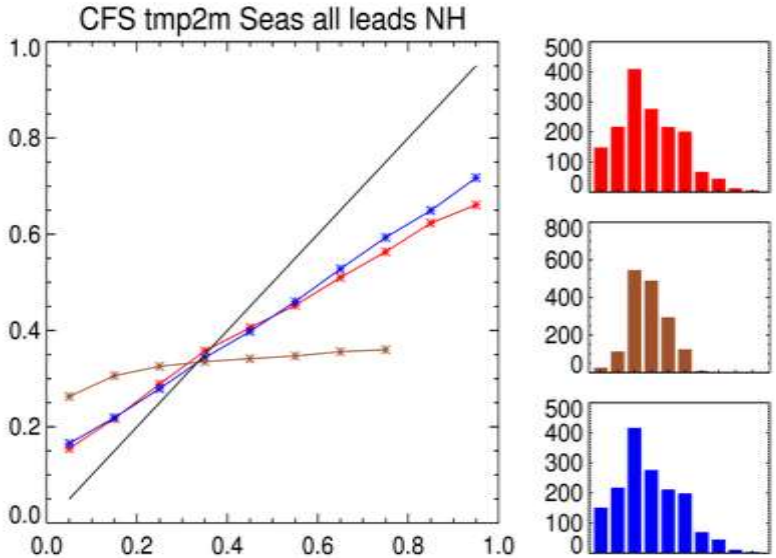
North American Multi-Model Ensemble: Goals

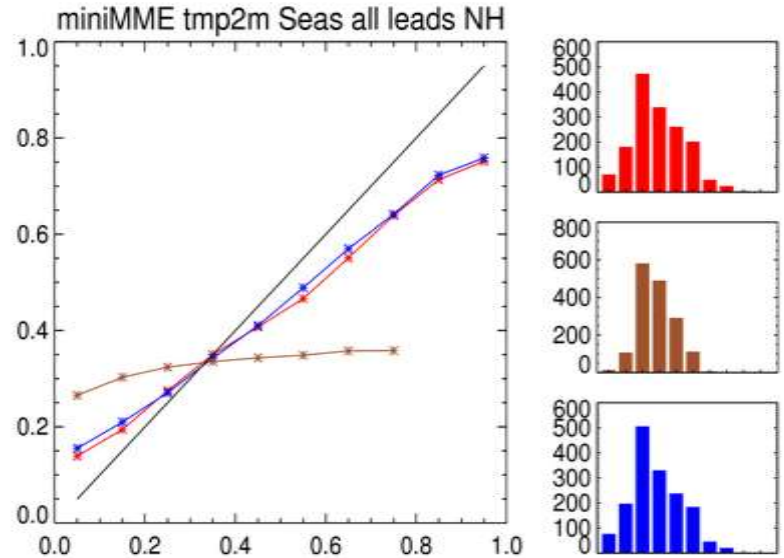
- **Continued Real-Time Seasonal Forecasts**
  - **Model Updates (FLOR, CCSM4, CESM, CMC)**
- **Coordinated Predictability Research**
  - **Benefits of MM, Model Combinations, Inform Model Development and Applications**
- **<u>Developing and Evaluating an Intraseasonal protocol</u>**
  - **Research/Testing Mode**
- **Continued and Enhanced data distribution**
  - **Supporting Prediction/Predictability Research**
  - **Supporting Forecast Applications**

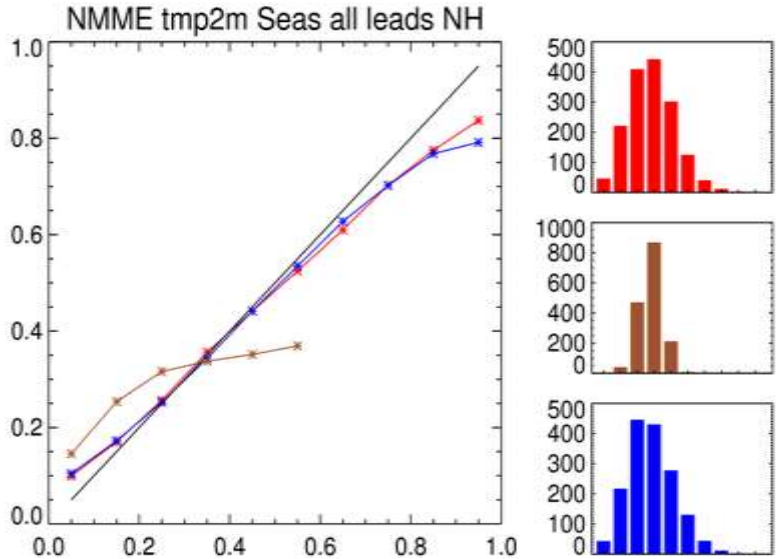
NMME: Accomplishments

- **Introduced Four New Modeling Systems**
  - **Ensemble over 100 members**
- **Increased Real-Time Monthly Data to 8 Variables**
- **Provide Real-Time Bias Corrected Monthly Forecast Data**
  - **Over 2500 Figures Each Month**
- **Produced Most Comprehensive Seasonal Prediction Data set**
  - **Freely Available to the Entire Community**
- **Demonstrated that the Diversity of Models is Enhancing the Forecast Skill**
- **Testing a Sub-Seasonal Multi-Model Prediction Protocol**
- **New Prediction and Predictability Research**

Model Diversity is Enhancing Quality



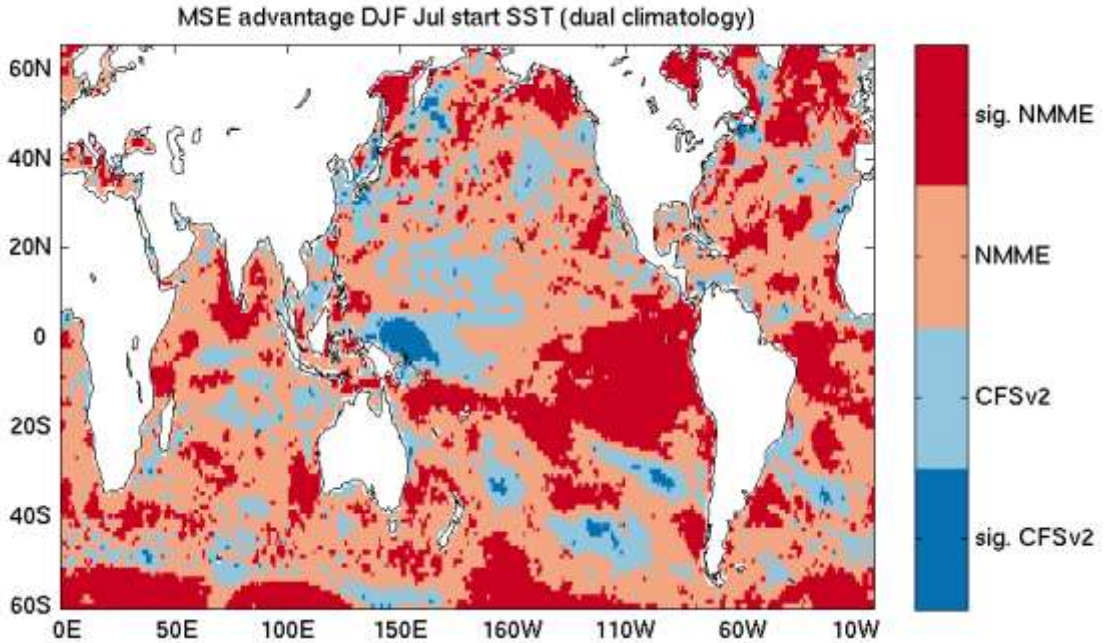
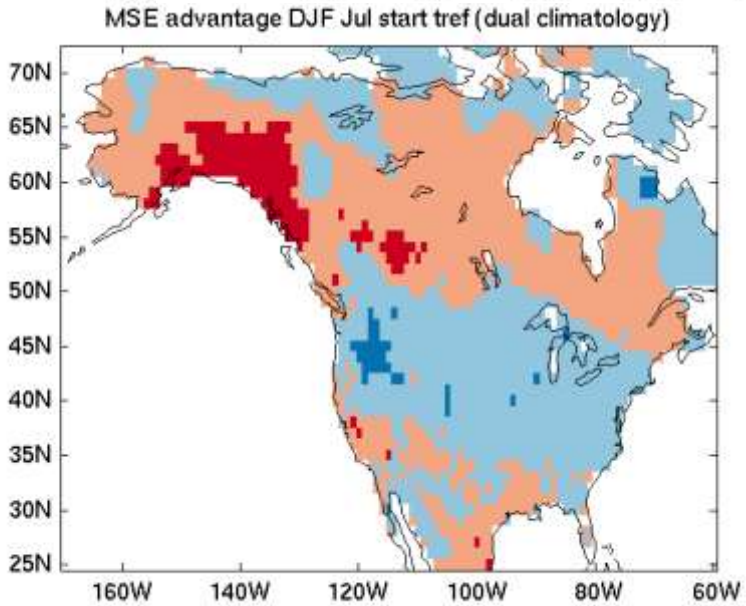
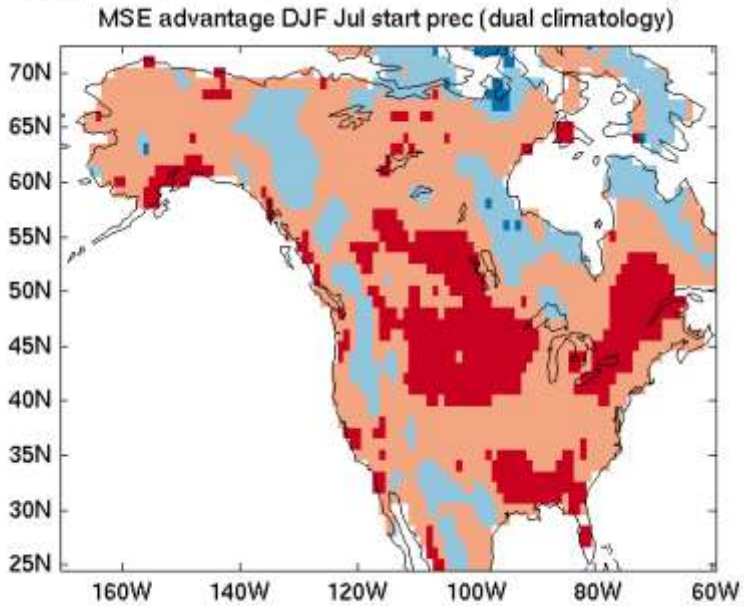




Brier Skill Score for T2m Northern Hemisphere Extra-tropics Land (23N-75N)

	A/N/B	Lead 0	Lead 1	Lead 2	Lead 3	Lead 4	Lead 5
CFS (24 Members)	Above	0.10	0.03	0.01	0.01	0.01	0.01
	Normal	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04
	Below	0.10	0.04	0.03	0.02	0.02	0.02
Mini-NMME (24 Members)	Above	0.12	0.05	0.03	0.03	0.02	0.02
	Normal	-0.02	-0.04	-0.04	-0.04	-0.04	-0.04
	Below	0.11	0.05	0.04	0.03	0.03	0.03
Full NMME	Above	0.14	0.07	0.06	0.06	0.05	0.05
	Normal	0.00	-0.01	-0.01	-0.01	-0.01	-0.01
	Below	0.14	0.08	0.06	0.06	0.06	0.05

Brier Skill Score for Nino3.4

	A/N/B	Lead 0	Lead 1	Lead 2	Lead 3	Lead 4	Lead 5
CFS (24 Members)	Above	0.54	0.45	0.39	0.33	0.28	0.25
	Normal	0.10	0.05	0.03	0.03	0.03	0.02
	Below	0.49	0.43	0.40	0.38	0.36	0.35
Mini-NMME (24 Members)	Above	0.68	0.60	0.55	0.48	0.42	0.37
	Normal	0.34	0.24	0.18	0.15	0.13	0.09
	Below	0.66	0.59	0.56	0.53	0.49	0.45
Full NMME	Above	0.68	0.61	0.55	0.49	0.43	0.38
	Normal	0.35	0.25	0.19	0.16	0.14	0.11
	Below	0.65	0.58	0.54	0.52	0.49	0.46

Mean Squared Error Sign Test