

# Ohio Federal Military Jobs Commission (OFMJC) Commission Support Improving Ohio's Economy Through R&D



WSU - Dennis Andersh



OSU - Marty Kress



CSU - Jerzy Sawicki &  
Susan Barnes-

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# WPAFB / GRC Mission Applications Driven Application Driven Centers of Excellence (COEs)

**Projected Growth over 5 years: 2,500 new jobs for Ohioans  
\$350 million in new federal research contracts to Ohio based companies**

**Red Items  
are Initial  
focus Areas.**

**Application Domains**

**COE Lead  
LCCC, CSU**

Application Domains	Human Performance and Health Sciences	Power and Propulsion	Materials and Manufacturing	Energy Storage/Integration	Command, Control, Communications Computing Intelligence Surveillance & Reconnaissance (C4ISR)	Advanced Communications Precision Navigation and Targeting (PNT) and Electronics Warfare (EW)
<b>Aerospace Systems</b> <ul style="list-style-type: none"> <li>Manned</li> <li>Remotely Piloted</li> <li>Hypersonic</li> </ul>	<ul style="list-style-type: none"> <li><b>Autonomy</b></li> <li>LVC Training</li> <li>Neuroscience</li> <li>Aerospace Physiology /Toxicology</li> <li>Biosensors / Biomakers</li> <li>Human Machine Teaming</li> <li>RPA Operations</li> </ul> <p><b>Existing AHEAD</b></p>	<ul style="list-style-type: none"> <li><b>Hybrid Electric Power and Propulsion</b></li> <li>Solar Electric Power and Propulsion</li> <li>Advanced Turbine Engines</li> <li>Energy / Fuels</li> <li>Energy Storage / Retrieval</li> <li>On-board Power Systems</li> </ul>	<ul style="list-style-type: none"> <li>Nanomaterials</li> <li>Sustainment</li> <li>Additive Manufacturing</li> <li>Ceramics</li> <li>Composites</li> <li>Materials for Adverse Conditions</li> <li>Flexible Electronics</li> </ul>	<ul style="list-style-type: none"> <li>Batteries</li> <li>Supercapacitors</li> <li>Green Technologies</li> <li>Rapid charge/discharge cycling</li> <li>Micro-devices</li> </ul>	<ul style="list-style-type: none"> <li><b>Human-Centered ISR</b></li> <li><b>Data Analytics</b></li> <li>Data Compression / Analytics</li> <li>Processing Exploitations and Dissemination</li> <li>Infrared (IR), Electro-optical (EO), Laser, RF, Hyperspectral, Acoustic, &amp; Radar Sensors</li> <li>Space</li> </ul>	<ul style="list-style-type: none"> <li>Directed Energy</li> <li>Offensive and Defensive EW</li> <li>Novel Payloads</li> <li>Avionics</li> <li>Next Gen Global Positioning Systems (GPS)</li> <li>Space Communications</li> <li>Tactical Communications</li> <li>RF Spectrum Management</li> <li>FCC</li> <li>Advanced Algorithms</li> <li>Digital Systems</li> </ul>
<b>Space Systems</b> <ul style="list-style-type: none"> <li>Manned</li> <li>Unmanned</li> </ul>						
<b>Cyber Systems</b> <ul style="list-style-type: none"> <li>IT</li> <li>Weapon Systems</li> </ul>						
<b>Modeling/Simulation/Analysis</b>						
<b>Commercialization &amp; Technology Transition</b> Small / Med Business Growth Connections to Business						
<b>Workforce Development</b> <ul style="list-style-type: none"> <li>STEM</li> <li>Skilled</li> <li>Unskilled</li> </ul> <p>Primary Support: All Universities to specifically include UC, UD, KSU, Miami, BGSU, Central WSU, Stark State, Clark, UA, UT, CSU, Lorain, Case, Sinclair, OU, OSU</p>	<p><b>Lead: WSU</b></p> <p>Primary Support: UC, UT, OSU, Case, UD, KSU, CSU, Sinclair, Lorain, Clark, Miami, BGSU, Central WSU, Stark State, Clark, UA, UT, CSU, Lorain, Case, Sinclair, OU, OSU</p> <p>Contracts Awarded: \$167M</p> <p>Private Sector Investment: \$150M</p> <p>Project 25% Y/Y Growth</p>	<p><b>Lead: OSU</b></p> <p>Primary Support: UC, UD, UA, UT, CSU, Lorain</p> <p>Potential Jobs : 400</p> <p>Potential Contracts: \$100M</p> <p>Potential Private Sector Investment: \$50M</p>	<p><b>Lead: UD</b></p> <p>Primary Support: YSU, OSU, UA, Case, UC, UT, CSU, KSU, Lorain, Sinclair, Clark, Central</p> <p>Potential Jobs : 600</p> <p>Potential Contracts: \$150M</p> <p>Potential Private Sector Investment: \$75M</p>	<p><b>Lead: Case</b></p> <p>Primary Support: UT, OSU, UD, UC, CSU, Lorain</p> <p>Potential Jobs : 200</p> <p>Potential Contracts: \$50M</p> <p>Potential Private Sector Investment: \$10M</p>	<p><b>Lead: WSU/OSU</b></p> <p>Primary Support: UD, OU BGSU, Case, UT, UC, Miami, Sinclair</p> <p>Potential Jobs: 600</p> <p>Potential Contracts: \$150M</p> <p>Potential Private Sector Investment: \$75M</p>	<p><b>Lead: OU</b></p> <p>Primary Support: WSU, OSU, KSU, UD, Miami, Lorain</p> <p>Potential Jobs : 300</p> <p>Potential Contracts: \$75M</p> <p>Potential Private Sector Investment: \$25M</p>
	<b>New</b>					



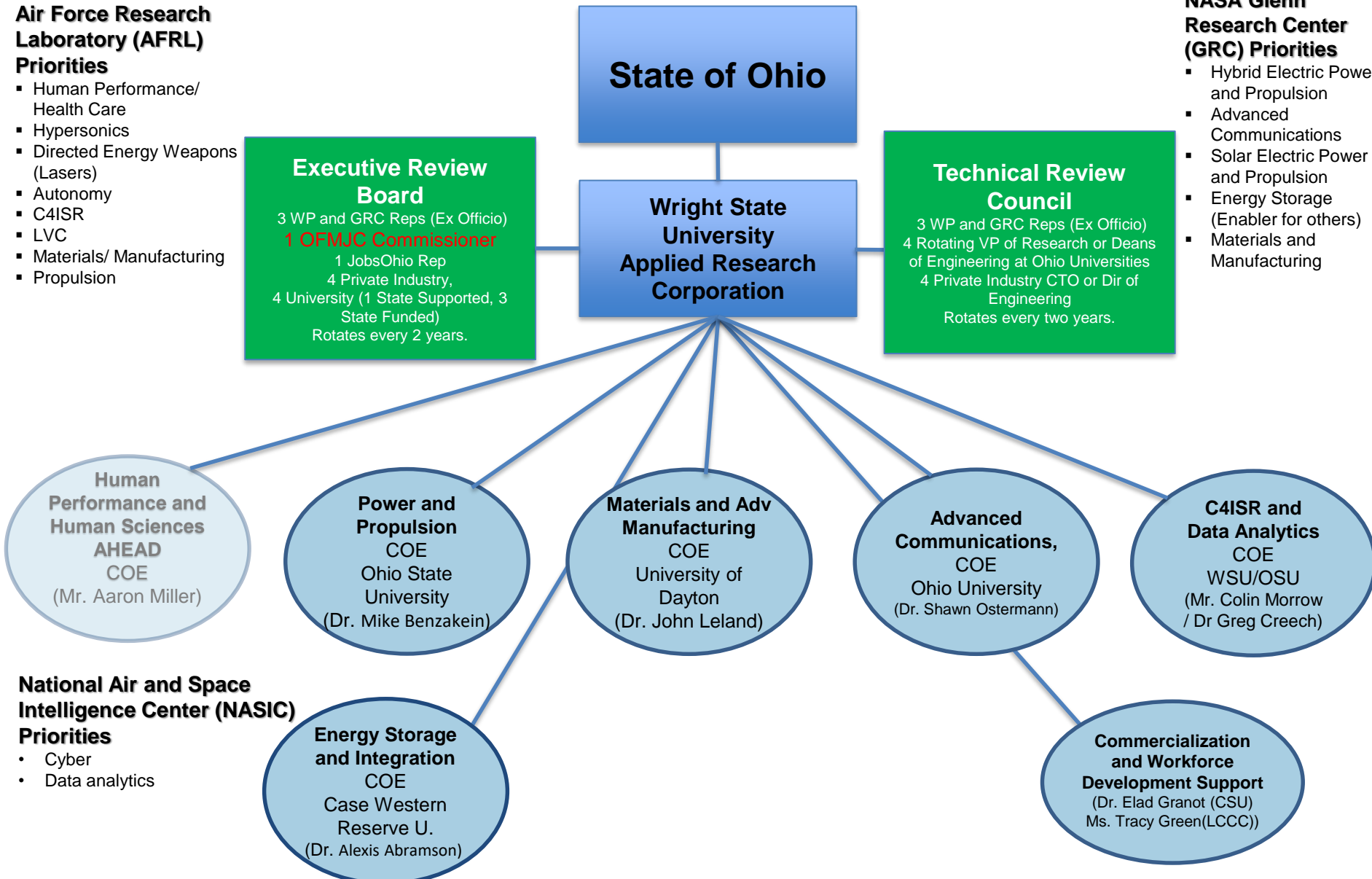
# Construct for Ohio Centric Center of Excellence (COE) Research Network

## Air Force Research Laboratory (AFRL) Priorities

- Human Performance/ Health Care
- Hypersonics
- Directed Energy Weapons (Lasers)
- Autonomy
- C4ISR
- LVC
- Materials/ Manufacturing
- Propulsion

## NASA Glenn Research Center (GRC) Priorities

- Hybrid Electric Power and Propulsion
- Advanced Communications
- Solar Electric Power and Propulsion
- Energy Storage (Enabler for others)
- Materials and Manufacturing



### Executive Review Board

3 WP and GRC Reps (Ex Officio)  
**1 OFMJC Commissioner**  
 1 JobsOhio Rep  
 4 Private Industry,  
 4 University (1 State Supported, 3 State Funded)  
 Rotates every 2 years.

### Technical Review Council

3 WP and GRC Reps (Ex Officio)  
 4 Rotating VP of Research or Deans of Engineering at Ohio Universities  
 4 Private Industry CTO or Dir of Engineering  
 Rotates every two years.

**Human Performance and Human Sciences AHEAD COE**  
 (Mr. Aaron Miller)

**Power and Propulsion COE**  
 Ohio State University  
 (Dr. Mike Benzakein)

**Materials and Adv Manufacturing COE**  
 University of Dayton  
 (Dr. John Leland)

**Advanced Communications, COE**  
 Ohio University  
 (Dr. Shawn Ostermann)

**C4ISR and Data Analytics COE**  
 WSU/OSU  
 (Mr. Colin Morrow / Dr Greg Creech)

**Energy Storage and Integration COE**  
 Case Western Reserve U.  
 (Dr. Alexis Abramson)

**Commercialization and Workforce Development Support**  
 (Dr. Elad Granot (CSU)  
 Ms. Tracy Green(LCCC))

## National Air and Space Intelligence Center (NASIC) Priorities

- Cyber
- Data analytics

State of Ohio

WP/GRC Executive Review Board

Applied Research Corporation

Technical Review Council

Human Performance and Human Sciences AHEAD COE

Power and Propulsion COE

Materials and Manufacturing COE

Advanced Communications COE

ISR and Data Analytics COE

Energy Storage COE

Commercialization and Workforce COE

Chapter 2:  
Expand Small Business Contracting

Chapter 3:  
Create Workforce Placement Center for FMJ



# Proposed COE Project Evaluation Criteria

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*To meet the stated primary objectives of the OFMJC, projects should be evaluated upon the following criteria (in suggested order of importance):*

1. Does the proposed project meet the applications/user driven requirements derived from emerging mission priorities of NASA and DOD. **This is a go/no go for each project.**
2. The degree of alignment with Ohio industries and potential to impact job creation. This criterion should be weighted less if in #1 above, an Ohio company is providing cost share. If there is no industry cost share, then the long term impact to Ohio industry should be considered. **This is a go/no go for each project.**
3. Level of engagement and cost share provided by non-state parties. Past experience has shown that the depth of collaboration increases as parties invest their own funds. Requiring cost share is also a good means of determining the investment priorities of a company or federal lab.
4. Level of collaboration between the universities. Is the project a collection of independent sub-projects or is it truly an integrated approach to meeting a technical objective of a federal agency or company?
5. The degree of alignment with Ohio federal installation major technical or program objectives. As in #3, this criterion should be weighted less if in #1 above, a federal installation is providing cost share. If there is no Ohio federal lab cost share, then the long term impact of the project in terms of its ability to leverage future federal funds should be considered.
6. As the state funds are an investment, a long term outcome is expected. How does the project improve the long term competitiveness of Ohio's universities, federal labs or industries?



# Commission Support Budget



- Chapter 1 University Research and Technology Transition Innovation
  - Budget \$200,000
  - **Contracts with OSU \$31.25K, UD \$27.5K, OU \$27.5K, Case \$27.5K, Cleveland State \$27.5K, LCCC \$27.5K, WSU \$31.25K**
  - Dennis Andersh, WSU, Marty Kress OSU, Elad Granot CSU, Joe Shaw GRC, Morley Stone AFRL, Bill Messer UT, Dennis Irwin OU, Phillip Taylor UC, John Leland UD, Roy Church LCC, Deb Norris SCC, Anne Borchert Case, Martin Abraham YSU, Barry Rosenabum UA, Michael Ogawa BSU
  - **WSU and OSU is larger because they have two COES.**
  
- Chapter 2: Small Business Federal Contracting
  - Budget: \$25,000
  - **Contracts with WSU CUPA (\$10K), \$15K TBD**
  - Mike Wiehe - CUPA at WSU, Roy Church - Loraine Community College, Mark Weinberg – OU, Karen Conrad – DSA, Jim Laipply – DSA, John Glazer – Ohio University, Les McFawn – WBI, Glenn Richardson – JobsOhio. Martha Stearns – OFMJC Commissioner, Loren Reno – Dean of Cedarville Business School, OFMJC Commissioner, Jason Kester – Southern Ohio Port Authority



# Commission Support Budget



- Chapter 3: Workforce Placement Center for Federal/Military Jobs
  - Budget: \$25,000
  - **Contracts with Consultant \$10K, WSARC/APDC \$15K**
  - Cassie Barlow, Aerospace Professional Development Center, WSU Colleen Ryan, Vectren Energy Delivery, Commissioner,, Bruce Johnson, Inter-University Council, Jack Hershey, OACC, Bob Gruhl, Montgomery County Job Center, Eli Faes, Board of Regents, Michele Fields, Ohio Workforce Investment Board, Gayle Agahi, Cleveland Clinic, Toni Overholser, Clark State, Dan Roche, Ohio National Guard, Tom Lasley, University of Dayton, Rich Chordas, Youngstown State, Stacia Edwards, Cleveland State, Lori Goetsch, Kent State, Deb Norris, Sinclair
  
- Chapter 4: Federal Facility Retention and Expansion Plan
  - Budget: \$100,000
  - **Consulting contract with Clouse (\$16K), Sullivan (\$44K) Ferrer (\$14K), TBD (\$26K)**



# Commission Support Budget



- Chapter 5 Develop OFMJC Organizational Structure and Plan
  - Budget \$50,000
  - Transferred to TAG below.
  
- **Commission Support Budget: \$350,000 to include Chapter 5 funds.**
  - Commissioners manage going forward
  
  - WSU subcontracted to the Adjutant General for Support \$350K on July 7<sup>th</sup>.





# Final Federal Research Network Budget



# Budget Outlook

Budget Lines	FY16 7/1/2015 - 6/30/2016	FY17 7/1/2015 - 6/30/2016	Total
OBOR Workforce Development (WFD) Applied Research Corp (ARC)	<b>\$10M</b> • \$5M (AHEAD, APDC, Jobs Ohio, STEM) • \$5M (FRN COEs, other)	<b>\$10M</b> •\$5M (AHEAD, APDC, Jobs Ohio, STEM) •\$5M (FRN COEs, other)	<b>\$20M</b>
OBOR Federal Research Network (FRN) The Ohio State University (OSU)	<b>\$0M</b>	<b>\$5M</b> •\$5M (FRN)	<b>\$5M</b>
		<b>TOTAL</b>	<b>\$25M</b>

The current budget was signed by Governor's Office on June 30<sup>th</sup> and has the current budget line items to support the Federal Research Network for Wright Patterson AFB (WPAB) and NASA Glenn Research Center (GRC).



# Funding Objectives

- **State funding of \$25M over the Biennium will put a premium on the FRN to produce a return on investment (ROI) to continue the program. Specifically the COE plan must address:**
  - Does the proposed project meet the applications/user driven requirements derived from emerging mission priorities of NASA and DOD. ***This is a go/no go for each project.***
  - The degree of alignment with Ohio industries and potential to impact job creation. This criterion should be weighted less if in #1 above, an Ohio company is providing cost share. If there is no industry cost share, then the long term impact to Ohio industry should be considered. ***This is a go/no go for each project.***
  - The Level of collaboration between the universities. Is the project a collection of independent sub-projects or is it truly an integrated approach to meeting a technical objective of a federal agency or company?
- **Resource Allocation Process is Important and each COE Plan will require FRN Executive Review Board (ERB) and Technical Review Council approval.**
  - Need to prioritize the \$5M FRN dollars Aerospace Workforce Development funding in FY 16 and FY17 in to increase ROI.
  - Need to prioritize the \$5M in FY17 to support overall FRN objectives and increase the ROI



# Long Term Goal

- The goal of the FRN team is to validate the COE model and its ability to directly address key customer requirements and emerging WPAFB/GRC market needs and create jobs.
- Two key approaches for the later are based on integrating key industry partners into the COEs early and they:
  - must be a part of the final COE plans
  - must aggressively pursue SBIR/STTR, Government procurements, and AFOSR funding.



## **Human Performance and Health Sciences** (next meeting TENTATIVELY July 17)

Aaron Miller- Wright State University- [aaron.miller@wright.edu](mailto:aaron.miller@wright.edu)

## **C4ISR (next meeting Wed Jul 8 at ATIC Beaver Creek 9-11)**

Colin Morrow- Wright State University- [colin.morrow@wright.edu](mailto:colin.morrow@wright.edu)

Greg Creech- Ohio State University- [creech.41@osu.edu](mailto:creech.41@osu.edu)

## **Power & Propulsion**

Meyer Benzakein- Ohio State University- [benzakein.2@osu.edu](mailto:benzakein.2@osu.edu)

## **Energy Storage/Integration**

Alexis Abramson- Case Western Reserve University- [alexis.abramson@case.edu](mailto:alexis.abramson@case.edu)

Anne Borchert- Case Western Reserve University- [amb14@case.edu](mailto:amb14@case.edu)

## **Advanced Communications PNT and EW**

Trent Skidmor- Ohio University- [skidmort@ohio.edu](mailto:skidmort@ohio.edu)

Shawn Osterman- Ohio University- [osterman@ohio.edu](mailto:osterman@ohio.edu)

## **Materials & Manufacturing** (next meeting Tues Jul 7th)

John Leland- University of Dayton- [john.leland@udri@udayton.edu](mailto:john.leland@udri@udayton.edu)

## **Commercialization & Workforce Development**

Tracy Green- Lorain County Community College- [tagreen@lorainccc.edu](mailto:tagreen@lorainccc.edu)

Jerzy Sawicki- Cleveland State University- [jsawicki@csuohio.edu](mailto:jsawicki@csuohio.edu)

Susan Barnes- Cleveland State University- [s.f.barnes@csuohio.edu](mailto:s.f.barnes@csuohio.edu)

## **Chapter 1 Leads.**

Marty Kress- Ohio State University- [kress.83@osu.edu](mailto:kress.83@osu.edu)

Christopher Ristich- AFRL- [christopher.ristich@us.af.mil](mailto:christopher.ristich@us.af.mil)

Robert (Joe) Shaw- NASA Glenn Research Center- [robert.j.shaw@nasa.gov](mailto:robert.j.shaw@nasa.gov)

Dennis Andersh WSU [dennis.Andersh@wright.edu](mailto:dennis.Andersh@wright.edu)

Erin Holden WSU [erin.holden@wright.edu](mailto:erin.holden@wright.edu) Oversees the SharePoint and maintains a central Contact Database for everyone.



# Important Upcoming Dates

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- July 1 WebX Telecon with all Ohio Research Universities
- July 15 Chapter 1 Planning Meeting at LCCC
- July 16<sup>th</sup> NASA Glen Dialogue with Universities

<http://ofmjc.atichcd.org>

- July 17<sup>th</sup> AFRL Release Research Requirements Lists
- July 17 FMJC Commission Meeting at OSU
- July 21-23 Wright Dialogue with Industry(AFRL)

<http://www.wrightdialogue.org/pages/agenda.html>

- Aug 6<sup>th</sup> COE Leads Follow-up Meeting at OSU & AFRL Present Challenge Problems.
- Aug 11-12 Wright Dialogue with Universities (AFRL and NASIC)
- Aug 31<sup>st</sup> Draft COE Plans Delivered to Chapter 1 Team.
- Sept 15<sup>th</sup> COE Plan Review by FRN Executive Review Board
- ~Oct 1 Expected Funding Date



# OFMJC Document Repository

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OFMJC Sharepoint Site <http://ofmjc.atichcd.org>

Once there, you'll need to enter site password of "re4ebw"

This will give access to browse the site.

This will not give access to the COE part. They will need to request access for that.

You can then give you a sign up for the COE website.

If you have any issues please e-mail [OFMJCAdmin@OFMJC.ATICHCD.Org](mailto:OFMJCAdmin@OFMJC.ATICHCD.Org)