UW System Engineering Program Array

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Interim Senior Vice President
Office of Academic and Student Affairs

Presentation at the Education Committee of the UW System Board of Regents

December 4, 2014
### Notices of Intent for New Engineering Programs

<table>
<thead>
<tr>
<th>Institution</th>
<th>Program</th>
<th>Date</th>
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<tr>
<td>UW-Eau Claire</td>
<td>B.S. in Materials Science and Engineering</td>
<td>September 13, 2013</td>
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<tr>
<td>UW-River Falls</td>
<td>B.S. in Environmental Engineering &amp; B.S. in Agricultural Engineering</td>
<td>October 15, 2013</td>
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<tr>
<td>UW-Stevens Point</td>
<td>B.S. in Chemical Engineering &amp; B.S. in Environmental Engineering</td>
<td>December 12, 2013</td>
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<td>UW-Stout</td>
<td>B.S. in Chemical Engineering, B.S. in Electrical Engineering, &amp; B.S. in Mechanical Engineering</td>
<td>December 20, 2013</td>
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<tr>
<td>UW-Milwaukee</td>
<td>B.S. in Biomedical Engineering</td>
<td>Pre-authorization March 27, 2013</td>
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Previous UW System Engineering Studies


1988 Better Living Through Technology Report

2001 Market Analysis for Engineering Professionals in Wisconsin, Minnesota, and Illinois

2007 Engineering Education Task Force Report
State Demand for Engineers
• In which Engineering Disciplines?
• Is there Geographic Demand for Engineering Talent?

Is there a Pipeline of Qualified Students?
Key Issues Continued

If Expansion is the Solution, What is Most Cost-Efficient? Does it Increase the Engineering Talent Base in Wisconsin?
NCHEMS Study: Data Provided

Data on Supply and Demand (Current and Future Market Need) for Engineers:

- In Various Specialty Areas
- In the State
- In Different Regions within the State
NCHEMS Recommendations

The Report identifies **Five Engineering Fields** in which there is a Need in the State of Wisconsin:

- Chemical
- Civil
- Electrical
- Industrial
- Mechanical
NCHEMS Findings Include

- Wisconsin is a Net Exporter of Engineers
- Retirements are not Expected to Create Acute Shortages of Engineers
- Engineering Wages in Wisconsin are Lower than in Bordering States and Nationally
NCHEMS Recommendations on Regional Demand for New Engineering Programs

1. No New Engineering Programs should be Created in:

Region 1 (Western WI/Minneapolis)
Region 2 (Northern WI)
Region 3 (Wausau)
Region 4 (Western WI from North of Platteville to North of La Crosse)
NCHEMS Recommendations on Regional Demand for New Engineering Programs

2. Expand Existing Capacity at:
   - UW-Madison (Region 6)
   - UW-Milwaukee (Region 7)
3. Conduct a Targeted Study to Determine:

   • If a Chemical Engineering Program should be added to UW-Milwaukee, or

   • Whether Priority should be given to Expanding Capacity for Civil, Electrical, Industrial, and Mechanical Programs
4. Create a Collaborative Engineering Program in Region 5

(At UW-Green Bay and/or UW-Oshkosh, with the Involvement of UW-Madison and/or UW-Milwaukee)
Of the Nine UW Institutions that Responded:

**Five Institutions** were Overall Accepting of the Report’s Recommendations and Made Additional Observations

**Four Institutions** were Critical of the Report’s Recommendations and Presented Alternative Data and Recommendations
Institutional Support for the NCHEMS Study

Additional Employer/State Demand Could Be Satisfied Through:

- Articulation Agreements and Satellite Programs
- Cooperative and Collaborative Programs
- Levering Existing Capacity
- Expanding Enrollments at Existing Locations at a Lower Cost to the UW System
Institutional Criticism of the NCHEMS Study

Shortcomings in Data Analysis:

- Flawed Method to Assess Engineering Degree Supply and Demand in Specific Regions
- Faculty Expertise/Resources May Already Exist at Campuses Proposing Engineering Degrees
- Limited Analysis of Future Demand in Favor of a Present Snapshot Analysis
- No Study of the Problem “On the Ground”
# Consortial Proposal

## Northwest Wisconsin Engineering Consortium

- UW-Stout
- UW-River Falls
- UW-Eau Claire

### Proposed Programs

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<td>Mechanical Engineering</td>
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<td>Electrical Engineering</td>
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<td>UW-Eau Claire</td>
<td>Materials Science and Engineering</td>
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Decision Options

1. No New Programs will be Authorized.

2. Build on the Existing Program Array at Institutions Currently Operating Successful Engineering Programs; or

3. Grant Additional Engineering Program Authorizations for:
   - Stand-Alone Programs
   - Consortial Programs
   - Partnerships with Existing Programs
   - Stepwise Growth
Points of View

Chancellor Meyer
UW-Stout

Chancellor Shields
UW-Platteville

Chancellor Patterson
UW-Stevens Point
Regent Discussion