

CPAD

The Coordinating Panel for Advanced Detectors

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<https://cpad-dpf.org/>

CPAD: History

- Grew out of 2012 Snowmass process as Instrumentation Frontier
 - leadership: Ian Shipsey, Marcel Demarteau + ~10-15 exec members
- Panel of the APS/DPF with bylaws (not sure since when)
 - bylaws did not regulate chairline or membership, but specified “charge”
- In 2020, new leadership: P.M. and Karsten Heeger as co-chairs
 - modified bylaws to specify terms for memberships and chairs
 - APS rule: cannot have two chairs, need chair and vice-chair
 - annual call to the community now for 5 new exec committee members and 1 new vice-chair

DPF Bylaws

The Coordinating Panel for Advanced Detectors: The Coordinating Panel for Advanced Detectors (CPAD) shall consist of a Chair, as well as a Vice-Chair and ~~six~~ten members appointed by the DPF Chair-Elect following a call for nominations and approval by the DPF Executive Committee prior to appointment by the Chair-Elect. Panel members shall serve staggered, two-year terms but should not serve more than two consecutive terms. The newly appointed member of the CPAD chair-line shall serve first as Vice-Chair, succeeding to the Chair position in the second year and serving for one year. The CPAD shall have the responsibility to promote excellence in the research and development of instrumentation and detectors to support the national program of particle physics in a global context through the organization of the annual topical meeting on detector research and development; the nomination and selection of the annual DPF Instrumentation Awards and the Graduate Instrumentation Research Award; the promotion of educational programs to further the understanding of detectors and their instrumentation; the organization of multidisciplinary workshops; and the development of new activities consistent with its mission.

New CPAD Membership

- Seeking nominations from the community
- Aim for balance in multiple directions:
 - lab vs university
 - gender
 - technical/science expertise
 - try to include an international member
- Draw from nominations also for help with other CPAD committees and activities

GIRA Award

Graduate Instrumentation Research Award (<https://detectors.fnal.gov/gira/>)

- Established in 2018, 1-2 students per year for 2-year projects
- Funded by DOE program manager (currently \$45,000 stipend + up to \$20,000 tuition remission)
- CPAD forms GIRA selection committee with one chair, one vice-chair (will become chair the following year) and 4-5 other members. Members don't need to be CPAD EC members. Term is only 1 year, except for chair.
- Nominations collected on AJO
- GIRA committee makes their selection, which is then approved by CPAD EC and by DOE program manager
- Funds are currently moving DOE → Fermilab → University

SBIR Program Advisory Committee

- Advises DOE Program Manager for Detectors, Helmut Marsiske, on SBIR topics, assignment of reviewers; helps review process along
- ~10-15 experts in various technologies, in the past historically connected to CPAD
- This group so far has seen very few changes in membership; mostly organized by Helmut, but aided by CPAD EC
- Group helps assign proposals to reviewers, who are experts in the community; if lack of experts then group members might take over review themselves

DPF Instrumentation Award

- Established in 2015; added early career award in 2018 (<https://engage.aps.org/dpf/honors/prizes-awards/instrumentation-award>)
- CPAD forms selection committee: 1 chair, 1 vice-chair (chair the following year), ~4 other members (2 are last year's winners). Term is 2 years, except for last year's winners, they only serve 1 year.
- Nominations collected through AJO
- Selection approved by CPAD EC and then by DPF EC

Annual CPAD Workshops

- Annual workshops organized at volunteer university or lab with local org committee and scientific org committee assigned and run by CPAD
- Has grown a lot in recent years (typically 100-150 people, 2023 saw 270!)
- Plenary sessions to reflect on the overall field, parallels for lots of technical talks. Dedicated awards plenary (GIRA, DPF Instr.Awrd), early career plenary, Townhall with DOE/NSF, summary session
 - has morphed into THE networking event of the year for people working detector instrumentation, including international participation
- Also organized dedicated QIS workshop in 2017 (kicked off entire QIS for HEP and HEP for QIS effort)
- Produced two workshop reports

Latest Effort: CPAD R&D Collaborations (RDCs)

- Called out in Snowmass IF recommendations:
 - need for coordinated R&D effort within the US: collaborations working together to pursue well defined roadmap with R&D goals and milestones; common funding proposals; can also collaborate with CERN's DRDs
- Established at 2023 CPAD Workshop
- Several RDCs have been established, 2-3 conveners have been selected by CPAD EC
 - groups are meeting and formulating roadmaps, work packages, R&D goals and milestones
 - will prepare a few group funding proposals for next FOA in later summer
 - CPAD EC will help organize and perhaps prioritize these proposals before they go to the program manager