

## BREAKOUT SESSION GROUP A

BREAKOUT TOPIC 1: In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

1. New openness and leadership for engaging the community.
  - a. Selection of a dycore for the unified model from outside NCEP
  - b. General strategy for community of developers (e.g., tiered code repository, etc.)
  - c. Consideration of **full** Earth System modeling (atm, ocn, land, ice, aerosol, BGC)
2. Use of standards and modularity for the unified framework (e.g. ESMF/NUOPC, IDP etc.) with cross agency leveraged efforts
3. Evidence-based decision making in all aspects of planning and development

BREAKOUT TOPIC 2: What are we missing? What gaps remain?

1. Resource challenges
  - a) Interagency collaboration and resources.
  - b) Consolidation of modeling systems.
  - c) Difficulties in providing access to visitors, collaborators.
2. Communications & Outreach WG issues:
  - a) How is community defined? Clarify the motivation and scope of this effort?
  - b) How do other “community” Earth System models differ from NOAA’s?
3. What is the success criterion for NOAA’s unified modeling system?
  - a) Definition of unified metrics, V & V tools
  - b) Definition of success at the end of i) 3 years; ii) 5 years ; iii) 10 years.

## **BREAKOUT SESSION GROUP B**

BREAKOUT TOPIC 1: In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

1. Community has engaged, EMC devoted considerable resources
2. Paradigm of JEDI for repository structure
3. Discussion of governance, breadth of topic

BREAKOUT TOPIC 2: What are we missing? What gaps remain?

1. High level framework for project
2. Overall priorities and goals, metrics, benchmarks,
3. Guidelines for entering repository, release of code, documentation, training, testing and evaluation
4. EMC becomes customer and contributor, role change
5. Connection to observations community

## **BREAKOUT SESSION GROUP C**

**BREAKOUT TOPIC 1:** In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

1. Encouraging evidence of a cultural change as demonstrated by holding the meeting at all and engaging community.
2. Many of the right priorities are being highlighted as evidenced by the choices of working groups--both topic and membership. Challenges being recognized.
3. First steps to building community.
4. First steps to building relationships within a community.

**BREAKOUT TOPIC 2:** What are we missing? What gaps remain?

1. How working group recommendations and SIP will be put into action is not clear.
2. Apparent disconnect between research priorities and funding, both internal and extramural.
3. Visibility into process for how innovations make it to operations is lacking.
4. Explicit recognition of the importance of HPC (optimization, next-gen, etc.).

## **BREAKOUT SESSION GROUP D**

**BREAKOUT TOPIC 1:** In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

1. Choosing a 3 year strategy before beginning the SIP process correct
2. Attempted to gather community
3. Identified time for X-C WG interactions

**BREAKOUT TOPIC 2:** What are we missing? What gaps remain?

1. Development expertise limited to a few scientists. How to expand the knowledge base?
  - a. Dynamic core, at least potentially others
2. Missing a clear, coherent definition of community development, role and scope.
  - a. Who owns the central repository or decision-making process (governance)?
  - b. Central repository shall be accessible outside firewalls, universal visibility and limited commit privileges (e.g.: GSI approach)
4. Ease of access for community (roadblocks), inputs, outputs, computing
5. Systematic validation of coding standards, compute and forecast performance; regression testing

## **BREAKOUT SESSION GROUP E**

**BREAKOUT TOPIC 1:** In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

1. Cooperation and communication among many different groups and agencies is increasing.
2. It is encouraging to see EMC developing a strategic implementation plan, and including the community in the development of that plan.

**BREAKOUT TOPIC 2:** What are we missing? What gaps remain?

1. We need a procedure for the transition of research to operations. Anything RL5 and above needs to have a transition path outlined with input from EMC. There should be set procedures (decided by EMC and SMEs) for the testbeds for bringing anything into operations.
2. Incentives need to be provided to other groups/agencies to transition model development efforts toward FV3.
3. Annual science meetings and subject-specific working group meetings between EMC and the community are needed.

## **BREAKOUT SESSION GROUP F**

**BREAKOUT TOPIC 1:** In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

- 1) Initial community Interactions are good, e.g. Mike Farrar's community diagram.
- 2) Building operational configurations from community-based codes.
- 3) Good leadership, transparent decision making processes
- 4) NGGPS is successful so far. Good to follow. Bridge to beyond 3 years. HFIP may be a good example to follow.

**BREAKOUT TOPIC 2:** What are we missing? What gaps remain?

1. Articulating vision for community modeling
2. Access (security and amount) to resources constraints our approach greatly.
3. Decision making and governance

## **BREAKOUT SESSION GROUP G**

**BREAKOUT TOPIC 1:** In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

1. Culture shift earth system enterprise toward community engagement
2. Long-term planning and vision, establishment of SIP working groups
3. Positive response from community

**BREAKOUT TOPIC 2:** What are we missing? What gaps remain?

1. Defined requirements and goals through governance (authority?)
2. Identification/allocation of resource needs (hpc, funding, staff, helpdesk, etc.)
3. User friendly, developer friendly, and attractive.
4. Sufficient incentives for development and support toward completing transitioning to operations.
5. Science steering committee (evidence-based, identify priorities)

## **BREAKOUT SESSION GROUP H**

**BREAKOUT TOPIC 1:** In terms of overall direction of moving towards a community approach to modeling, what appears to be on the right track?

1. Transparency is essential and workshop is a good start.
2. Increased use of cross- and multi-discipline metrics to drive decision making.
3. Move toward modernization of software infrastructure and standards (refactoring, modularity, repositories).

**BREAKOUT TOPIC 2:** What are we missing? What gaps remain?

1. Establish process for continual input and engagement.
2. Governance needs to be detailed and well defined for prioritization, resources, schedule, and model performance. Governance seems to have different working definition depending on perspective.
3. User support: Who is in charge and how will it be resourced?