Proposal as to how to proceed with "**failed modules**"

Move forward *slowly* putting priority on:

CLASSIFICATION

not REPAIR.

Do not destroy evidence

(No Vacuuming).

Measure

- Locate gap (# and type (EST1, PAD1, PAD2, EST2))
- Try and locate position on foil
  - Ask for volunteers to define procedure

Look for Visible shorts then Disconnect

- If short is likely at edge... Try and find reason (DO NOT VACUUM)
- Remove reason if possible
- If cause of short is not removed or not found :
  - Disconnect board at both HV tabs

Why do I suggest no vacuuming?

- We need to know the SOURCE of our problem
  - We may find we are getting material from the Argon (re-cycled and used with other systems)
  - We might find a paint, SS, Tungsten, or spiders !
  - We might just find copper
  - Any information on the material causing shorts will be useful to make an informed decision as to how to proceed..... Vacuuming will likely destroy this evidence

Decide **later** whether to repair or not...

- Ask for study to find effect of ONE board disconnected per module
- Review location once statistics available
  - Edge is dominant
    - Review Cryostat Cleanliness
    - Vacuum module
  - Tie Rod dominant
    - Review stacking/machining site dependance
    - Review site QC
    - Consider re-stacking

For modules with more than one short

- Strongly consider re-stacking
- This should keep failure rate below 1/8 per HV line.
  - 128*8*1/8*1/8*1/8*1/8 = 1/4
  - So would have to make >>4 ATLAS's before one gap completely lost to HV