Thank you for the time and effort you put forth in your report. Through the USAP process, we are working to create a culture of continuous improvement; setting specific and measurable goals is an important step in the process of moving IPFW toward this culture of improvement. Part of this effort is getting individuals and units at IPFW to think differently about planning and the future. The work of the Center of Excellence in Systems Engineering is critical to IPFW and we greatly appreciate the time you spent on this significant endeavor. Thank you again for being part of this important initiative.

Criterion: #1: Mission - How does your unit support the mission of the university? This may include your mission and vision statements. (no more than 200 words)

Question: Mission - How does your unit support the mission of the university? This may include your mission and vision statements. (no more than 200 words)

Mission Statement:

The IPFW Center of Excellence in Systems Engineering supports the strategic plan of the university through the following functional requirements:

- Offer IPFW students an education in Systems Engineering that enables the student to develop superior products and lead enterprise change.
- Provide the industries and enterprises of Northeast Indiana with the leadership and Systems Engineering capability to sustain and grow their businesses.
- Serve as a conduit between students and industry for research, enterprise improvement, and employment opportunities.

Vision Statement:

The IPFW Center of Excellence in Systems Engineering will be nationally and internationally recognized for its programs which promote research, publication, collaboration, and industrial application. The IPFW Center of Excellence in Systems Engineering will also be a leader in demonstrating that systems thinking applies to all enterprises, from manufacturing to healthcare, from defense systems to education.

Goals:

The goals for the Center are taken directly from our Mission and Vision Statements:

1. Educate students with our signature Master’s degree program in Systems Engineering.
2. Engage enterprises with a Systems Engineering design process for economic advancement and sustainability.
3. Connect students and industry with research, collaboration, and employment opportunities.
4. Pioneer advancements in the field of Systems Engineering through publication and collaboration with IPFW, national, and international faculty.
#2: Accomplishments - Please list significant accomplishments from the last three years as they align with Plan 2020 goals

**Question:** I. Foster Student Success - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area I: Foster student success.

Foster Student Success

- Semester projects integrated into SE530, SE540 and SE550 to facilitate student learning of theory and application of theory to industrial problem.
- Directed study for two Masters in Technology students in Lean Manufacturing System Design
- Presently supporting two GRA’s with funding
- Connecting graduate students with local industry research projects

**Question:** II. Creation of Knowledge - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area II: Promote the Creation, Integration, and Application of Knowledge.

Promote the Creation, Integration, and Application of Knowledge

- Publications
  - One book in process and one book chapter
  - One journal and five conference papers including Best in Conference award at Engineering Lean Six Sigma - Lean Educator Conference in Orlando, FL
- Enterprise Design and Leadership (EDL) Lab development (one of two labs with the SE Center) for collaborative learning and enterprise system design with local organizations and businesses
- Systems Research Lab (SRL) (the second SE Center Lab) for computer simulation, analysis and rapid prototyping

**Question:** III. Regional Hub - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area III: Serve as a Regional Intellectual, Cultural, and Economic Hub for Global Competitiveness.
Serve as a Regional Intellectual, Cultural, and Economic Hub for Global Competitiveness

Grants

- Co-Principal Investigator - Allen County and Fort Wayne Nonlinear Power Amplifier Equipment Grants ($325,000)
- Talent Initiative / Lilly Foundation Equipment Grant ($500,000)

Applied Research / Technical Assistance Projects with Industry and Community Leadership:

- ThermaTru Doors, Butler, IN ($25,000)
- Oji Intertech, North Manchester, IN ($30,000)
- Rogers Electro-Matics, Syracuse, IN ($25,000)
- Bendix Commercial Truck, Huntington, IN ($40,000)
- Community Foundation of Greater Fort Wayne – Allen County Children’s Health Improvement Program ($25,000)

TAP Projects:

- National Office Furniture, Jasper, IN ($7,500)
- ThermaTru Doors, Butler, IN ($7,500)
- BioPoly, Inc., Fort Wayne, IN ($7,500)
- Steffy Wood Products, Angola, IN ($7,500)
- Mullinix Packages, Inc., Fort Wayne, IN ($7,500)

SE Center Funding of Non-SE Center Laboratories:

- Engineering Modeling and Simulation Laboratory ($65,000)
- Finite Element Analysis Software for Engineering faculty research ($7,500)
- Advanced Manufacturing Laboratory ($15,000)
- Coordinate Measurement Machine for MCET Quality Laboratory ($11,000)

**Question:** IV. - Create a Stronger Univ - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area IV: Create a Stronger University through Improving the Support of Stakeholders and the Quality and Efficiency of the Organization.

Create a Stronger University through Improving the Support of Stakeholders and the Quality and Efficiency of the Organization

- Development of Advisory Board for SE Center
- Support of the NE Indiana Advanced Manufacturing / Lean Network Meetings (held at EDL) and serve on Advisory Board
- Participant in Kosciusko County Chapter of the NE Indiana Advanced Manufacturing / Lean Network with presentation at CTB and participant in Wabash Valley Lean Network with presentation at Rolls Royce
- Member of IPFW Grad Council and IPFW representative to Purdue University Graduate Council
**Question:** Other Accomplishments - Please list any other significant accomplishments from the last three years that do not align with Plan 2020.

- Board of Directors, Institute of Industrial Engineers (IIE), Lean Division
- Best of Conference Paper – Engineering Lean, Six-Sigma Conference, Orlando, FL.

**Criterion:** #3: Accreditations - Program specific accreditation and status

**Question:** Accreditations - What program-specific accreditations and status do you have, if any?

Purdue University Master’s Degree Program - Governed by Purdue University Graduate Council.

No Formal accreditation required since it is a program administered by the Purdue University Graduate School.

**Question:** Constraints/Benefits - How do these accreditations constrain or benefit the work of your unit, if applicable?

**Criterion:** #4: Laws and Mandates - Federal and state laws or mandates that your unit addresses

**Question:** Federal and State Laws - What federal and/or state laws or mandates do you address, if any?

**Question:** Constraints/Benefits - How do these federal and state laws or mandates constrain or benefit the work of your unit?

**Criterion:** #5: Inefficiencies - Activities that you spend resources on inefficiently or in ways that do not support the mission.

**Question:** Inefficient use of resources - On what activities, if any, do you spend resources (money, time, people, etc.) inefficiently or in ways that do not support the mission of your unit or the university? List as many as apply.

**Criterion:** #6: IR and Budget Review - Review of your department profile and budget

**Question:**
Contextualize IR data - Upon review of your IR Department Profile (for academic units) and FY 14-15 Budget information, are there any data you want to correct or contextualize? To view your profile or budget visit the Office of Institutional Effectiveness website: http://www.ipfw.edu/offices/ir/profiles/

The SE Center is missing from this profile. Website accessed 15 DEC 14.

**Criterion:** #7: Goal One - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Task Force:**

1. **Comment on the specificity of the goal:**
   
   Not specific. How many students? Unclear why would a center’s goal be education of Master students.

2. **Comment on the goal's measures:**
   
   Metrics are vague. Metrics need to include baseline and percentage increase.

3. **Comment on the unit's ability to achieve the goal (include a consideration of the departmental profile and budget data):**

   Uncertain because the goal is too ill-defined

4. **Comment on the goal’s relevance:**

   Not a relevant goal for a center

5. **Comment on the timeline of the goal:**

   Not measurable

   Possible opportunities for collaboration or suggestions for addressing a gap:

   This goal should be associated with a department.

**Question:** Unit Goal - What is your unit goal?

Educate students with our signature Master's degree program in Systems Engineering.

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.
I.A.2 Use assessment data to improve student learning.

I.B.1 Increase opportunities for engaged and experiential learning including service learning and internship programs.

1.B.3 Expand number of degree programs that have gateway courses.

I.B.5 Transform the concept of the college classroom and the delivery of education.

I.C.1 Develop and promote interdisciplinary programs where there are sufficient university assets available and anticipated employment needs.

I.C.3 Promote academic programs for international market.

I.C.4 Expand support for international students

I.C.7 Establish links between baccalaureate and post-baccalaureate programs.

I.C.8 Respond to regional demand with appropriate post-baccalaureate credentials.

I.E.1 Identify and develop signature programs that respond to regional needs, build on faculty expertise, and uniquely distinguish IPFW from other institutions.

I.E.2 Develop activities and experiences that promote success in student achievement through programs with strong student learning outcomes, high graduation rates, and strong job placement prospects.

I.E.3 Build and strengthen relationships with regional partners to increase research and scholarly collaborations in signature programs.

I.E.4 Promote majors and programs with strong job placement opportunities in the region and beyond.

II.A Project future regional, national, and international demand for research and collaboration.

II.B Promote mentoring relationships between faculty and students engaged in creation, integration, and application of knowledge.

II.C Promote the development of opportunities for faculty and student engagement with the community for the application and integration of knowledge.

IV.B.3 Eliminate process barriers in enrollment management that impact student achievement.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

High

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?
Teach classes in Systems Engineering, develop laboratories for classes, and establish semester-long projects.

Promote enrollment in SE program, recruit students through Center events, projects, and company site visits.

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

Increase the number of graduate students in SE program.

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

No issue at this time

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

No issue at this time

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

This is an on-going goal of the Center

**Criterion:** #8: Goal Two - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Task Force:**
CESE Center of Excellence in Systems Engineering

1. Comment on the specificity of the goal:

   Not specific

2. Comment on the goal's measures:

   Metrics are vague. Metrics need to include baseline and percentage increase.

3. Comment on the unit's ability to achieve the goal (include a consideration of the departmental profile and budget data):

   Uncertain because the goal is too ill-defined

4. Comment on the goal's relevance:

   Not a relevant goal for a center

5. Comment on the timeline of the goal:

   Not measurable

   Possible opportunities for collaboration or suggestions for addressing a gap:

**Question:** Unit Goal - What is your unit goal?

   Engage enterprises with a Systems Engineering design process for economic advancement and sustainability.

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

   III.A Expand meaningful collaborations and research opportunities with regional, national, and global partners.

   III.D Provide non-credit enrichment experiences for the community.

   III.E Provide leadership in regional economic development.

   III.F Serve as an exemplar of free and open discourse.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

   High

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

   Sponsored research, TAA projects, TAP projects, IN-MaC projects
Question: Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

Number of industry and community projects, Number of Center Researchers

Question: Resources - Are you able to accomplish this unit goal with your current resources?

No issue at this time

Question: Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

Question: Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

No issue at this time

Question: Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

This is an on-going goal of the Center

Criterion: #9: Goal Three - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

Task Force:
1. Comment on the specificity of the goal:
   Not specific

2. Comment on the goal's measures:
   Metrics are vague. Metrics need to include baseline and percentage increase.

3. Comment on the unit's ability to achieve the goal (include a consideration of the departmental profile and budget data):
   **Uncertain because the goal is too ill-defined**

4. Comment on the goal's relevance:
   Not a relevant goal for a center

5. Comment on the timeline of the goal:
   Not measurable

Possible opportunities for collaboration or suggestions for addressing a gap:

**Question:** Unit Goal - What is your unit goal?

Connect students and industry with research, collaboration, and employment opportunities.

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

I.B.5 Transform the concept of the college classroom and the delivery of education.

I.C.1 Develop and promote interdisciplinary programs where there are sufficient university assets available and anticipated employment needs.

I.E.1 Identify and develop signature programs that respond to regional needs, build on faculty expertise, and uniquely distinguish IPFW from other institutions.

I.E.2 Develop activities and experiences that promote success in student achievement through programs with strong student learning outcomes, high graduation rates, and strong job placement prospects.

I.E.3 Build and strengthen relationships with regional partners to increase research and scholarly collaborations in signature programs.

I.E.4 Promote majors and programs with strong job placement opportunities in the region and beyond.

III.A Expand meaningful collaborations and research opportunities with regional, national, and global partners.

III.E Provide leadership in regional economic development.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

High

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

When engaged in industry projects promote SE program, industry research and collaboration for graduate students

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

Number of funded graduate students engaged in research, Percentage of graduate students engaged in research, percentage of graduate student employed upon completion of the SE Masters Degree program

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

No issue at this time

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?
**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

No issue at this time

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

This is an on-going goal of the Center

**Criterion:** #10: Goal Four - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Task Force:** 1. Comment on the specificity of the goal:

Not specific

2. Comment on the goal's measures:

Metrics are vague. Metrics need to include baseline and percentage increase.

3. Comment on the unit’s ability to achieve the goal (include a consideration of the departmental profile and budget data):

Uncertain because the goal is too ill-defined

4. Comment on the goal’s relevance:

Not a relevant goal for a center

5. Comment on the timeline of the goal:

Not measurable

Possible opportunities for collaboration or suggestions for addressing a gap:

**Question:** Unit Goal - What is your unit goal?

Pioneer advancements in the field of Systems Engineering through publication and collaboration with IPFW, national, and international faculty.

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.
II.A Project future regional, national, and international demand for research and collaboration.

II.B Promote mentoring relationships between faculty and students engaged in creation, integration, and application of knowledge.

II.C Promote the development of opportunities for faculty and student engagement with the community for the application and integration of knowledge.

II.A Expand meaningful collaborations and research opportunities with regional, national, and global partners.

III.E Provide leadership in regional economic development.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

High

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

Development and enhancement of prior research developed while at MIT with the MSDD, refinement of Collective System Design and use of Leadership and Learning Organization Principles, expand application of SE to various industry clusters and community organizations, determine most valuable certifications for industry clusters.

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

Number of research projects, number of publications, number of reports and student theses.

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

No issue at this time

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

No issue at this time

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

Yearly assessment of actions identified above.
#11: Goal Five - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

#12: Goal Six - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.
**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

**Criterion:** #13: Goal Seven - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.
Question: Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

Question: Actions - What action(s) does your unit plan to take to support this unit goal?

Question: Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

Question: Resources - Are you able to accomplish this unit goal with your current resources?

Question: Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

Question: Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

Question: Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

Criterion: #14: Goal Eight - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

Question: Unit Goal - What is your unit goal?

Question: IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

Question: Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.
CESE Center of Excellence in Systems Engineering

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

**Criterion:** #15: Goal Nine - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?
**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

**Criterion:** #16: Goal Ten - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?
**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?