A. Department/Unit/College Goals and Priorities for the Past Year
The goals of the Industrial and Manufacturing Engineering (IME) Department are to continue to fulfill our mission of teaching, research, and service in industrial engineering & management and manufacturing engineering; and to participate in the land grant mission of the university through engagement in state, regional and national affairs. The Department offers B.S. and M.S. degrees in industrial engineering & management (IE&M) and manufacturing engineering (MfgE), and a Ph.D. degree in industrial and manufacturing engineering. IME is served by nine faculty and five technical and office staff. Two new faculty members, Eğilmez and Khoda, joined the department in 2013. The Department has 174 undergraduate students and 21 graduate students. Priorities for the past year were to
- Integrate two new faculty members into the department.
- Continue efforts to solve long-standing teaching (and research) laboratory space constraints.
- Attract, recruit, and retain a diverse group of highly qualified students into our undergraduate and graduate programs.
- Strengthen relationships with alumni and employers of our students.
- Review and update all program curricula and course schedules.
- Continue to establish department policies and structures.
- Provide opportunities for professional development of faculty and staff.
- Provide extension support focused on industrial and manufacturing engineering.

B. Executive Summary of Accomplishments
a. Teaching
- Received reaccreditation for undergraduate programs (IE&M and MfgE) by the Engineering Accreditation Commission of the ABET, most recently in August 2013 for another six years (through 2019) following an extensive review, including a campus visit by the reviewers. Reaccreditation of the MfgE program required submission of an Interim Report in June 2014.
- Ranked 35th in the nation in the number of degrees awarded (IE&M and MfgE).
- Introduced several new courses: IME 433/633-Additive Manufacturing; IME 766-Robust Design Methods; IME 767-Response Surface Methodology.
- Developed a new Assessment Manual to enhance assessment of student learning in our undergraduate programs.
- Added a laboratory component to IME 460-Evaluation of Engineering Data.
- Updated prerequisites for all required courses in our undergraduate programs.
- Restructured our capstone experience courses so that IME 489-Capstone course is offered both semesters. Student projects continue to be sponsored by companies in the region.
- Enhanced the laboratory component of IME 427-Electronics Manufacturing by partnering with CNSE. Through this partnership we have secured access to CNSE facilities, including professional-grade equipment, and technician support for the laboratory portion of IME 427.
- Added new machine vision equipment to Automation and Control laboratory in Dolve 142 (through donations from DataLogic).
- Created additional computer/project work space for capstone students by restructuring the human factors laboratory in CIE 212. Through card key access, IME students working on their capstone projects have access to this space and additional computers and printers at all times.
- Led the Innovation Challenge program at NDSU and mentored several successful student entries for various design and innovation competitions (Wells).
- Received the Society of Health Systems Student Scholarship Award (Scholl, IE&M Major).
- Offered machine vision training to NDSU students local manufacturers through partnership with DataLogic and hosted the American Welding Society, Certified Welding Inspector training.
- Provided machine shop safety and welding training for engineering students (Choate, Myrick).
b. Research/Scholarly/Creative Activities
   • Received funding for **17 new projects** in 2013 totaling $518,225 (*submitted 37 proposals*).
   • Published **49 peer-reviewed publications** in journals (30) or conference proceedings (19).
   • Filed **six patent discoveries** (Marinov, Wells).
   • Graduated **six Ph.D. students**.
   • Created IME **Additive Manufacturing Laboratory** to support research and teaching.
   • Received the Sudhir Mehta Memorial Faculty **International Travel Award** in 2013 (Shi).
   • Received recognition for several notable publications: Shi’s article was among the **Top 25 Hottest articles** published Spring 2013 in the *Energy Economics* journal. Article co-authored by Bilen-Green received **Best Paper Award by ASEE**.
   • Received a **Graduate School Doctoral Dissertation Award** (student advised by Shi).
   • Hosted **Fulbright Faculty Researcher** Rostyslav Lesyuk from Ukraine (Marinov) and **Postdoctoral Fellow** Wichai Chattinnawat from Thailand (Bilen-Green).
   • Served as **Chief Technology Officer** in **start-up company** Uniqarta, Inc, incorporated in 2013 with an objective commercialization of the Laser-enabled Advanced Packaging technology developed at NDSU (Marinov).
   • Gave **interviews and invited talks** at national, international conferences on the laser-assisted electronics manufacturing technology developed by IME Researchers (Marinov).

c. Service/Outreach/Extension
   • Provided **National Society Leadership**: Veteran Engineering Resource Center (Farahmand), Wind Energy Committee, ASME (Shi); SME (Wells); QCRE, IIE (Yadav).
   • Maintained Department **Membership in MINN-DAK** Manufacturing Association Board (Farahmand, Lehman).
   • Provided Industrial and Manufacturing Engineering **Extension assistance to manufacturing companies** in the State (Lehman).
   • Recognized nationally in 2013: received the **WEPAN University Change Agent Award** (Bilen-Green); Nominated for the **IMAPS JohnA.Wagnon Technical Achievement Award** (Marinov).
   • Provided support to NDSU Society of Women Engineers activities.
   • Participated in the NDSU NATURE program (Yadav).

C. Department/Unit/College Goals and Priorities for the Coming Year
   • Establish department policies and structures.
   • Develop minor, certificate programs in engineering management and advanced manufacturing.
   • Attract, recruit, and retain a diverse group of highly qualified students.
   • Strengthen relationships with alumni and employers of our students.

### Research, Scholarly, and Creative Activities

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
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<tbody>
<tr>
<td>Peer Reviewed Publications (published in 2013)</td>
<td><strong>49</strong></td>
</tr>
<tr>
<td>National or International Invited Presentations (in 2013)</td>
<td><strong>9</strong></td>
</tr>
<tr>
<td>Juried presentations/performances/exhibitions (in 2013)</td>
<td><strong>-</strong></td>
</tr>
<tr>
<td>Research Grants and Contracts (New funded projects including industry sponsored student projects in 2013)</td>
<td><strong>17</strong></td>
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<tr>
<td>Cumulative Amount: $</td>
<td><strong>$518,225</strong></td>
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