

# Participation Rubric for Group Discussion of Engineering Research Papers (v1.5) by Bill Griswold

		Masterful Participation	Competent Participation	Developing Participation
communication		communicates clearly using language of discipline	speaks clearly or uses language of discipline, but not both	simplicitic, incoherent, or inaudible communication
		communicates succinctly	speaks at length or laconicly	runs on or speaks in fragments
		stays on topic	digresses	raises irrelevant subjects
collaboration		constructively builds on contributions of others	naively restates what others says or contradicts others without evidence	ignores what others say
		brings others into conversation according to perceived level of participation or subject expertise	participates while leaving room in coversation for others	interrupts others, dominates conversation, or doesn't participate
		consistent eye contact/gestures	some eye contact and gestures	looks down a lot, little gesture
		contributions energize others	contributions are worked into conversation	contributions cannot be engaged
		uses humor in on-topic way	uses humor	does not use humor
		starts new avenues of inquiry after previous topic has run its course	abruptly changes subject	always lets others take the lead
		asks valuable, sincere questions	asks questions	asks insincere questions, or doesn't ask questions
inductive thinking		introduces creative or provocative ideas	introduces ideas	does not introduce ideas
		makes salient points, good answers	makes points or answers	does not make points or offer answers
		draws own conclusions by applying a rationale supported by evidence or logical inference	draws conclusions supported by only iconic reference to paper	offers opinions or accepts conclusions of paper as facts
		draws on content in other papers, specific personal experience, or details of current events	makes vague or iconic reference to other papers, personal experiences, or current events	does not draw on outside sources, engages the paper only on its own terms
		incisively summarizes paper or points of others in own words	summarizes clumsily	repeats what others say or incorrectly summarizes
deductive thinking		engaged people problem	Notable questions, points, ideas, team work (see back for more)	Paper: Speaker: Observer: Date:
		engaged technical problem		
		engaged proposed solution		
		engaged evaluation		
		engaged future directions		
		engaged conclusion / take-aways		
topical categories		engaged meta topics		

Best Questions

Best Points

Best Ideas

Best things that happened

Things most needing improvement

Best Deductive Thinking (use of logic or rationale supported by evidence)

## **Scientific Argumentation**

*How do we know what we know?*

*Why do we believe what we know?*

### **Process**

identify claim

identify *value* of claim as claim itself

evaluate each claim in steps:

    identify evidence

    evaluate evidence (true, relevant,  
    generalizes, aka risks to validity)

    seek add'l (counter) evidence

    evaluate claim wrt evidence (necessary,  
    sufficient: must, enough)

    seek alternative claims (*and eval*)

compare merits of claims

compile take aways (learned/know)

from Evagorou & Dillon:

*Argumentation in the Teaching of  
Science* (in press)

### **Regarding**

people problem

technical problem

solution (wrt technical/people prb)

contributions/take-aways

*transformation of data to evidence  
(representation), and evidence to  
explanations (validated model)*