

# Introduction to GFDL Earth System Models

Presented by

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# Using GFDL ESMs for NOAA goals



GFDL

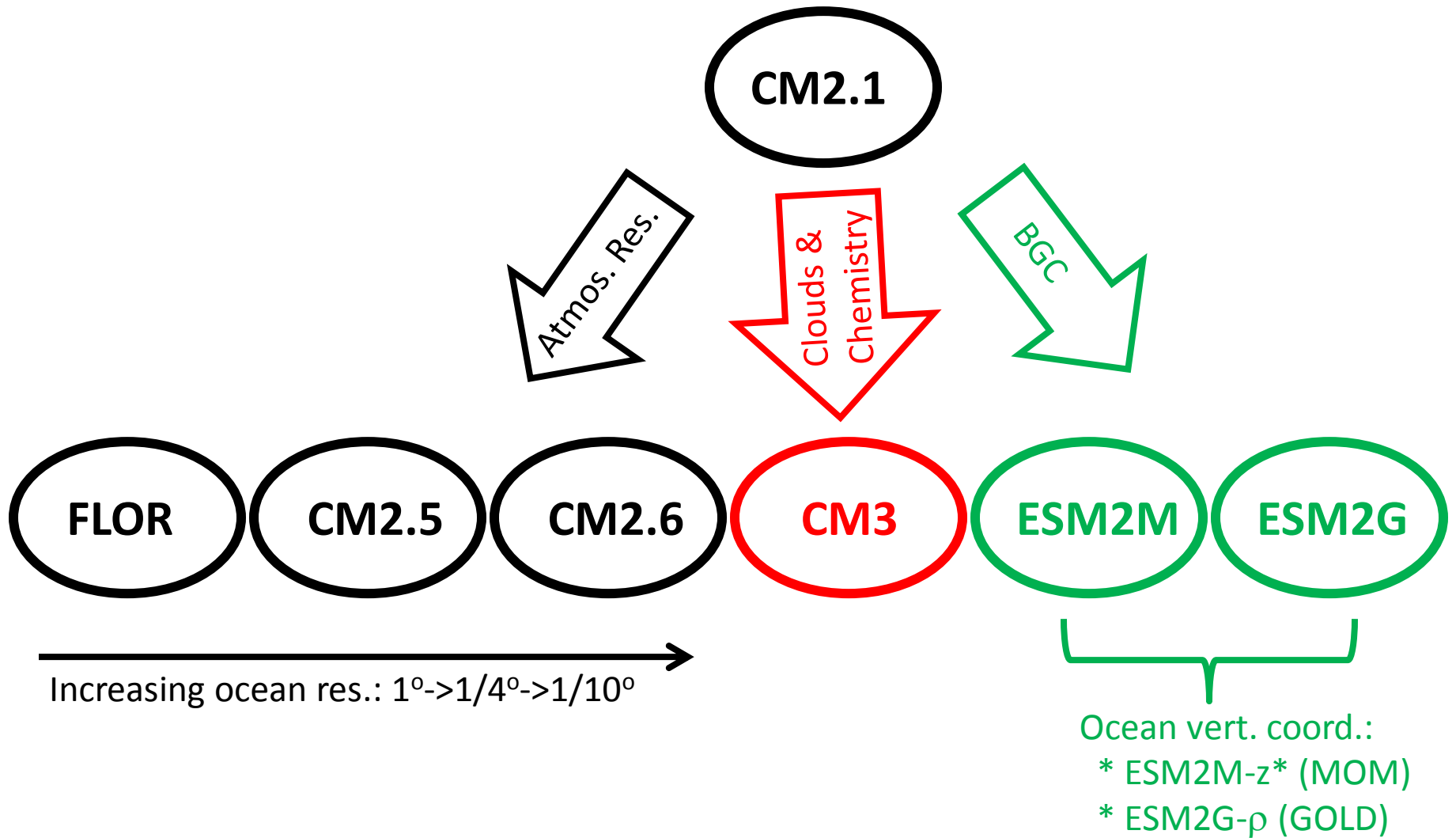


ESMs

## NOAA Strategic Goals:

- Climate adaptation and mitigation
- Weather-ready nation
- Healthy oceans
- Resilient coastal communities and economies

# GFDL ESM Genealogy



# GFDL ESM Components

Sea Ice	Land	Atmosphere	Ocean	Ocean BGC
SIS	LM2	AM2	MOM4.1	miniBLING
	LM3	AM3 (chem.)	MOM5	BLING
		HiRAM	GOLD	TOPAZ
				COBALT

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**SIS2**

**LM4**

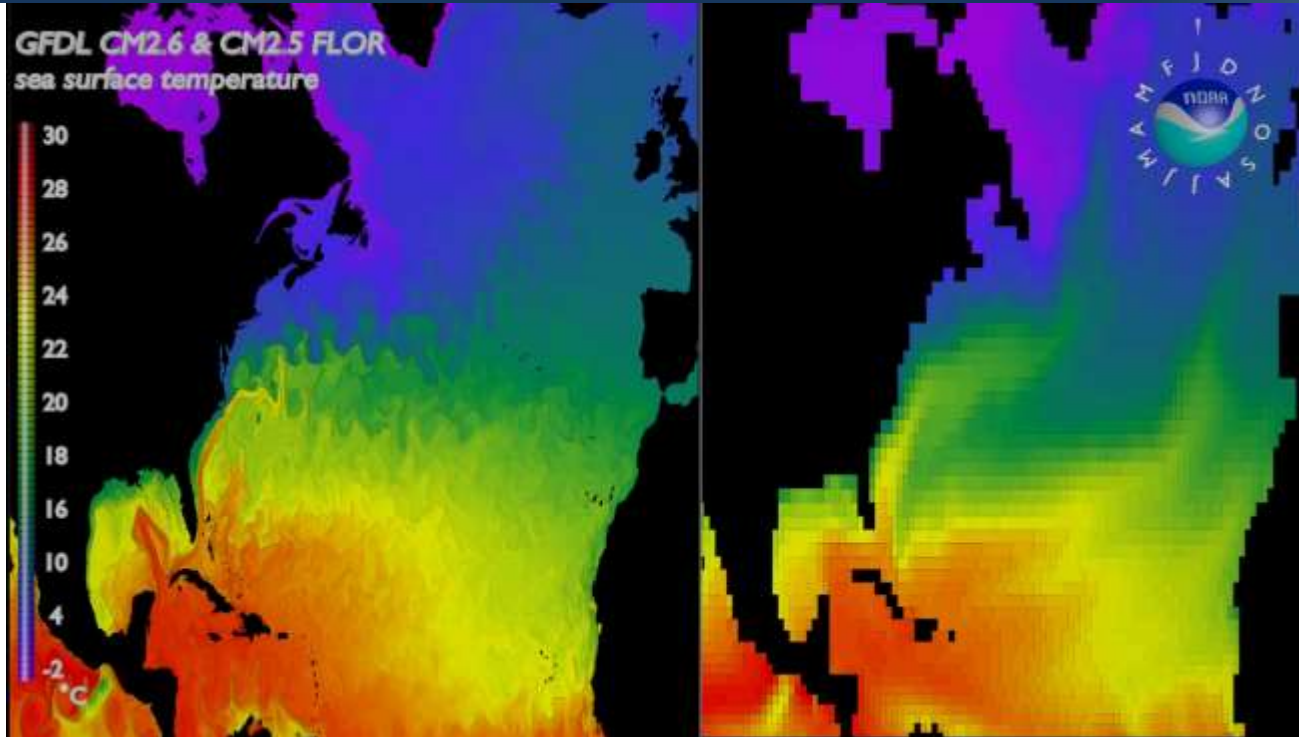
**AM4**

**MOM6**

GFDL 5-10 year strategic plan (2011):

- **CM4** to be the next generation climate model
- Trunk configuration: 0.5° atmosphere; 0.25° ocean

# Using GFDL OBGCs to optimize science



Animation: Whit Anderson

Model	Cost	Throughput
Workhorse spec	1/8 Gaea	5 yrs/day
CM2.6	1/6 Gaea	2 yrs/day
ESM2.6 (COBALT)	1/6 Gaea	.4 yrs/day
CM2.6miniBLING	1/5 Gaea	2 yrs/day



# Earth System Model Components

