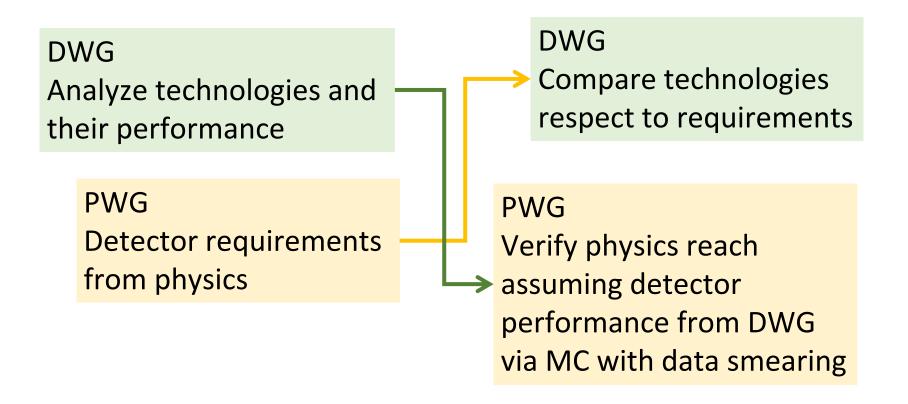
#### Information Work Flow between PWG+DWG

- Two types of information to consider regarding communication about requirements from physics and performance of different detector technologies
  - > Updates, e.g. requirements from PWG
  - Iteration, e.g. the "response" from DWG informed by performance of different technologies and iteration

# Suggested Scheme of the activity flow

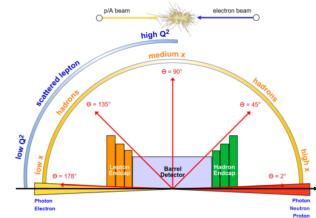
- for discussion
- purpose: general agreement before defining procedure details
- the arrows indicate INFORMATION FLOW



### **The Interactive Detector Matrix**

https://physdiv.jlab.org/DetectorMatrix/

- Supersedes the EIC Detector Handbook
- Collects physics requirements "real time", lists all technologies for a given region, and links to studies that established the numbers



Is the official EIC set of physics requirements and technology parameters

View Matrix V	View Model Vie	/iew Help Login to	.o Edit									
			· · · ·	A Company of the second	Tracking		F	Electrons	π/	/К/р	HCAL	<u> </u>
η		IN CONCERNING	Nomenclature	Resolution	Allowed X/XO	Si-Vertex	Resolution $\sigma_E/E$	PID	p-Range (GeV/c)	Separation	Resolution σ <sub>E</sub> /E	Muons
-6.9 to -5.8	」,		low-Q2 tagger	<u>σθ/θ &lt; 1.5%; 10-6 &lt; Q2 &lt; 10-2 GeV2</u>	í'	<u>г</u>	/ <u> </u>		· · · · ·		<u> </u>	$\square$
	↓ p/A	Auxiliary	/'		<u></u> '	<u> </u>	<u> </u>		<u> </u>		<u> </u>	
-4.5 to -4.0	1 <sup>+ Piro</sup> I	Detectors	Instrumentation to separate charged particles		<u></u> '	<u> </u>	'		<u> </u>		<u> </u>	<u> </u>
-4.0 to -3.5	<u> </u>		from photons	'	·'	<u> </u>	<u>2%/√E</u>		<u> </u>		<u> </u>	/
-3.5 to -3.0	, ، ا	· [ '		<u>σ<sub>D</sub>/p ~ 0.1%⊕0.5%</u>	1		1 270/ VL		· [ '	1	· [ '	
-3.0 to -2.5	י L	1 '		<u>op/p_0:1/000.070</u>	, ۱	1	·'	]	1 '	1	1 '	
-2.5 to -2.0	' '	1 '	Backward Detector	<u>σp/p 0.1%⊕0.5%</u>	' L	TBD	<u>2%/√E</u>		<u>≤ 7 GeV/c</u>	1	<u>~50%/√E</u>	<u> </u>
-2.0 to -1.5	1	1 '		<u>σp/p 0.05%⊕0.5%</u>	1	I I	<u>7%/√E</u>	T superassion up to	1 '	1	-  ·	
-1.5 to -1.0	'	1 '		0p/p 0.05%@0.5%	' I	[「	<u>7%/√E</u>	<u>π suppression up to</u> <u>1:10<sup>4</sup></u>	' <u> </u>		·'	$\square$
-1.0 to -0.5	'	1			1		· [		,,	1	,	<u> </u>
-0.5 to 0.0	1 '	Central Detector	Barrel	<u>σ<sub>p</sub>/p ~0.05%×p+0.5%</u>	<u>~5% or less X</u>	<u>σxyz ~ 20 μm. dO(z) ~dO(rΦ) ~ 20/pTGeV</u>	1 '	1	≤5 GeV/c	<u>≥3 σ</u>	·  ·	TBD
0.0 to 0.5	1 '	Central Detector	Darrei	<u>op/p=0.03%-p=0.378</u>	*370 ULIC33 A	<u>μm + 5 μm</u>	1 '	1	<u>s s Gev/c</u>	<u>= = = =</u>	·  ·	""
0.5 to 1.0	'	1 '		<u>4'</u>	' 1	L'	'	L'	<u> </u>	1	''	⊥]′
1.0 to 1.5	1 '	1 '			1		1 '		<u>≤ 8 GeV/c</u>	1	· [ '	
1.5 to 2.0	'	1 '		<u>σ<sub>p</sub>/<u>p ~0.05%×p+1.0%</u></u>	1 '	1	<u>(10-12)%/√E</u>		<u>s a Gev/c</u>	1	-  ·	
2.0 to 2.5	' L	1 '	Forward Detectors	<u>ا</u> '	' L	TBD	1 '		<u>≤ 20 GeV/c</u>	1	<u>~50%/√E</u>	
2.5 to 3.0	1 '	1 '		<u>σ<sub>p</sub>/p ~ 0.1%×p+2.0%</u>	1 '	1	1 '				1 '	
3.0 to 3.5	1'	<u>                                     </u>		<u>op/p_0.170-p+2.070</u>	ı'	<u> </u>	<sup>_</sup>		<u>≤ 45 GeV/c</u>	1	r	<u> </u>
3.5 to 4.0	, <u> </u>		Instrumentation to separate charged particles		·'	'	」 '		'		<u> </u>	
4.0 to 4.5	1 '	Auxiliary	from photons		1'	'	1'		ſ <u> </u>		·'	
	↑e	Detectors	Neutron Detection	<u> </u>	ı'	'	· ['		· '		·'	
> 6.2	1′		Proton Spectrometer	<u>o</u> intrinsic(  <u>t</u>  )/  <u>t  &lt; 1%; Acceptance: 0.2 &lt; pt &lt;</u> <u>1.2 GeV/c</u>	ı	ا <u>ــــــــــــــــــــــــــــــــــــ</u>	'		!			

# **Selected Yellow Report Collaborative Tools**

Indico: archives meetings, discussion material, notes

https://indico.bnl.gov/category/274/

Main Page	
Contents (hide) 1 About 2 Important Links 3 Yeliow Report 4 YR meetings 5 Misc	
About	
Welcome to the Elec	ron-Ion Collider# User Group Wiki Pages!
	i is different from the other EIGUG resources in that it serves as the medium to share the physics and detector R&D ideas and content in a fluid and accessible articular expedite the development of the Yetow Report @.
This is not a document	server and or a repository for papers and other comparable static materials. The EICUG has reserved storage space on Dropbox and other solutions do exist.
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People -

#### EIC Wiki: Storage of documentation, e.g. manuals

Software •

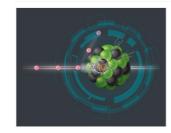
Home

https://wiki.bnl.gov/eicug/index.php/Main\_Page

Computing \*



GitHub Pages: Software documentation https://eic.github.io/



Purpose of this site

About \*

This is the main portal to the EIC software, repositories, documentation and resources. It is developed and maintained by the EIC Software Group.

#### Software Group Conveners

Andrea Bressan Andrea.Bressan@ts.infn.i Markus Diefenthaler mdiefent@jlab.org Torre Wenaus wenaus@gmail.com

# Looking ahead to EIC YR Workshop #3 (Sept 2020)

- Overall goal: "present mature studies of detector requirements from physics processes, balance detector concepts versus impact on physics measurements. Discuss possible systematics reduction among complementary detector choices. Complete final "to-do" list for YR(s)"
  - Common theme will shift to discussions of global issues that impact all (or a large number of) Physics and Detector Working Groups rather than individual ones
  - Need the communication and work flow to be in place and all information accessible in common, well-defined space for this to succeed

### Current Procedures for Information Work Flow between PWG+DWG

#### □ How to communicate detector requirements to the DWG

https://wiki.bnl.gov/eicug/index.php/Yellow\_Report\_Physics\_Common#How\_to\_ communicate\_your\_detector\_requirements\_to\_the\_DWG:

- Once you think you have some concrete detector requirements out of your work, please follow the following procedure in order to let the DWG (and everybody else) know about them:
  - 1. Discuss your results within your WG
  - 2. Document the work in your WG wiki area
  - Your WG conveners will then contact the DWG conveners by email describing the results and pointing to the corresponding documentation in the wiki
  - 4. The DWG conveners update the interactive detector matrix

### Current Procedures for Information Work Flow between PWG+DWG

How to store technologies and performance and communicate these to the PWG

- 1. Discuss your results within your WG
- 2. Document the work in your WG wiki area
- 3. Your WG conveners will then contact the DWG conveners by email describing the results and pointing to the corresponding documentation in the wiki
- 4. The DWG conveners update the interactive detector matrix

#### Discussion

#### □ Activity Work Flow

- Developing common tracking performance benchmarks for (two) different field settings
- o Improving detector response/parametrization
- Procedures
- Other