall meet at least quarterly, and may meet more often at the call of the chair, or at the request of a majority of the members directed to the chair. The council may, by majority vote of the voting members, adopt additional bylaws as deemed necessary by the council.

(c) The council shall, at its annual meeting, elect one voting member to serve as chair for a one-year term, or until a successor is elected and qualified.

(d) No member shall receive any compensation for serving on the council, provided that the legislative members shall receive legislative mileage when in performance of their duties and the public members may receive compensation dependent upon the availability of funds, other than from the general fund.

188-E:17 Duties. The advisory council shall advise the department of education in the following areas relative to the implementation of the pre-engineering technology curriculum:

I. Curriculum expansion and revision.

II. Curriculum eligibility requirements.

III. Curriculum quality.

IV. Fund raising from private and other sources.

V. Allocation of funds necessary for the curriculum.

2 Capital Appropriation; Bonds Authorized. To provide funds for this act, any remaining sums in the appropriation originally designated in 1973, 567:1 (former RSA 188-E:10), and as amended, for construction appropriation for the state board of education to make grants to regional vocational education centers are hereby transferred for the purposes of this act and appropriated to the department of education. The commissioner is authorized to grant these funds for implementation of the pre-engineering technology curriculum available to all public secondary schools and regional career and technical centers. The state treasurer is hereby authorized to borrow upon the credit of the state not exceeding said sum and for said purpose may issue bonds and notes in the name of and on behalf of the state of New Hampshire in accordance with RSA 6-A. Payments of principal and interest on the bonds and notes shall be made from the general fund of the state. The bonds shall be 5-year bonds. This appropriation shall lapse June 30, 2005.

3 Effective Date. This act shall take effect July 1, 2002.

LBAO
01-2040
Amended 3/4/02

HB 1231 FISCAL NOTE

AN ACT implementing a pre-engineering technology curriculum in the public high schools in the state.

FISCAL IMPACT:

The Department of Education indicates this bill, as amended by the House, (**House Amendment #2001-1955h**) will have no fiscal impact on state, county and local revenue or expenditures.

METHODOLOGY:

The Department states this bill utilizes money from a non-lapsing capital appropriation formerly used to fund the construction and renovation of regional vocational centers. Prior to FY 2001, RSA 188-E:10 authorized the Treasurer of the State of New Hampshire to make available, through the issuance of bonds, amounts not to exceed $85 million. That RSA was repealed and reenacted effective June 21, 2000, to require the Department to include expenditures for the construction and renovation of the regional vocational centers in the Department's capital budget. As a result of the funding source change, $711,000 was available but not spent under the non-lapsing capital appropriation. This bill utilizes this amount to fund the requirements of this bill. The Department states these funds will be used to purchase equipment on a 50-50 match basis.

Amendments

Rep. Thomas, Belk 3
March 27, 2002
2002-3131h
04/01

Amendment to HB 1231-FN

Amend the title of the bill by replacing it with the following:

AN ACT implementing a pre-engineering technology curriculum in the public high schools in the state and relative to the naming of the regional community-technical college system.

Amend the bill by inserting after section 2 the following and renumbering the original section 3 to read as 4:

3 Regional Community-Technical Colleges; Naming. Amend RSA 188-F:11 to read as follows:

188-F:11 Name and Program of the Regional Community-Technical Institute and Colleges. The program of the technical colleges shall be designed to prepare qualified high school graduates or the equivalent as technicians and skilled workers and to prepare students to continue their higher education. The names of the regional community-technical institute and colleges shall be determined by the board of trustees subject to approval of the governor and council, ***provided that any name change approved for any institution within the regional community-technical college system shall contain the words "community-technical."***

2002-3131h

AMENDED ANALYSIS

This bill:

I. Establishes a pre-engineering technology curriculum in the public high schools in the state and creates a pre-engineering technology curriculum advisory council to advise the department of education on the implementation of such curriculum.

II. Transfers a capital appropriation to implement the pre-engineering technology curriculum.

III. Provides that the words "community-technical" shall be included in any name change to any institution within the regional community-technical college system.

Committee Minutes

Date: **April 3, 2002**
Time: **2:15 PM**
Room: **State House 105-A**

The Senate Committee on **Education** held a hearing on the following:

HB 1231-FN **(New Title) implementing a pre-engineering technology curriculum in the public high schools in the state and relative to the naming of the regional community-technical college system.**

Members of Committee present: **Senator O'Hearn**
Senator McCarley
Senator Disnard

The Chair, Senator Jane E. O'Hearn, opened the hearing by recognizing Representative Leber, the bill's prime sponsor, as the first speaker.

Representative Leber: ***(Written testimony, see attachment A)***

Senator George F. Disnard, D. 8: Representative Leber I don't see any fiscal note, first I understand you have a fund, but I don't know how much this would take in the next budgetary cycle...inaudible...?

Representative Leber: Someone will probably bring...to start the program it takes about ***$100,000.00 to construct*** and equip the room of about 20 positions. And for a ***50/50 match*** it would mean that the ***state would supply the $50,000.00 incentive grant.*** And the local community or businesses that are supporting this program would provide the other $50,000.00 to get it started. And that's the end of the obligation for the state. Operating costs and future development would be the local community.

Senator George F. Disnard, D. 8: Is this fund to renovate existing technical high schools?

Representative Leber: It would be one room.

Senator George F. Disnard, D. 8: The fund that you wish to borrow from, take from or use, what was that fund originally set up for?

Representative Leber: It was appropriated for the regional vocational high schools, yes, years ago.

Senator George F. Disnard, D. 8: For renovations?

Representative Leber: Yes, I would...it could have been for the construction on it, when we got into renovation is when the issue came before us and we put it into the capital budget process.

Senator George F. Disnard, D. 8: It would seem to me that when we voted money to increase the total bonding, the construction of new schools, they already had the schools listed and the amount of money they asked for was fully used up. Now I hear that these schools haven't used it all, that there is funding still there and you want to use this for existing schools, for building a room, constructing a room for $100,000.00.

Representative Leber: $50,000.00 is state funding. It's not enough money in there to construct or renovate another vocational education center, but I think other people can address that. There's just a little money left in that account. But that was a revolving account. I remember back in the '70s when it was first adopted, then it would be increased every few years with additional appropriations.

Senator Jane E. O'Hearn, D. 12: The cost is $50,000.00 per classroom, per school?

Representative Leber: Per classroom, per school. The total cost is $100,000.00 and $50,000.00 is state money to match. I may be... as I recall it's about 20 positions in there. It's mostly computer equipment that needs to be purchased and set up. And of course probably some utility construction or re-arrangement in the room.

Senator Jane E. O'Hearn, D. 12: In the list of high schools that you have, those that are like Hopkinton and Bow, which are currently implementing the program. And then looking at Nashua that is in the process and then the ones that are in the waiting stages, each one of these would be a $50,000.00?

Representative Leber: Grant, yes. Now when you get down to Nashua and Keene, we put money in the capital budget this last year for four and a half million to renovate those schools. And one of the points in this bill would mean that whenever the department renovates a vocational high school center, or whatever they call it, they would include this program or this

project in that total renovation. So that whenever we're doing something like that, include it so that it is part of the program.

Senator Jane E. O'Hearn, D. 12: One time appropriation?

Representative Leber: Yes.

Senator Jane E. O'Hearn, D. 12: Not continually every biennium?

Representative Leber: No, this is one time for creating, developing the site, getting it up and running.

Senator Jane E. O'Hearn, D. 12: Further questions? Thank you Representative Leber. Next I'm going to run through the Reps., ***Representative Sova***, who is in support but not wishing to speak. ***Senator Flanders*** is in support but not wishing to speak. ***Representative Cox*** is in support but not wishing to speak. ***Representative Fraser*** is in support but not wishing to speak. Representative Thomas, wishing to speak and in support, with an amendment.

Representative Thomas: Thank you Madam Chair, Senator Disnard, good to see you again. I talked to you earlier Madam Chair about adding an amendment to this piece of legislation because of the fact of what happened to another bill that Senator Johnson and I put in, which was Senate Bill 429.

Before I get into the amendment though, I would just like to state that I am fully in favor, 100%, of this bill. Being an engineering type myself, with an engineering background, I totally concur with getting these children started on a very meaningful track before they get into college.

And I have to reflect back. When I think of these things I have to reflect back on my career as a design engineer with General Electric Aircraft Engine Group. We had an industrial engineer there who was fully involved with a team of local kids from his local high school that just did some marvelous things and had more darn fun with robots than I've ever seen kids have with a lot of other things that they do in schools and out of schools. So I am fully in support of this and I know that Senator Johnson is also.

Senator Johnson and I put in Senate Bill 429 and it did certain things, some of which are the following:

- It authorized the board of trustees to appoint and fix the compensation of the commissioner, deputy commissioner, director of administration, and presidents of the community technical college system.

- It amended the duties of the board of trustees of the community technical college system.
- Another part of the bill adds a member of the House of Representatives and a member of the Senate to the board of trustees for the regional community technical colleges.
- And, it provided that the words "*community technical*" shall be included in any name change to any of the regional community technical colleges.

And that's what Senate Bill 429 did, which of course was heard and passed through here. When it got to the House Education Committee what happened was the committee approved of all of the parts except for the part on the board of trustees appointing and fixing the compensation of the commissioner, etc. They got hung up a little bit on the money and it went 8-7 in that committee to interim study.

So I came, after I heard that one, I came over and I saw you Madam Chair and Senator Johnson and I just got to talk to each other yesterday afternoon on this thing. And what we'd like to do is add on the provisions on to House Bill 1231 about the one member of the House of Representatives and Senate being named to the board of trustees. Plus providing the other part that provides the words "*community technical*" shall be included in any name change to the community technical colleges. And basically I am here today to offer those two parts as an amendment.

Senator Jane E. O'Hearn, D. 12: So the amendment that I have here....

Representative Thomas: Senator Johnson would like to add to that.

Senator Jane E. O'Hearn, D. 12: Add a house and senate member on the board.

Representative Thomas: Yes, and if I may also add, Madam Chair that I've talked to the members of the house committee on education, I've talked to ***Representative Henderson***, he has no problem with those changes. The members that I've talked to, which is just about all of them, have no problem with those two changes. Also other people that are fully in support, there's ***Claudia Mahar*** who is chair of the board of trustees. ***Commissioner O'Donnell*** is fully in favor of that. ***Senator D'Allesandro*** is in favor; ***Governor Peterson*** is in favor. I haven't found anybody yet that has been opposed to it, so I would like to offer those amendments.

Senator Jane E. O'Hearn, D. 12: Has interim study made it through the house yet?

Representative Thomas: No, that will come through this week.

Senator Jane E. O'Hearn, D. 12: Is there a possibility that the interim study could be overturned?

Representative Thomas: No, they're pretty...they understand that there is no way they can get that through. Plus it's going to have to go to another committee anyways, so I've been told.

Senator Jane E. O'Hearn, D. 12: And so it goes to the finance committee? This would have to go to finance.

Representative Thomas: I think they were thinking of ED&A.

Senator Jane E. O'Hearn, D. 12: The original.

Representative Thomas: Yea, the original bill. And also these changes will not affect the original intent of this bill whatsoever.

Senator George F. Disnard, D. 8: Representative Thomas, the original, Representative Leber indicated that the fund, and he's asking for a million dollars in that fund, does the state department of education support that?

Representative Thomas: I do not know that, I'm sorry Senator, I do not know that part of the bill well enough.

Senator George F. Disnard, D. 8: I just want to make sure that the funds are there. And you want to use them for what they were intended for.

Representative Thomas: I think I would defer to other people who will be testifying to that.

Senator Jane E. O'Hearn, D. 12: Thank you very much. Representative Candice Bouchard is in support not wishing to speak. Representative Jim Rausch.

Representative Rausch: Thank you Madam Chair and committee members. I will be extremely brief, as there's a lot of individuals who would like to speak on this issue.

- This legislation helps create a synergism between our educational system, the business community and the state's economic interest.
- I believe passage of this bill will encourage students to pursue technical careers.

- It will help ensure our state has the workforce necessary to attract businesses that are vital to the state's economic prosperity.
- It will enable our educational infrastructure to keep pace with the technologically challenging requirements of our society.
- And it will give our citizens the opportunity to be gainfully employed in high paying technical careers.

This is, I think, good legislation for our state. And I respectfully hope that you will support passage of House Bill 1231.

Senator George F. Disnard, D. 8: Has the governor captured this money for the lack of funding of money that was not expended?

Representative Rausch: This was lapsed money that had not money that had not been utilized for construction of these technical schools, going back some years. And I believe you had asked about a million dollars?

Senator George F. Disnard, D. 8: $50,000.00.

Representative Rausch: You took 20x50, the intent-and I certainly think individuals behind me will address this more specifically-but the intent is to do these in stages, and the first stage was five schools so that the amount of money they were looking for is approximately $250,000.00. And then there would be matching money from businesses and communities to fulfill the obligation of approximately $100,000.00 per transition into the new facility for this program. So $50,000.00 from this pool and $50,000.00 from business. But the initial phase is looking for approximately $250,000.00 that the department of education has in that money that has not been lapsed.

Senator George F. Disnard, D. 8: I notice in the existing schools given that there are some waiting for the funding, in addition to the six schools that have already been selected. Is there a time period to determine if the local businesses would fund the their share of the fifty thousand?

Representative Rausch: I believe that those who are ready to go have their matching funds. That's my understanding of it.

Senator Jane E. O'Hearn, D. 12: Thank you very much. Next are there any other representatives that I have not called on who would like to speak to this? Next I'd like to call Bill Johnson.

Bill Johnson: Thank you Senator. My name is Bill Johnson and I'm the chair of the John Stark School Board, and we were one of the school boards

that originally funded "*Project Lead the Way*" in our school and received a grand from *Project Lead the Way Foundation* itself.

It's been highly successful at John Stark Regional. We have over 100 students enrolled to date. Some of these students had never been exposed to engineering before. One young woman was enrolled two years ago in *Project Lead the Way* courses, first engineering she ever took in her entire life. And she is now in Worcester studying to be a chemical engineer. My daughter took it; she wound up being able to work at an architectural engineering firm.

I used to work for the *Turner Group* here in *Concord*, which is an architectural engineering design firm. I'm currently employed by *Haley and Aldrich*, which is an underground engineering geo-technical firm and the engineering community out there needs engineers. We look far and wide. The *Turner Group* at one point looked like the *United Nations*, we had people from *China, Japan, Yugoslavia, Poland, Iran* and *Turkey*, all in the company at the same time.

This program I feel, and have seen it actually at our high school, will go a long way toward easing that and preparing these students to go to engineering school. And by encouraging young women to take a look at engineering classes and bringing them into a full understanding of what engineering is all about.

So I fully support it from a school board perspective because I've seen it work. And I fully support it from an engineering/business perspective, because the community out there really needs the support. So I'd ask your support of the bill and thank you for your time in taking this time to have the hearing.

Senator Jane E. O'Hearn, D. 12: Thank you very much. Mark Joyce from the School Boards Association, in support not wishing to speak. Nancy Huntley from BAE Systems, in support not wishing to speak. Paul Leather from the department of ed. to tell us where the money is. Show me the money.

Paul Leather: Good afternoon Madam Chair and Senators. I'm Paul Leather from the department of education and the department of education is, in fact, in favor of this bill. I am here speaking on behalf of Commissioner Donohue and also the State Board of Education.

I know one of the questions early on was support from both the commissioner and the state board, and they have agreed to support this legislation. I'm not going to go through all the reasons why this legislation is needed. I think folks have already spoken to that.

As Representative Leber spoke earlier, we were asked to find an essentially revenue neutral approach to getting this money, not coming up with new dollars either in bonding or in general fund. Representative Leber did share with us his understanding and it was further confirmed by administrative services that the original bonding authority for construction of the original technical centers-there was approximately a little over $700,000.00 left of that bonding authority. That since all of the centers that were due to be constructed had been constructed, this bonding authority was due to lapse pursuant to the subsequent renovation legislation that passed a couple of years ago.

And so efforts were made to secure that remaining bonding authority up to the $250,000.00 level, which was the original intent of this legislation, so that five centers could get moving. Five centers and/or high schools could get moving to have *Project Lead the Way* go forward, or at least get a pre-engineering program like that go forward into those schools. So that's the source of the funds and we went through the house process, an equivalent process there.

One of the things that we wanted to mention that hasn't been mentioned yet, one of the things that K-12 education has been criticized for is not working with both higher education and business towards preparing students for a real world high-tech occupations, and this program really does this.

Historically when you talk about engineering programs, students with enough math and science skills may enter higher education institutions and often you see a drop out rate in those engineering programs of upwards of 50%. With this program what's been shown nationally is that students stay in the program upwards of 90%. So it really does work. It really does get those kids who are really interested in math and science at an earlier age, interested in applying it to engineering and other kinds of applied occupations.

And so it's a program that really works and so we do urge your support in passing this bill. Thank you.

Senator George F. Disnard, D. 8: So the money is there?

Paul Leather: Yes, and it would have lapsed otherwise.

Senator George F. Disnard, D. 8: Is the fifty thousand from industry cash?

Paul Leather: Cash.

Senator George F. Disnard, D. 8: You really need $100,000.00 to construct a room and equip it?

Paul Leather: The $100,000.00 essentially is for the equipment that's needed to run a classroom. It's not to construct.

Senator George F. Disnard, D. 8: I thought the statement was made about construction and equipment.

Paul Leather: No, it's primarily for the equipment and software to set up the class.

Senator George F. Disnard, D. 8: These schools already have the room?

Paul Leather: Yes, essentially in many cases these schools would be taking out a room that they use for another purpose and using it for this class.

Senator Jane E. O'Hearn, D. 12: This is bonded dollars?

Paul Leather: That's correct.

Senator Jane E. O'Hearn, D. 12: And of the $700,000.00 that we have, how much are you using with this?

Paul Leather: The $250,000.00 is what is in the original legislation.

(Tape change, end of side one. The notes reflect a tape malfunction; some testimony was lost)

Bill Simonton: The jobs are either leaving for the Pacific Rim, or the immigration quotas are being raised, and as you know for the last few years 200,000 foreign engineers have been brought in to take these jobs. In either of those scenarios American young people are left out of the equation, jobs going oversees and foreign skilled workers being brought in.

How can we turn around the American workforce? We need more engineers and it's got to be a major systemic and systematic approach. *Project Lead the Way* is a five-course sequence of high school courses that exposes young people to engineering. It also exposes young women.

At *Merrimack Valley High School*, which probably numerically our most successful so far, 200 students out of the 800 students in the high school are enrolled in one or more *Project Lead the Way* courses at the current time. It

is their marquee program and the valedictorian of that class at *Merrimack Valley* last year went to the University of New Hampshire and has a 4.0 in her first semester.

So we have an enormous number of anecdotal success stories and we're doing some research. But to tell you the truth, we really are stalled out because the last couple of school districts that have come on, we've gotten Osram/Sylvania out in Hillsborough to put the $50,000.00 up to match the local school district, but. And I go to many school district meetings. Principals love it; superintendents love it; technology teachers love it; math teachers love it. They all say "*We want to do it,*" and they all say, *"We don't have $100,000.00."*

Now I think this amount of money, if we could say, "*We have $50,000.00 if you can come up with the other $50,000.00, or if a business in your community will.*" We're kind of stuck, we've made a lot of progress but we're sort of stuck. Jim Leon, who works with me on this at the technical institute, we've probably visited ten school districts in the last year, great enthusiasm but no momentum. So we need something to pick the momentum back up.

This certainly would do it; this is an incredibly worthwhile program. The math and science teachers at the schools like it because they see a spin off into math and science courses. In the last analysis if you walk up to ten engineers and say, "*How did you pick engineering in high school?*" They'd say "*Well I'm good in math and science and my guidance counselor said 'Why don't you go major in engineering?'*" Well in reality these students have no idea what engineering is and in some cases they don't like it. And we'd rather have them find out if it's not what they want before they go off and waste their money.

I've given you a list of where we are in the state, the summary of what's going on in New Hampshire, a little bit about lead the way national ***(see attachment B)***. And I'd be happy if you want more detail to call me. And on the last page is a breakdown by course. These are the five courses and this is what it costs to set up each course for the equipment in those programs.

It's a terrific program; we've had a lot of support all the way through and I would encourage you to keep this moving. The governor has been a supporter of *Project Lead the Way*, for the last three years she's visited classrooms. But obviously with the issue confronting the state in the last few years it's been very difficult for the state to play a role.

But this I think is a window for us to do it and to move this along. And of that list of schools we certainly can find five...you know we're at a point in the budget cycle where most of the school budgets are to bed for the next

year. But we have schools that have alternative sources of money, Concord for instance has said that if this passes they have a trust fund, so we will get five schools for next year and hopefully we can continue this and roll it out across the state. I think we would all be better off. Thank you.

Senator Jane E. O'Hearn, D. 12: Are there other states? Does *Vermont* or *Massachusetts* come to you? You're obviously the training center for the New England area.

Bill Simonton: I will tell some of the pieces that are important. One of the things, we give the teachers the curriculum. We put them through a two-week training program in the summer so that when they go into that class in the fall it's required that they spend two weeks training for each of those five courses.

We do continuing ed. during the year so we bring teachers into New Hampshire to keep training our teachers through the year, updates on the new software and the curriculum. And New Hampshire Technical Institute is one of six regional training centers in the country, because our teachers were having to go off to upstate New York. The other six or five are all four-year schools, and we have a training center. We can train New Hampshire, Maine, Vermont, Massachusetts teachers here and save a great deal of travel.

There are thirty-three states involved at one level or another. I would say we were the second state. New York was the first.

Senator Jane E. O'Hearn, D. 12: What other New England states are involved.

Bill Simonton: They're all sort of, *Vermont* has a school; *Massachusetts* has three or four high schools, and *Connecticut* has begun a little bit. *Maine* is interested. But they're all at really early stages. New Hampshire is well out in front on this in terms of where we are. And actually, even though there are thirty-three states, this is the first time that this kind of bill, of state support of this program has come to pass. And the whole organization nationally is looking at New Hampshire on this to see if the state is going to play a role. It really would be pretty neat for this program.

Senator Jane E. O'Hearn, D. 12: Thank you. Catherine Baird, Sugar River Valley Tech. Center, in support and wishing to speak.

Catherine Baird: Good afternoon, my name is Catherine Baird and I'm the vocational director at the *Sugar River Valley Regional Technical Center*

in *Newport*, New Hampshire. And vocational centers are now referred to as "*career and technical centers.*"

In education, administrators and staff are charged with many, many different things. And sometimes we feel like we have to be all things to all people. But when you strip it down, really we have a responsibility to the workforce. Why are we training youngsters? And I went to my first Project Lead the Way presentation not necessarily by design, but Mr. Simonton and others presented at one of our career and technology monthly meetings. And he referred to many people who are enthusiastic but don't have the momentum.

I became enthusiastic right from the beginning because the statistics are compelling. At last blush I think it was one million three hundred thousand engineers' openings are available. It's a critical shortage and there's not the supply to meet the demand. We are training students to go into the workforce, entry level, or to go on to post-secondary education. And the colleges do not have the numbers or the students are dropping out because they don't understand what it's about.

So if you look around you, everything in this room has been affected by an engineer, one way or another. And it's seems to me from all the presentations that it was kind of a no-brainer as the kids would say. So I started visiting schools and when I went into the classrooms I saw something that you so rarely see, students so actively engaged; the visitor comes and takes the teacher away and the kids, I went over because it seemed like they were almost comatose. They were so involved in what they were doing with their projects.

And is this just typical? Did you tell them to behave because guests were coming? He said no, this the way that it is. And that was the way that it was in other classrooms that I went into. I still need to have a little more evidence, so next week I'm going to be going over to a school outside of Albany, New York that has been a *Project Lead the Way* school for a long period of time; the history is there. And they have the whole continuum. But I really feel that what I will see is more of the same. What I lack is the momentum.

We have some funding available in our school district. But if there is a commitment on the part of the state, I know the momentum will be there to go not only with my enthusiasm, but the enthusiasm of others, who have had the pleasure of seeing this incredible program in application. Thank you.

Senator Jane E. O'Hearn, D. 12: And Pamela Burke, principal of *Merrimack Valley* in support.

Pamela Burke: Good afternoon, thank you for the opportunity to address you, because I am one of the schools that was fortunate enough to become part of the *Project Lead the Way* system early on.

And I want to tell you as principal of a high school with not a lot of resources, this did not come from me and it was not my original idea. I had a very active associate principal who literally forced me to go out to New York and to see this project. And the reason I'm here to speak today is to encourage the state to help with the start-up money.

We are not a wealthy district; I'm not sure that I could have been sold on the idea to expend $100,000.00. But with the matching grant that we received at that time from *Project Lead the Way*, we were able to establish one classroom. The district raised the other $50,000.00. In 1999-2000 we offered six *Project Lead the Way* classes to 120 students and had a waiting list. In 2001 we added two more classes and still had a waiting list. In 2001/2 we added a second full time staff member and a second lab, all from district money. We have 200 students in the program; we expect 240 students who have asked to be enrolled next year.

Two years ago *Merrimack Valley* had the highest per capita women enrolled in the United States. I cannot tell you I am a sole advocate for this program. Again, we make choices in schools what meets kids needs. Our kids are taking upper level math, who never did. We had 26 students in our school last year who were taking advanced placement calculus who were involved with *Project Lead the Way*. 14 graduates from our high school went on to engineering school last year.

I have worked with Jim Leon and Bill Simonton and we are impressed with the professionalism of the *Project Lead the Way* curriculum. The hands on... and I can only speak to the director of *Sugar River*, you could come and visit those classes and as my teacher said, one of my teachers, he is definitely the "guide on the side." These kids are connected; they are enthusiastic. It has changed the culture and climate of our school. And I support whatever the state can do to help. Thank you very much.

Senator Jane E. O'Hearn, D. 12: That is the last person that I have signed up. Is there anyone that would like to speak? Representative Alger, you didn't sign up?

Representative Alger: My deepest apologies for not so doing, but I was into other affairs. I deeply appreciate the chance to just quickly say my piece. For the record, I'm John Alger, representative for Grafton County 9. I would like to speak as an engineer and a member of the board of the *New Hampshire Society of Professional Engineers*, which represents about 250 professional engineers in New Hampshire.

And there was a letter in the other committee, which I will bring to you, by Matt Purcell, the president this year, endorsing the support of this bill. Maybe you already have it.

It's exciting as all get out to see a bill before the house committee, which was for the regular kids, the normal kids, and establishes goals and excitement, as you've heard from some of the testimony here, for their lives. It's really a wonderful bill and it was voted 16-1 out of the House Education Committee. And of course I imagine it would have been all of us except there always has to be the other side. But anyway we're delighted with the bill, and of course in finance it was voted 20-0. Anyhow, just briefly, I'm so enthusiastic, delighted with it.

And I want to say also that you have an advisory committee in this bill and I know that the board of the professional engineers and other engineers I'm sure would cooperate in any way useful to obtaining somebody to represent the engineers if that's what's desired on this committee. So I just put that in as a possibility too. So I appreciate your support for the bill and I hope it goes forward. And we'll do what we can to help it push. Thank you very much.

Senator Jane E. O'Hearn, D. 12: Thank you very much. Is there anyone else who would like to speak to this bill? With that I'll close the hearing on House Bill 1231.

Hearing closed at 3:00 PM

Respectfully submitted,
Merideth Chandler, secretary
Donna DuSell, transcript

Attachment (A)

Senate Education Committee
HB 1231, implementing a pre-engineering technology curriculum in public high schools
April 3, 2002

Statement of Rep. William E. Leber, of Andover, Merrimack County District One

In recent years our committee, the Public Works and Highway, has had proposals before it to fund the renovations of the high school regional vocational centers that were constructed beginning some 25 years ago. During that process we heard of the shortage of engineers and technicians by employers in NH. We heard of the relatively high dropout rates of high school students and how some students were more interested in hands–on projects rather than some academics. Also, we received testimony of youngsters who found a use for academics in the vocational area, which turned them around and they improved in all their studies.

Last year as we were processing the capital improvement budget, we were bombarded with information about the shortage of engineers and technicians in NH and that the University System needed the engineering and science buildings renovated in order to remain accredited. It was stated that it was difficult to compete for students because of the condition of the facilities.

With that information still fresh in my mind, I was invited to a meeting of Project Lead the Way and heard about the program that was working in the high schools. High schools that were fortunate enough to have a teacher who was motivated to get such a program started. It has been an outstanding success in the few schools that have implemented it. After speaking and meeting with those involved, including teachers, students, administrators, and the engineering –technology companies that support the program, **I came to the conclusion that all New Hampshire students should have an opportunity to participate in pre-engineering and technology programs.**

This legislation would do several things. It would

- Establish in statute the minimum program curriculum,
- Provide a matching public-private partnership with business to fund the program,
- Establish the authority for the department to include the initial capital improvements for each site in its capital budget request to fund the state share,
- Establish an advisory committee to oversee and promote the program,
- As amended, **provide use of a previous appropriation to grant matching funds to get the initial projects started.**

(A list of high schools that are ready to get started if state matching grants become available is included).

The sponsors have submitted amendments that were adopted by the House Education Committee and the House Finance Committee and passed by the House.

The amendment relative to funding this project was adopted by House Finance Committee. Recognizing the fiscal difficulty of securing new general fund appropriation for this project, I was advised to find an existing appropriation to fund it. **I have found a previous appropriation for regional vocational high schools that seems very appropriate for this project and is provided in the House amended version of the bill.**

I will be pleased to answer your questions about the bill. For questions relative the program itself, however, there are some experts here who are working the program and certainly more qualified to answer any of the technical or statistical questions.

I respectfully ask for your support for this legislation and for the young people who will benefit by its passage by getting a head start on preparation for college and careers. In addition, it will help fill the need for more engineers and engineering technicians in New Hampshire.

I ask for your vote of ought to pass. Thank you

HB-1231 PRE-ENGINEERING PROGRAM
LIST OF SCHOOLS

REGIONAL TECHNICAL CENTERS READY TO GO, WAITING FOR FUNDING:

CONCORD
HUOT (LACONIA)
KINGSWOOD (WOLFEBORO)
NEWPORT (SUGAR RIVER REGIONAL)
PALMER (ALVIRNE – HUDSON)
LITTLETON

COMPREHENSIVE HIGH SCHOOLS READY TO GO, WAITING FOR FUNDING:

MASCENIC HIGH SCHOOL

REGIONAL TECHNICAL CENTERS IN PLANNING STAGES, WAITING FOR FUNDING AUTHORIZATION:

EXETER
PINKERTON

REGIONAL TECHNICAL CENTERS CURRENTLY IN PROCESS OF IMPLEMENTING:

NASHUA
MILFORD
KEENE

COMPREHENSIVE HIGH SCHOOLS CURRENTLY IMPLEMENTING:

HOPKINTON
BOW
JOHN STARK
MERRIMACK VALLEY
LISBON
KEARSARGE
HILLSBORO-DEERING

UNIVERSITY OF NEW HAMPSHIRE

Department of Electrical and Computer Engineering
College of Engineering and Physical Sciences
Kingsbury Hall
33 College Road
Durham, New Hampshire 03824-3591
(603) 862-1357

January 14, 2002

Honorable William Leber
Legislative Office Building
Concord, NH 03301

Dear Bill:

I'm writing in support of HB1231-FN, an Act implementing a pre-engineering technology curriculum in public high schools in the state.

I am a Professor Emeritus of Electrical Engineering and also an Adjunct Professor of Engineering Technology at UNH. I begin teaching at UNH in January, 1952, and I continue to teach my illumination engineering course in the fall semester each year. Thus I have just completed my 50th year of teaching at UNH. I also served for 18 years on the Oyster River school board.

For sometime, I have been concerned that youngsters in our school systems who show an excitement for math and science in the early grades, do not continue that excitement through high school. As the Governor and others have noted, there is a pressing need for more technically-trained people to enter the New Hampshire workforce. HB1231-FN is a positive step in the direction of getting kids involved in engineering and technology in time for them to think about careers in those areas. (I do hope that in Section 188-E:14 you can insert .... careers in engineering and engineering technology, or allied ... UNH offers a BS in Engineering Technology. This program will move to UNH Manchester in the summer of 2002).

One very positive aspect of HB 1231-FN is that the program is project-oriented. Thus students will get hands-on technical experience, which is so important in introducing young people to engineering and engineering technology.

Thank you for being a sponsor of this bill. If I can help in any way toward its implementation, I would be delighted to do so.

Sincerely,

Joe

Joseph B. Murdoch
Professor Emeritus of EE

HB 1231 Attachment (B)

Project Lead the Way-New Hampshire
Summary

- Nine NH high schools are offering the PLTW curriculum (Hopkinton, John Stark Regional, Milford, Merrimack Valley, Kearsarge Regional, Bow, Nashua, Lisbon, Hillsboro-Deering).
- Over 500 students took PLTW courses during the 2000-01 school year. Projected student enrollment for the 2001-02 school year is at least 600.
- Twenty-seven teachers hold PLTW credentials, with approximately one-half of those credentialed to teach at least two courses.
- New Hampshire Technical Institute President Bill Simonton chairs the PLTW-NH Leadership Team and serves on the PLTW National Oversight Committee.
- The day-to-day operations of PLTW-NH are managed by the Educational Partnership of Central New Hampshire.
- NHTI is an affiliate training center providing teacher training during the months of July and August.
- Two NHTI faculty members, Steve Ryan and Bob Arrendondo, are PLTW master teachers, manage the PLTW lab at NHTI, and teach during the PLTW Summer Training Institute. In addition, Professor Ryan serves as a technical consultant to schools considering implementing PLTW-NH.
- PLTW students have three possible options for achieving dual credit for PLTW courses, including

    1. A Memorandum of Understanding between NHTI and participating high schools that includes an escrow account up to six credits
    2. Transcript credit at RIT for accredited schools up to an equivalent of six credits
    3. Transcript credit at NHTI through Project Running Start for a maximum of twelve credits.

- The PLTW Leadership Team is in the final stages of forming a 501c(3) corporation.

Project Lead the Way
Summary of National Initiative

In four years PLTW has grown to involve:

- Thirty-three states
- Three hundred forty schools
- Five hundred teachers
- thirty-five thousand students

The national training network is headquartered at Rochester Institute of Technology and includes the following affiliate training centers:

- New Hampshire Technical Institute
- University of Houston
- Purdue University
- Ferris State University
- Colorado School of Mines

The attrition rate of PLTW participants who pursue post-secondary degrees in engineering and engineering technology is less than 10%

> ***"In all the years that I have been at Merrimack Valley, no other single program has had such an impact. Students who were not connected to academics have become connected through this program."***
>
> Pamela Burke, Principal of the Year, 1999-2000

Project Lead the Way New Hampshire
Approximate Cost by Course

Introduction to Engineering Design

Computers	$25,220	
Design Jet Printer	$4,931	
Laser Printer	$1,908	
In Focus Projector	$2668	
	Total	$45,000

Digital Electronics

Equipment and Supplies	$6,000	
	Total	$6,000

Principles of Engineering

Fischertechnik POE kits	$4,200	
Fischertechnik related materials	$1,300	
Discovery Pneumatic w/SW	$1,825	
Discovery Hydraulic w/SW	$1,775	
Discovery Mechanism w/SW	$1,413	
Stress Analyzer	$2,800	
Relataed Equipment $ Materials	$2,647	
	Total	$15,000

Computer Integrated Manufacturing

Fischertechnik Supplemental kits	$2,100	
Automated Manufacturing Package	$31,000	
Related Equipment and Materials	$1,900	
	Total	$35,000

Engineering Design and Development 0

TOTAL $101,000

Speakers

SENATE EDUCATION COMMITTEE

Date: 04/03/02 **Time:** 1:30 PM

Public Hearing on: HB 1231-FN - implementing a pre-engineering technology curriculum in the public high schools in the state.

FAVOR	OPPOSED	Name	Representing	SPEAKING?
☑	☐	MARK V. Joyce	NHSAA	☐
☑	☐	Dean Michener	NHSBA	☐
☑	☐	Rep. Charles Sova	Grafton-11	☐
☑	☐	BOB FLANDERS	SEN DIST 7	NO
☑	☐	Rep. Russ Cox		NO
☑	☐	Sen. Jane OHearn		NO
☑	☐	Rep Leo Fraser		NO
☑	☐	Rep. John Thomas		YES
☒	☐	Rep Candace W Bouchard Merr 22		☐
☑	☐	REP BILL LEBER		YES ☑
☑	☐	Nancy Huntley, BAE Systems		NO
☑	☐	Paul Leather - NH Dept of Ed		YES ☑
☒	☐	Rep Jim Rausch		yes ☒
☑	☐	Rachel Walker-Bois - Nashua High Schools		☑
☑	☐	Bill Simonton NHTI		☑
☑	☐	Bill Johnson Hale & Aldrich		☑
☑	☐	Cathryn Baird Sugar River Valley Tech Center - Newport NH		☑
☑	☐	Pamela Burke, principal Merrimack Valley		☑
☑	☐	Rep John Alger		☑

Committee Report

STATE OF NEW HAMPSHIRE

SENATE

REPORT OF THE COMMITTEE

Date: April 5, 2002

THE COMMITTEE ON Education

to which was referred House Bill 1231-FN

AN ACT implementing a pre-engineering technology curriculum in the public high schools in the state.

VOTE: 3-0

2002-3235s

Having considered the same, report the same with the following amendment and recommend that the bill: **AS AMENDED OUGHT TO PASS.**

Senator Jane E. O'Hearn
For the Committee

|HB1231 Docket

Bill Title: (New Title) implementing a pre-engineering technology curriculum in the public high schools in the state and relative to the naming of the regional community-technical college system.

Date	Body	Description
6/26/2001	**H**	Introduced and ref to Education; HJ78, p1995
12/17/2001	**H**	Copy to Chairman on 1/2/2002 Report due 2/21/2002
12/17/2001	**H**	Hearing Jan 16 1:00 RM207,LOB
1/30/2002	**H**	Maj Report OTP/AM for Feb 14 (vote 16-1;Reg)
1/30/2002	**H**	Prop Comm Am{1955}; HC13, p517
2/14/2002	**H**	Reps Scanlan and Burling Susp Rules on deadline for 2nd Comm, MA 2/3VV; HJ20, p739
2/14/2002	**H**	Comm Am, AA VV; Passed with Am and ref to Finance VV; HJ20, p770
2/14/2002	**H**	Fin Div II Subcom Work & Exec Sess Feb 19 10:00 RM212,LOB
2/20/2002	**H**	Fin Maj Report OTP/AM for Mar 6 (vote 20-0;Reg)
2/20/2002	**H**	Prop Fin Comm Am{2752}; HC17, p658
3/6/2002	**H**	Fin Comm Am, AA VV; Passed with Am VV; HJ25, p985 + 1037
3/14/2002	**S**	Introduced and Ref. to Education; SJ 7, Pg.198
3/28/2002	**S**	Hearing; April 3, 2002, Room 105-A, SH, 1:30 p.m.; SC20
4/8/2002	**S**	Committee Report; Ought to Pass with Amendment {3235}, [04/10/02]; SC23, Pg.9-10
4/10/2002	**S**	Ought to Pass with Amendment {3235}, AF, VV; Ought to Pass, MA, VV; SJ 9, Pg.253-254
4/10/2002	**S**	Sen. Johnson Floor Amendment {3323}, (New Title), AA, VV; Refer to Finance [Rule 24]; SJ 9, Pg.255
4/15/2002	**S**	Committee Report; Ought to Pass with Amendment {3491}, [04/16/02]; SC25A, Pg.14-15
4/16/2002	**S**	Ought to Pass with Amendment {3491}, [Not Voted On]; SJ 11, Pg.373-374
4/16/2002	**S**	Sen. Pignatelli Moved Laid On Table, MA, VV; SJ 11, Pg.374
4/18/2002	**S**	Sen. O'Hearn Moved Remove From Table, MA, VV; SJ 12, Pg.428
4/18/2002	**S**	Ought to Pass with Amendment {3491}, AA, VV; OT3rdg, MA, VV; SJ 12, Pg.428
4/25/2002	**H**	House Conc with Sen Am, Rep Henderson MA VV; HJ38, p1445
5/2/2002	**S**	Enrolled Bill Amendment {3771}, Adopted; SJ 14, Pg.569-570
5/2/2002	**H**	Enrolled Am{3771}, Am Adopted; HJ40, p1489
5/2/2002	**H**	Enrolled; HJ44, p1527
5/2/2002	**S**	Enrolled; SJ 14, Pg.580
5/18/2002	**H**	Signed by the Governor on 5/18/2002 Eff: 7/1/2002 Chap: 0271