

VoComp.org

University
Voting
Systems
Competition

Introduction: University student elections offer a uniquely focused setting for engaging students in nationally important, state-of-the-art security and privacy research/projects and course work. Annual competitions should motivate students to team, innovate, plan, implement, analyze, and present their achievements in a competitive but professional manner. Courses can benefit by tying into the competitions and using the materials and experience accumulated. The result should be spirited innovation in the application oriented yet proven-challenging field of election system technology, positively impacting students and ultimately actual public-sector election systems.

Competition Timeline

Phase 0: *Judges announced, applications accepted, rules detailed (September-October)*

- Teams submit proposals with list of participants and any initial sponsors.
- Pre-qualification judging round and rule details announced.

Phase 1: *Advance payment to teams with posted designs judged to be qualified (January)*

- Teams post online the design architecture and detailed election rules/procedures of the system they'll implement for critique by other teams and study by judges.

Phase 2: *Second payment to teams in the running, on completion of election (by May)*

- Teams run elections (preferably student government but alternate acceptable).

Phase 3: *Teams completing second phase awarded travel-reimbursed opportunity to compete at finals event for prizes in each category (June):*

- Mock election run for judging by each team at the physical event.
- Academic-style presentations by each team in front of judges.
- Optional presentations of performance criteria as well as critical evaluations of competing systems (with response by team being critiqued).

Evaluation Criteria (for team entries, examples)

- Integrity, privacy, accessibility and transparency of the overall election process.
- User friendliness, disability accommodation and accuracy of vote capture.
- Completeness of concept and quality of technical presentation.
- Cleverness/efficacy/presentation of discovered weaknesses in competing systems.
- Usefulness and measureability of performance criteria proposed.

Ground rules (for the competitions, main principles)

- All student activities should be in accordance with the standards and best practices of academic and professional research and development.
- All code is open for inspection and free for use/adaptation by any university, independent of whether for use by a team in a subsequent competition.
- No actual attacks are to be perpetrated against any implemented system.

Challenge level (adjustable by judges once applications received)

- Pre-existing student-implemented election systems, such as those developed at MIT, Berkeley, and GWU/UMBC, provide baseline examples.
- Optional extensions allowing the bar to be raised as needed include real-world aspects, such as provisional voting, absentee voting, ballot styles, and complex voting rules, as well as threats such as insider manipulation, improper influence, and disruption.

Motivation (key points)

- Foster meaningful and realistic research, development, and civic participatory experience for university students, as well as courses and inter-collegiate interchange.
- Stimulate innovation and involvement in information security and election systems.