Duke Energy Academy at Purdue
Careers in Engineering and Technology

Dr. Robert Bowen, P.E.
Founder & Chairman

Teddy Deahl
Account Executive / Energy Engineer
WOULD YOU LIKE THE CHICKEN ADobo OR ROAST BEEF AU JUS?

HMM... THAT'S A HUGE DECISION... I NEED TO TEXT FOR SOME ADVICE...

COULDN'T WE JUST ASK YOUR FIANCE?

THAT'S WHO I JUST TEXTED!

Go with chicken!!
## How They Ranked

<table>
<thead>
<tr>
<th>School</th>
<th>MAJORS THE SCHOOL RANKED IN</th>
<th>NUMBER OF STUDENTS 15-25</th>
<th>IN STATE</th>
<th>OUT OF STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania State University</td>
<td>Accounting, Business, Finance, Information Technology</td>
<td>12,458</td>
<td>$15,250</td>
<td>$27,114</td>
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<tr>
<td>Texas A&amp;M University</td>
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<td>14,039</td>
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<tr>
<td>University of Illinois</td>
<td>Agriculture, Business, Chemistry</td>
<td>15,950</td>
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<tr>
<td>Purdue University</td>
<td>Architecture, Chemistry, Engineering, Information Technology</td>
<td>16,050</td>
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<tr>
<td>Arizona State University</td>
<td>Accounting, Business, Finance, Information Technology</td>
<td>17,261</td>
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<tr>
<td>University of Michigan</td>
<td>Accounting, Business, Engineering</td>
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<tr>
<td>Georgia Institute of Technology</td>
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<tr>
<td>University of Maryland</td>
<td>Architecture, Business, Engineering, Information Technology</td>
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<tr>
<td>University of Florida</td>
<td>Accounting, Business, Finance, Information Technology</td>
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<tr>
<td>Carnegie Mellon University</td>
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<tr>
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<td>Virginia Polytechnic Institute</td>
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<td>Cornell University</td>
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<tr>
<td>University of California - Berkeley</td>
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<tr>
<td>University of North Carolina</td>
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<td>Rutgers University</td>
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<td>University of Notre Dame</td>
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<td>Massachusetts Institute of Technology</td>
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<td>University of Southern California</td>
<td>Accounting, Business, Finance, Information Technology</td>
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<tr>
<td>University of North Carolina</td>
<td>Accounting, Business, Finance, Information Technology</td>
<td>34,000</td>
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</tbody>
</table>

*Nearly 450,000 companies who took the WSJ College Survey ranked their top colleges. Nearly 1,000 companies responded to the survey. Nearly 80% of companies who took the survey agreed that the survey was helpful in guiding their student's college search.*
<table>
<thead>
<tr>
<th>University</th>
<th>Annual return over 20 years (%)</th>
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</thead>
<tbody>
<tr>
<td>University of Virginia</td>
<td>17.6</td>
</tr>
<tr>
<td>Georgia Tech</td>
<td>17.1</td>
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<tr>
<td>Harvard</td>
<td>15.1</td>
</tr>
<tr>
<td>William and Mary</td>
<td>14.8</td>
</tr>
<tr>
<td>University of Washington</td>
<td>14.8</td>
</tr>
<tr>
<td>Stanford</td>
<td>14.2</td>
</tr>
<tr>
<td>MIT</td>
<td>13.9</td>
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<tr>
<td>U.C. Berkeley</td>
<td>13.5</td>
</tr>
<tr>
<td>Caltech</td>
<td>13.3</td>
</tr>
<tr>
<td>Dartmouth</td>
<td>13.3</td>
</tr>
<tr>
<td>Yale</td>
<td>13.3</td>
</tr>
<tr>
<td>Princeton</td>
<td>13.2</td>
</tr>
<tr>
<td>Purdue</td>
<td>13.2</td>
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<tr>
<td>UCLA</td>
<td>12.8</td>
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<tr>
<td>South Dakota School of Mines</td>
<td>12.7</td>
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<tr>
<td>Harvey Mudd College</td>
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<tr>
<td>Columbia</td>
<td>12.6</td>
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<tr>
<td>Brigham Young</td>
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<tr>
<td>University of Pennsylvania</td>
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<tr>
<td>Brown</td>
<td>12.1</td>
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<tr>
<td>Babson</td>
<td>11.8</td>
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<td>Amherst</td>
<td>11.6</td>
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<tr>
<td>Manhattan</td>
<td>11.0</td>
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<tr>
<td>North Dakota State University</td>
<td>11.0</td>
</tr>
<tr>
<td>New York University - Poly</td>
<td>10.9</td>
</tr>
<tr>
<td>Stevens Institute of Tech.</td>
<td>10.6</td>
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<tr>
<td>Carnegie Mellon</td>
<td>10.2</td>
</tr>
<tr>
<td>Georgetown</td>
<td>9.9</td>
</tr>
</tbody>
</table>
Expected Salaries

• Non – high school grad - $23,000
• High school grad - $33,000
• 2 year college - $39,000
• 4 year college - $55,000
• Delta - $22,000 per year
• $ 1 million in a life time
STEM

• 250,000 unemployed in Indiana
• 2.5 jobs for every STEM grad
• For every (5) non-STEM grads, there is one job
• Many of today’s job opportunities are in supervision
Leadership

• Maintain High Values & Standards
• Have Genuine Concern for Others

Harvard Business School
Bowen by the numbers
Your Proven Long-term Partner

- 77 Employee Owners
- 70 Graduate Engineers
- 16 Licensed P.E.’s
- 64 Full-Time Field Supervision
- 45+ Years in Business

800 Employees
$1.3 Billion Revenue past 5 Years
$600mil Bonding Capacity
0.69 Recordable Rate

The Top 400 Contractors
#292 in Nation
#46 in Power
#30 in Water

Purdue University
Engineering vs. Engineering Technology

Source: ASME.org
What Makes A Good Engineer?

• Math and science oriented
• Good with your hands - shop
• Some intellectual curiosity
• Problem solver
• A desire to go to the head of the class
• Expected of Purdue grads
• Competitive
The Road to Success

• Have High Expectations
• Make A’s at school
• Give Back
• Believe you can make a difference
• Positive attitude
• Leaders build leaders
• It is not about you
My Personal Goals

1. Bowen Engineering
2. Wife
3. Kids (and Grandkids)
4. Health
5. Giving Back
What is a Typical Career?

- Project Engineer
- Estimating
- Project Support
- Project Manager
- Project Responsibility
- Senior Manager
- Multiple Projects
- Area Manager
- Company Executive
Benefits of an Engineering Degree

• Shortage of engineers – job opportunities
• Better wages/salary
• More rigorous curriculum – broader education
• Greater opportunity for advancement
• Professional license
• Launching pad to other professions
The Hidden Values of being an Engineer

- Value driven - Purdue
- Project driven
- Field experience
- Cutting edge of industry
- Certain prestige
- Pride
A Broader View of Engineering

- Build America – our country is desperate for graduate engineers
- Service to community
- Bowen Engineering hires graduate engineers
- Our customers love us
Future of Power/Energy

• Demand will exceed supply
• Current system is tired and needs upgrading -
• Clean fuels will take over
• Foreign competition
Pipe Gallery was pre built on stools in the yard ¼ mile away.
5 – 12” carbon steel pipelines were installed prior to the sheeting being installed.
Bridge was transported on 2 Goldhoffers rented from and operated by Barnhart of Knoxville TN.
Change = Innovation
= Radical Improvement

$300,000 SAVINGS
Meadow Lake Wind Farm
I 65
DC Cook Nuclear - Dry Cask Storage
A little about Teddy

1.) Example of what inspired them to be in engineering (Curiosity)
2.) What inspired you to work for Bowen? (Bowen seemed like they were changing the Performance Contracting industry and I just wanted to be on the front of the bell curve)
3.) What are some Challenges and Rewards? (Every community that I save money for is a huge reward, the challenge is finding ways to save them money)
4.) What advice would you give? (Don’t give up, if engineering was easy then everyone would do it. Jed Holt, former president of Bowen, told me once that all you have to do to be invaluable is to find out what other people don’t like to do and learn to love to do that.)
5.) What is Industry perception about engineering needs? (I think communities want engineers that are truly passionate about what they do)
6.) What is one suggestion for teachers wanting to inspire students? (Give the students problems that they can not solve. Meaning the first problems I couldn’t solve were ones I got at Purdue, and that was ok, it’s more about how you solve the problem than the answer. That is a tough thing for incoming freshman to grasp, myself included)
Water & Wastewater Distribution/Collection

City of Lafayette (CSO Separation)

Scope: $20.5 million

Scope:

- Rehabilitation of Sewers and Laterals, Cured-in-Place Sewer lining, Paving
- Storage Building Construction for the WWTP
- Sustainable Storm Water Detention Ponds
- Water Main Relocation
- Roadway Reconstruction
- (2) Rain Garden Solutions
Wastewater Treatment System
Town of Russiaville (Sewer & Plant Rehab)
Scope: $0.826 million

Scope:
- New Influent Pumps
- New Blower Package
- Clarifier Improvements
- New Emergency Generator
- 2022’ of 8” CIP
- 1384’ of 10” CIP

➢ Construction savings allowed more Cured in Place Lining to be done by the Town
Wastewater Treatment System
Town of Plainfield (DOC Project)
Scope: $4.26 million

Scope:
- Resolve Infiltration & Inflow Issues
- Sewer Replacement
- Cured-in-place Sewer Lining
- Decommission Lift & Grinder Station

❖ Over 7,000 feet of lining
Wastewater Treatment Plant

City of Huntington (Rehabilitation)
Scope: $10.5 million

Scope:
• New Screening, Grit Removal, Blowers, RAS/WAS Screw Pumps, Sludge Thickening
• Digester Retrofit
• BIO-Solids Storage

✔ Installed in 1 Year for SRF
✔ Green Project Reserve (2.5% Interest Rate)
✔ Over 1,000,000 dollars in Construction Savings to Date
Questions
Advice to my Grandson
On His First Job

• Be early to work.
• Be watchful of what is going on around you. Offer to help the guy in the next cubicle.
• Ask questions.
• Positive attitude.
• Compliment club.