

# ILO Summit

## The role of the Sustainability Director

### June 13, 2013

Georgia Institute of Technology | Milwaukee School of Engineering | North Carolina A&T State University | Purdue University  
University of Illinois, Urbana-Champaign | University of Minnesota | Vanderbilt University



# Job description

**Title:** Sustainability Director of the NSF Center for Compact and Efficient Fluid Power

**Employment Type:** Managerial Professional (P&A)

**College:** Science and Engineering

**Department:** Center for Compact and Efficient Fluid Power (Mechanical Engineering)

**Salary:** From \$65,000; Commensurate with Experience

## General Summary of Position

The role of the Sustainability Director is to lead the efforts to procure funding; provide managerial support of research; and to improve and expand experimental facilities. The Sustainability Director provides project coordination and leadership to meet the goals and objectives of the Center's research and financial sustainability strategy. The Engineering Research Center for Compact and Efficient Fluid Power (CCEFP) is comprised of 7 universities, many affiliated partners, and 53 industry member partners (<http://ccefp.org/about-us>). This position reports to the CCEFP Industrial Liaison Officer (ILO).

## Required/Preferred Qualifications:

### Required:

Minimum B.S. in engineering or related area

Minimum 3 years of professional engineering experience. 6 mos. Credit will be given for every 1 year of research experience as a graduate or post-doctoral student.

Minimum 3 years' experience in internal and external proposal writing

Familiarity with practical and theoretical aspects of fluid power and control

Experience managing experimental facilities

Successful project management experience

### Preferred Qualifications:

Master's Degree or Ph.D. in engineering or business or related field

10 years of professional engineering experience

3 years successful experience in obtaining external research funding

Successful project management experience in a decentralized organization

Familiarity with fields and technologies that can benefit from the use of fluid power

## Major Duties/Responsibilities

60% - Support the Center's sustainability strategy by researching, identifying, and communicating potential sources of funding and targeting large projects by creating teams with university and industry, and provide help to Primary Investigators in obtaining funding to support research projects and program development opportunities. Planning and developing resources for infrastructure in new experimental facilities and/or improvements to existing facilities.

40% - Provide coordination and management support for research. Duties include, but are not limited to the coordination of project reviews, annual report coordination, writing, and research budget coordination. The Sustainability Director works with the ILO in filing disclosures, technology transfer and licensing agreements



# Position refinements

Own the Center's sustainability plan. This includes developing the strategy, obtaining buy-in from key stakeholders, identifying critical tactics that must be successfully executed, assigning goals and ownership, tracking progress, etc.

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ERCs are too lean to afford the luxury of 100% dedication so expect to have to help with other important tasks. Places a premium on focusing.

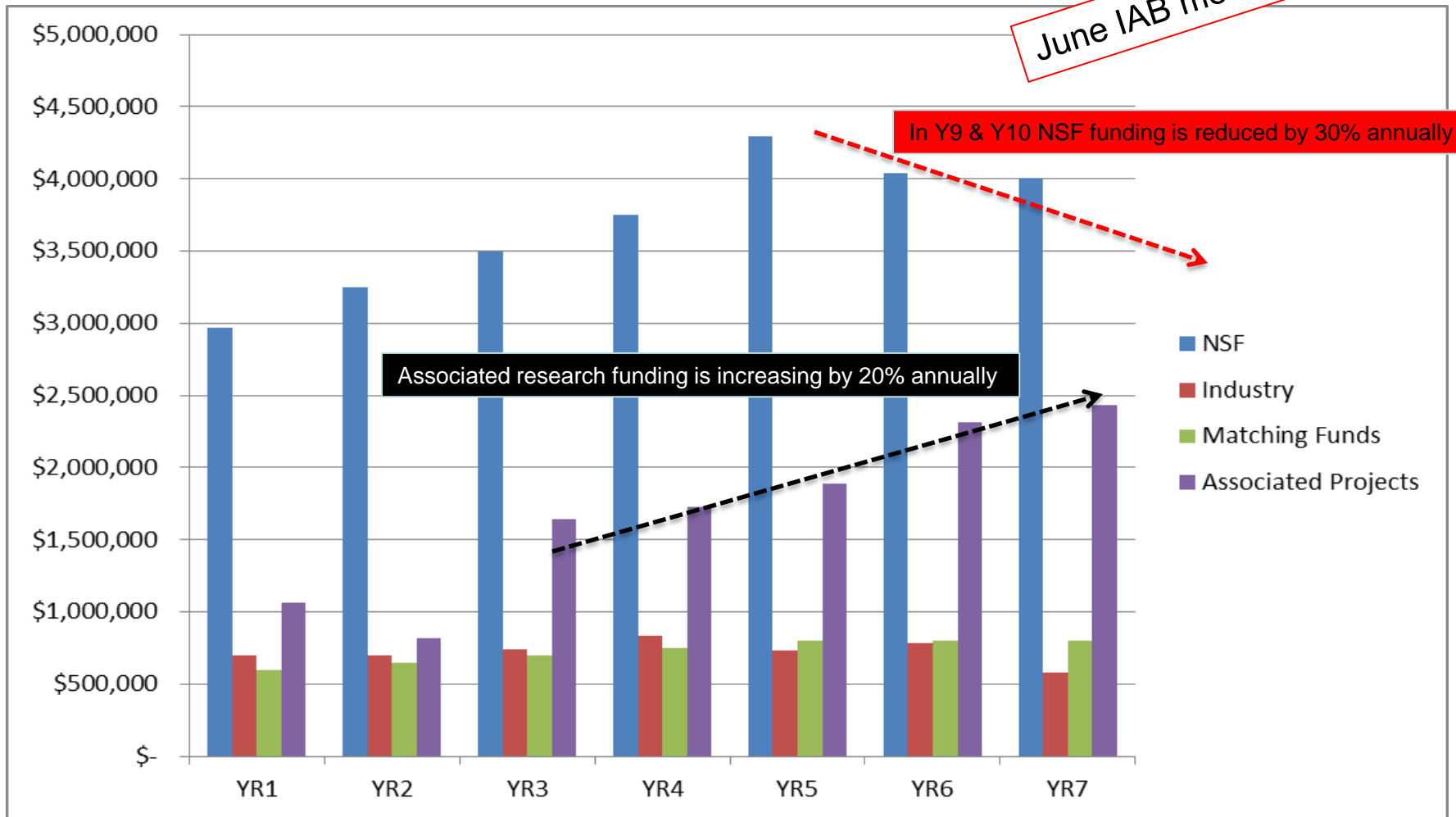
# High level observations

- It may not feel like it but NSF is really doing us a favor by forcing ERC's to think about sustainability long before funding starts to decline.
- Everyone “wants” sustainability but it seems like nobody “owns” sustainability
- Its important to focus on what really matters
- Plan your work and work your plan
- Solicit input from others...”its odd but it seems like if I ask for money I get advice but if I ask for advice I get money!”
- Raise awareness continuously but don't become Chicken Little...“the sky is NOT falling”



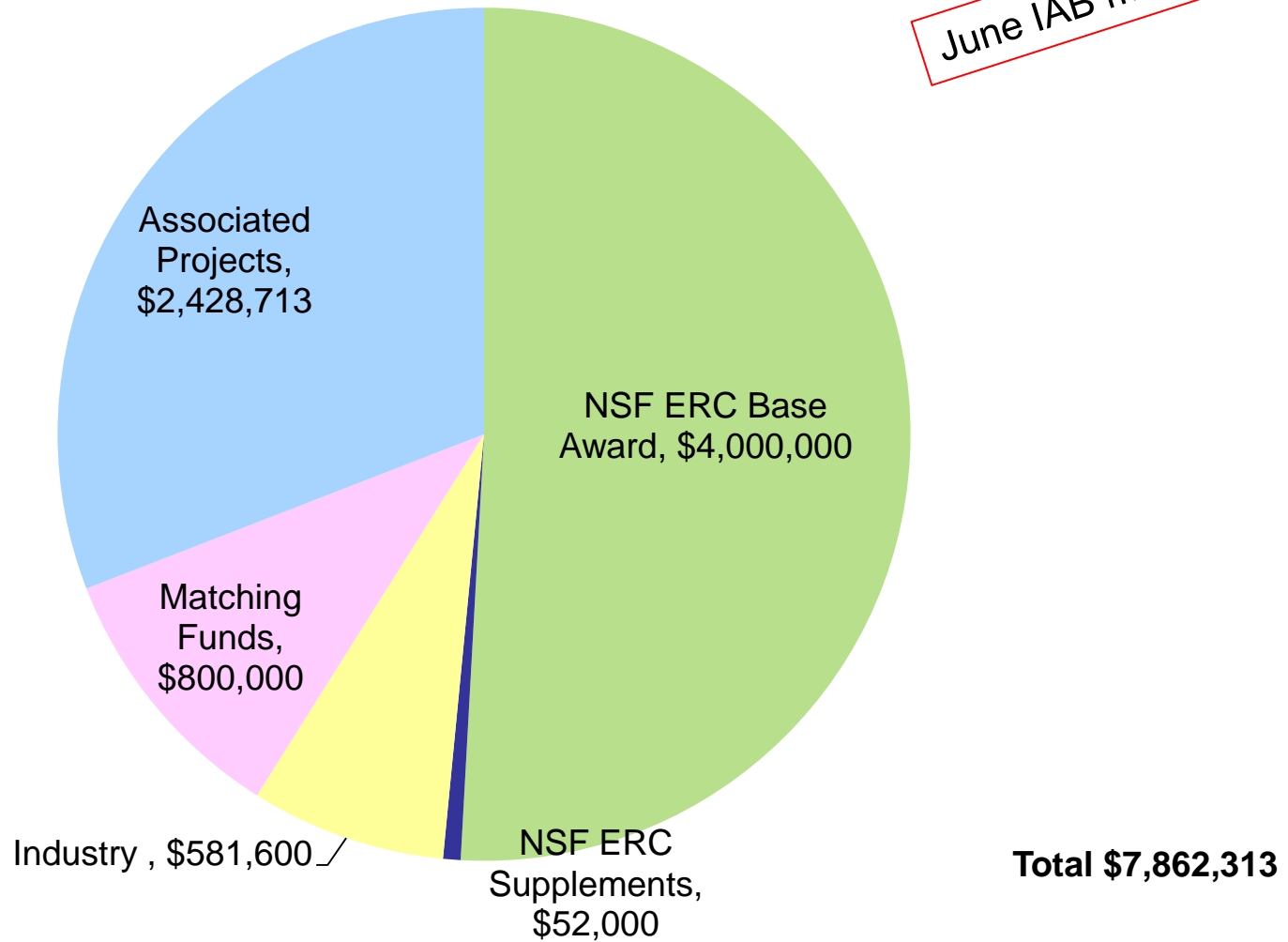
# Sustainability: CCEFP Sources of Financial Support

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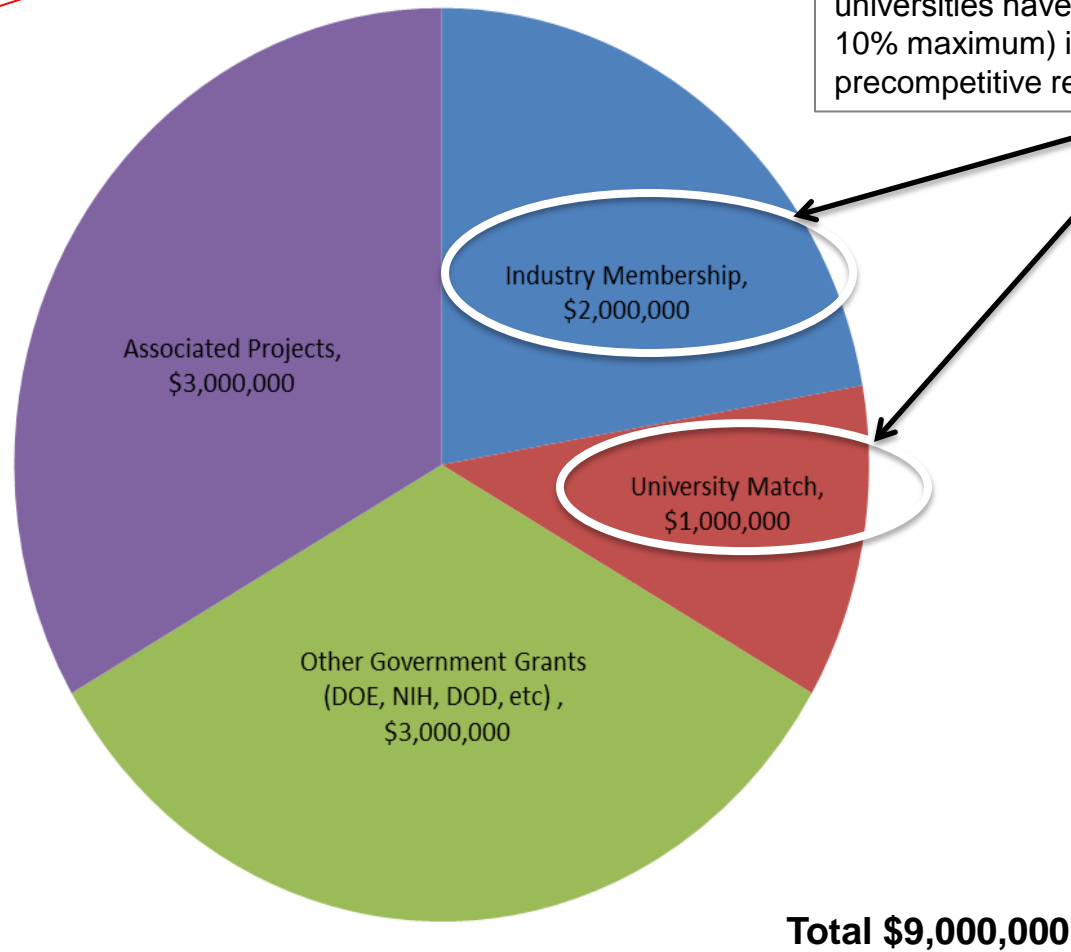
# Current CCEFP (Yr7 ref) Sources of Support

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# Proposed CCEFP Sustainability Model Sources of Support

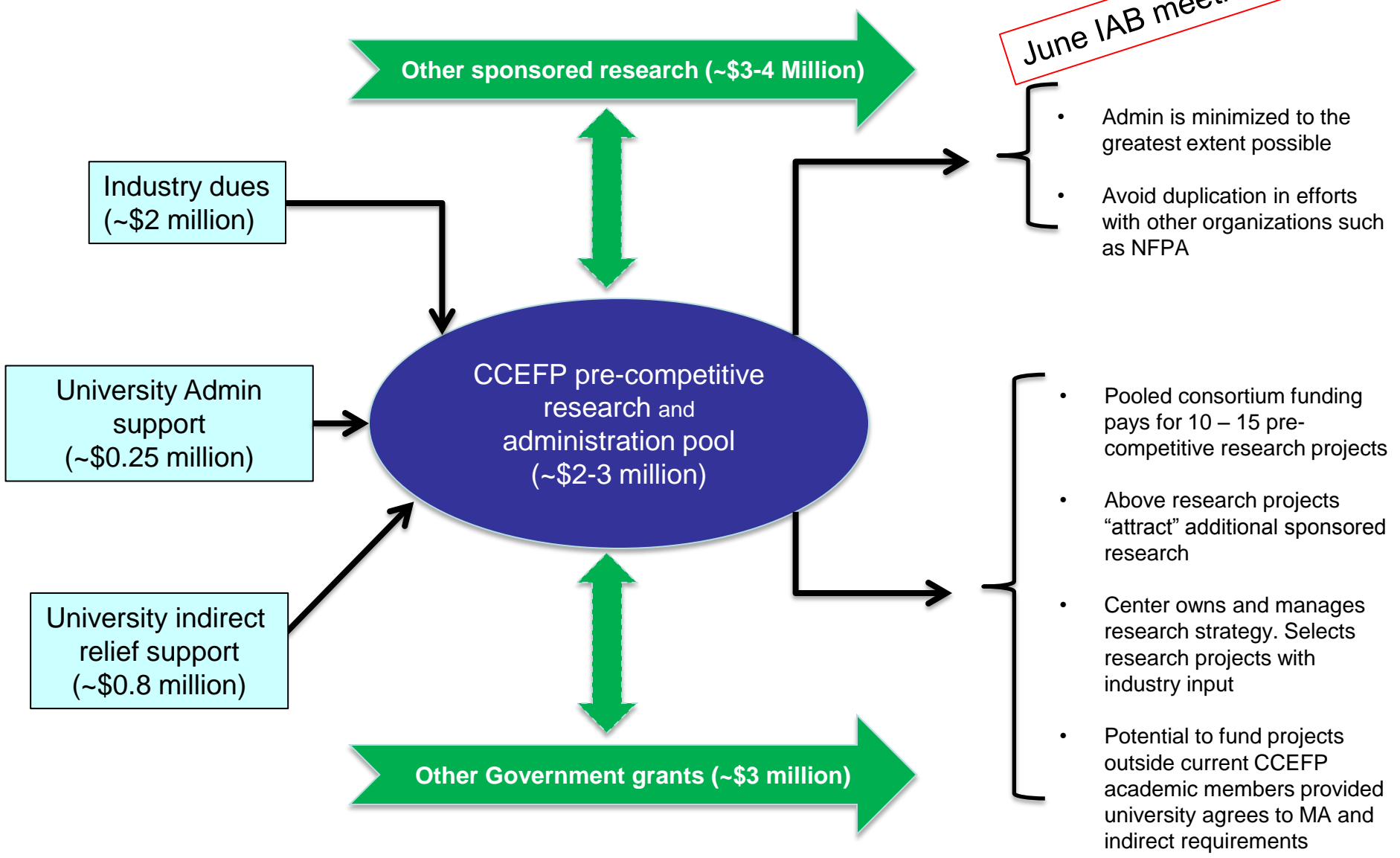
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These funding sources are co-dependent as universities have agreed to “waive” (actually 10% maximum) indirect overhead for industry precompetitive research consortiums.

# Post NSF Sustainability Model Overview

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# Post-NSF ERC Funding Example #1

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## CPES INDUSTRY PARTNERSHIP PROGRAM

-- A tiered structure to benefit industries with varying needs and interests --

### Industry Partners' Commitments and Benefits

ANNUAL COMMITMENT	PRINCIPAL MEMBER PLUS	PRINCIPAL MEMBER	ASSOCIATE MEMBER
	\$50,000	\$25,000	\$10,000
<b>DIRECTED RESEARCH</b>	<ul style="list-style-type: none"> <li>Option to earmark \$45,000 of membership funds to participate in one of the mini-consortia for focused research</li> </ul>		
<b>INTELLECTUAL PROPERTY (IP) ADVANTAGE</b>	<ul style="list-style-type: none"> <li>Automatic IPPF* benefits at no additional cost to gain royalty-free, non-exclusive, non-transferable license (upon execution of the CPES IPPF Agreement)</li> <li>Early access to CPES intellectual properties</li> <li>Two-year exclusivity for licensing opportunities</li> <li>Confidential info exchange upon execution of membership and IPPF agreements</li> </ul>		
<b>INDUSTRY INFLUENCE</b>	<ul style="list-style-type: none"> <li>Guaranteed seat on Industry Advisory Board (IAB) to influence and guide CPES</li> </ul>		Representation by election
	<ul style="list-style-type: none"> <li>Opportunity to participate in IAB Working Groups to help shape CPES research direction</li> </ul>		Representation by invitation
<b>TECHNOLOGY TRANSFER</b>	<ul style="list-style-type: none"> <li>Password access to CPES database of papers, theses, dissertations, presentations, as well as student directory</li> </ul>		
	<ul style="list-style-type: none"> <li>Complimentary registration to attend CPES annual conference</li> </ul>		
	<ul style="list-style-type: none"> <li>Significant discount for CPES professional short courses</li> </ul>		
	<ul style="list-style-type: none"> <li>Invitation to interact with CPES-VT researchers in monthly industry webinar series</li> </ul>		
	<ul style="list-style-type: none"> <li>Opportunity for research collaboration, access to CPES research results, faculty, students, and state-of-the-art facilities, as well as student recruitment</li> </ul>		
	<ul style="list-style-type: none"> <li>Option to participate in Industry Residence Program and work on site in CPES labs</li> </ul>		

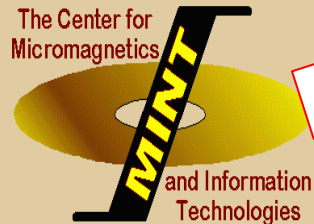
\* IPPF (Intellectual Property Protection Fund) is an IP protection and access mechanism that provides extraordinary IP advantage to Principal-level members. IPPF members meet quarterly to

### Observations

- Virginia Tech Power Electronics Center (CPES) similar to CCEFP
- ~ 80 industry members
- ~\$2 million in annual membership dues that are used for pre-competitive research and Center administration
- \$2-3 million in additional associated (ex. company sponsored) projects helps to keep Center viable
- Three tiered membership format with common worldwide dues structure
- Many global (Japanese) companies have joined
- Industry dues also fund a small IP Protection Fund that can be used to protect Center discoveries but goal is to focus on pre-competitive research
- Industry members can direct their membership dues into a mini-consortia for focused research
- Funding model is essentially many industry members paying a modest fee (\$10 - \$50K per year)

# Post-NSF ERC Funding Example #2

Welcome to



The Center for Micromagnetics and Information Technologies (MINT) is a research center at the [University of Minnesota](#) associated with the departments of [Electrical and Computer Engineering](#) and [Chemical Engineering and Material Science](#). Our research focuses on data storage technologies, including magnetic recording, materials, and [signal processing for storage](#).



## Purpose

The purpose of the MINT international research and education center is to integrate interdisciplinary faculty, students, and visiting researchers in research and development of magnetic information storage technologies at the University of Minnesota.

## Goals

The goals of the MINT are to support applied basic research projects with industrial, government, and academic funding; provide graduate education through thesis projects, courses, and magnetism seminars; and transfer technology from research project reports, publications, theses, patents, seminars, research reviews, short courses, and workshops.

UNIVERSITY  
OF MINNESOTA

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## Observations

- UMN Micromagnetics and Information technologies (MINT) Center that has been operating since 1984.
- ~ 20 industry members with (7) large members who contribute up to \$250K/yr towards pre-competitive research projects
- Industry members get to define the projects they fund
- Industry consortium dues are only subjected to low indirect overhead
- All research results are made available to all industry members at their annual meeting, including who the corporate sponsor was
- Funding model is essentially fewer industry members paying a large fee (\$250K per year)

CPES

Where should  
the CCEFP  
target?

MINT



# Sustainability tactical teams have been established

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- Government DOE focused Team
  - Lead: Prof Kim Stelson (Minnesota)
  - Advisors: Dr. Lonnie Love & Craig Blue (ORNL)
  - Support: Brad Bohlmann
  - Industry executives: NFPA + others
  
- Government NNMI focused Team
  - Lead: Prof Tom Kurfess (Georgia Tech)
  - Advisors: Sridhar Kota
  - Support: tbd; in negotiations with Joe Kovach
  - Industry executives: NFPA + others
  
- Industry Membership focused Team
  - Hydraulic lead: Prof Monika Ivantysynova (Purdue)
  - Pneumatic lead: Prof Eric Barth (Vanderbilt)
  - Medical lead: TBD
  - Advisors: Eric Lanke (NFPA), IAB
  - Support: Mike Gust

Note: university commitments have already been received and associated research appears to be progressing well.



# Dept of Energy EERE (Energy Efficiency and Renewable Energy ) meeting update

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- CCEFP team
  - Prof Kim Stelson (UMN)
  - Prof Tom Kurfess (Gtech)
  - Dr. Lonnie Love (Oakridge National Lab)
  - Eric Lanke (NFPA)
  - Ed Howe (Enfield Technologies)
- Primary DOE contact
  - Dr. Rob Ivester (Interim Advanced Manufacturing Office Director)
- Primary message was to introduce the potential of fluid power to save energy and set the stage for future collaboration.
- The Clean Energy Manufacturing Initiative (CEMI) is a new Department of Energy initiative focused on growing American competitiveness in Clean Energy Manufacturing. June 21 meeting at the University of Toledo.
  - Parker Hannifin, Eaton, CAT, Deere are attending
  - Others interested? [Note: ExxonMobil may be attending.]



# Next steps

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- Need to finalize agenda for face to face IAB meeting at UMN
  - Ideation event planning (who will attend? How to handle IP, prep work, overview by Prof Kudowvitzs, etc)
  - Sustainability planning (how to close the gap on \$2 million industry consortium target, Large government grant efforts, ITECS event?, post NSF membership dues structure, Center research priorities, Center management structure, etc.)
  - Other topics?
- Look for future correspondence to solicit your inputs

Questions or comments?