HEPCAT

Topical Area Coordination Committee

John Conway - HEPCAT Annual Meeting - 5 Nov 2025

TACC Duties, Areas, and Present Members

- Maintain set of topical areas and membership/ leadership
- Establish nomination scoring rubric
- Review/score nominations in each cohort cycle
- Pass results to Executive Committee for selection

	Topical Group	Lead	University Participants	Lab Participants
I	Radiation Hardness Studies	Conway	Conway, Mulhearn, Chertok, Erbacher(UCD), Nielsen(UCSC), Newman, Zhu(Caltech)	Frye(McClellan Nuclear Reactor, UCD), Prebys(Crocker Nuclear Lab, UCD)
II	Noble Liquid Detectors	Xu	Lippincott (UCSB), Ni, Yang(UCSD), Pantic, Tripathi(UCD), Lesko(UCB)	Xu (LLNL), Manalaysay (LBNL), Akerib, Shutt, Tanaka(SLAC), Gollapinni (LANL)
III	UV and VUV Photo sensors	Zhu	Hitlin, Zhu(Caltech), Tripathi, Pantic(UCD), Ong(UCLA), Ni, Yang(UCSD).	Xu (LLNL), Manalaysay (LBNL)
IV	Quantum Devices	Irwin	Irwin(Stanford), Golwala, Spiropulu (Caltech), Tyson(UCD), Arnold(UCSD), Barish(UCR)	Carosi (LLNL), Li, Kurinsky (SLAC)
V	Optical Scintillators/Crystals	Goldblum	Svoboda, Tripathi(UCD), Lesko, Goldblum(UCB), Zhu, Newman(Caltech), Ochoa-Ricoux (UCI), Nelson (UCSB)	Dazeley, Bowden (LLNL), Orebi Gann, (LBNL), Marleau, Sweany (SNL)
VI	Si Detectors	Nielsen	Ritz, Nielsen(UCSC), Tyson, Chertok(UCD)	Brubaker, Sweany (SNL), Su, Nelson, Vernieri, Kagan, Kenney (SLAC)
VII	Detector R&D focused AI/ ML	Duarte	Whiteson, Bian(UCI), Erbacher(UCD), Spiropulu, Newman(Caltech), Duarte(UCSD)	Nachman (LBNL), Monzani, Kagan, Schwartzman (SLAC)
VIII	Programmable Electronics/ DAQ	Taffard	Mulhearn, Erbacher(UCD), Duarte(UCSD), Tompkins(Stanford), Spiropulu, Newman(Caltech), Taffard, Lankford(UCI), Bachtis (UCLA), Prebys (UCD),Schumm (UCSC)	Grace (LBNL), Su, Bartoldus, Kagan, Kenny, Herbst(SLAC), Brubaker, Sweany (SNL), Smedley (LANL), Su, Schwartzman (SLAC)

Nomination Scoring - Rubric

- Very detailed rubric!
- In summary:
  - 20% academic prep
  - 25% research potential
  - 15% letter/CV
  - 30% proposal
  - 10% HEPCAT alignment

Category	Weight [%]	Based on...	High (2)	Medium (1)	Low (0)
Academic preparation of student	20	Unofficial Transcripts (grad and undergrad), Letter, CV	**A- or better in relevant courses**	**As and Bs in relevant courses**	**Mostly Bs and Cs in relevant courses**
			Reasonable explanation for anomalous grades	Reasonable explanation for anomalous grades	No explanation/improvement
			Improvement demonstrated	Improvement demonstrated	
			"Medium" grades but letter from PI illustrates strong academic preparation	"Low" grades but perserverance through a difficult environment is documented	
Research potential of student	25	Letter, CV	**Candidate has 3+ of the following**	**Candidate has 2+ of the following**	**1 or fewer**
			Letter(s) includes positive assessment of candidate's research skills/potential (Note: beware race/gender language differences)		
			Candidate articulates research interests and activities		
			Evidence of scientific communication (e.g. report/paper/presentation)		
			Evidence of relevant scientific research skills (e.g. literature review, being able to solve open-ended problem)		
Leadership, Diversity, and Perseverence	15	Letter, CV	**Candidate has 3+ of the following**	**Candidate has 2+ of the following**	**1 or fewer**
			Candidate demonstrate ability to work as part of a team		
			Candidate demonstrates ability to lead		
			Commitment to carry out long term goals (e.g. extracurriculars, student-athelete, non-glamorous job)		
			Evidence of perseverance in the face of adversity		
			Evidence of initiative and personal responsibility taking		
			Specific engagement with underserved communities, or activities that advance equity, diversity, and inclusion in STEM		
			Diversity of personal experiences, including experiences outside the academic environment		
			Engagement with the community through outreach, science communication, or teaching/tutoring		
			Demonstrates reslience and "large distance traveled"		
Scientific merit and feasibility of proposal	30	Proposal, Letter	Goals of project are expressed in the broader context of high energy physics instrumentation		
			Resources are adequate and articulated		
			Scope and goals articulated and achievable		
			Mentor has a good track record of mentorship		
			Mentor articulates how they will support student		
Alignment with HEPCAT	10	CV, Letter, Proposal	Student demonstrates long term interest in HEP instrumentation		
			Student will develop specific technical skills in the course of project		
			Student will gain valuable practical experience that is transferable		
Total Weight	**100**				

HEPCAT Fellows by Topical Area

	Topical Group	Spring 2022	Winter 2023	Fall 2023	Fall 2024	total
I	Radiation Hardness Studies	0	1	0	0	**1**
II	Noble Liquid Detectors	1	2	3	1	**7**
III	UV and VUV Photo sensors	0	1	0	1	**2**
IV	Quantum Devices	2	1	1	1	**5**
V	Optical Scintillators/ Crystals	1	1	1	1	**4**
VI	Si Detectors	1	1	0	0	**2**
VII	Detector R&D focused AI/ML	2	0	0	0	**2**
VIII	Programmable Electronics/DAQ	1	1	1	1	**5**

- Reasonable distribution; few Rad Hardness
- Stay the course for the supplement period?
- Any personnel changes?
- May wish to consider combining I + VI, VII + VIII?
- Open discussion of changes