Democratic Aspirations and Institutional Constraints: The Governance of Large Research Collaborations

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146. Matters of Justice in Science, Technology, and Medicine: Part 1
10 November 2023, 4S Honolulu, R 305B, 13:30-15:20
Intro

Large research collaborations ≠ big science

More diverse funding opportunities → more large research collaborations

Collaborations need organization → interest in democratic self-governance
Democratic Principles

Freedom, aka self-governance
  . power should emanate from the people

Participation, aka distribution and separation of power
  . people should be directly involved in government

Equality, aka membership status
  . people should be able to participate equally

Justice, aka distribution of resources
  . people should receive their fair share
Case: Mu2e

Collaboration at Fermilab
- conversion of muons to electrons without emission of neutrinos
- test theories beyond the standard model
- detector is currently being built, start of experiments in 2025

Survey of individual members from 2019
- 216 members (199 m, 17 f)
- 164 from the US, 62 non-US
- 144 senior scientific staff and faculty (127m, 14f), 34 postdocs and research scientists (31m, 3f), 22 graduate students (16m, 6f), 13 engineers (12m, 1f), 3 technicians (3m, 0f), 13 undergraduate students (10m, 3f)
- time in the collaboration: 26 < 1 yr, 46 1-3yr, 64 3-5yr, 90 >5 yr
- leadership: 18m, 4f
Conclusion

More diverse funding opportunities
→ more large research collaborations

Collaborations need organization
→ interest in democratic self-governance

Democratic self-governance produces friction with
  . disciplinary structures
  . funding chances
  . epistemic success
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