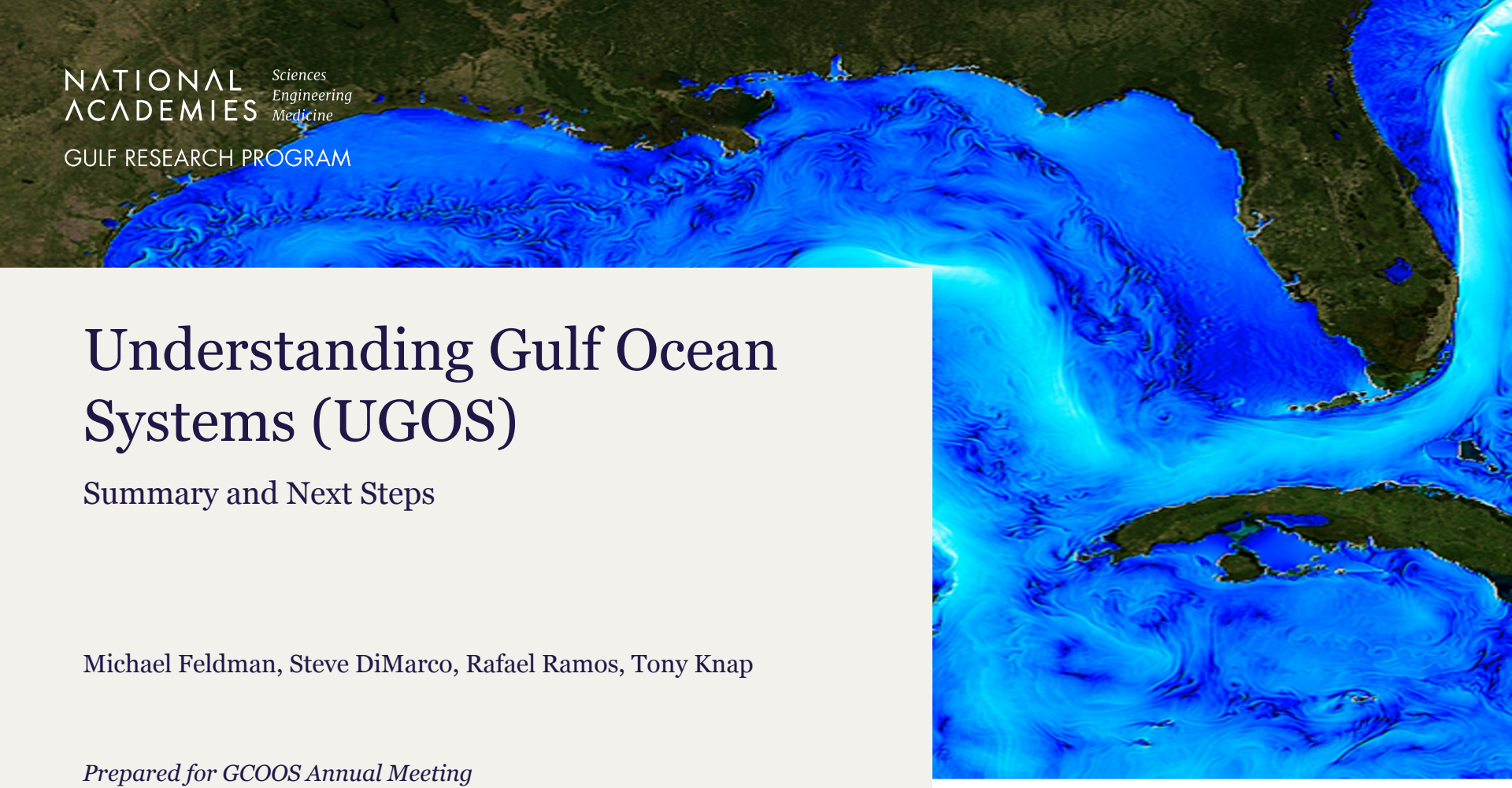
NATIONAL ACADEMIES Sciences Engineering Medicine

GULF RESEARCH PROGRAM



Understanding Gulf Ocean Systems (UGOS)

Summary and Next Steps

Michael Feldman, Steve DiMarco, Rafael Ramos, Tony Knap

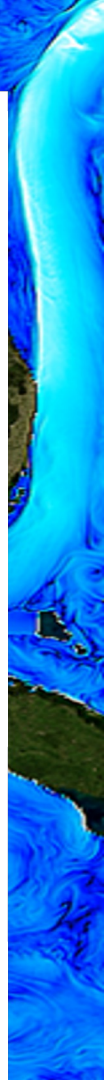
Prepared for GCOOS Annual Meeting

DATE:4/14/2026

UGOS Goal

"…focused on improving the skill of sustained continuous operational forecasts, and associated physical understanding, of ocean dynamics for the reduction of risks in offshore energy exploration and production in the Gulf of Mexico (GoM) where deep-water drilling and production occur and/or anticipated…"

- Better understanding and predictive capability of the Loop Current can improve:
  - Hurricane forecasting
  - Search and rescue
  - Oil movement
  - Industry safety and efficiency
  - Fisheries management



UGOS Legacy and Impact

By the time UGOS concludes in 2027:

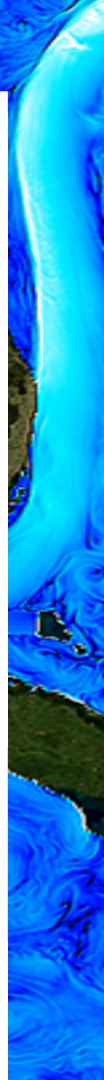
- Ongoing for 10 years across 3 different funding cycles
- Total GRP investment $40 Million

What advances/accomplishments can be attributed to UGOS that were not available before UGOS

- Respect
  - Observations ⟷ Models
- Gulf community
  - Fractured ⟶ Coherent
- Stakeholders/Transition
  - Unengaged ⟶ Engaged

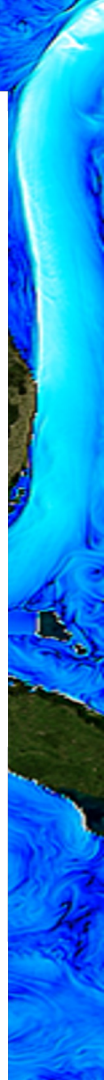
What **Science** advances/accomplishments can be attributed to UGOS?

- Adaptative Sampling
- Use of adaptative sampling data in data assimilative models
- Model inter-comparisons



What **Infrastructure and Capacity** advances/accomplishments can be attributed to UGOS?

- International Collaborations across Gulf
- Industry-Academic-Government Collaborations
- Early Career Researcher Network
- Data archives (useable)

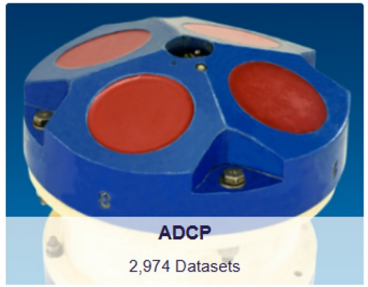


Understanding Gulf Ocean Systems Data Catalog

ugos.info

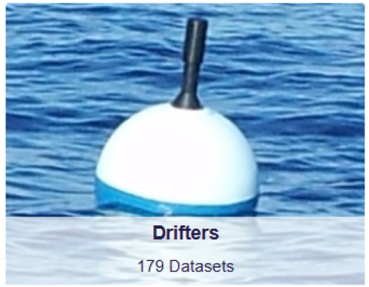
The Understanding Gulf Ocean Systems (UGOS) Initiative is part of the Gulf Research Program (GRP) focused on improving the skill of sustained continuous operational forecasts, and associated physical understanding, of ocean dynamics for the reduction of risks in offshore energy exploration and production in the Gulf where deep-water drilling and production occur and/or anticipated. This data catalog, sponsored by GRP/NASEM, compiles data sources used in the development and evaluation of hydrodynamic models for the Gulf of America.

Enter search term...



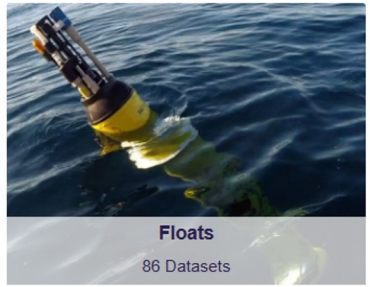
ADCP

2,974 Datasets



Drifters

179 Datasets

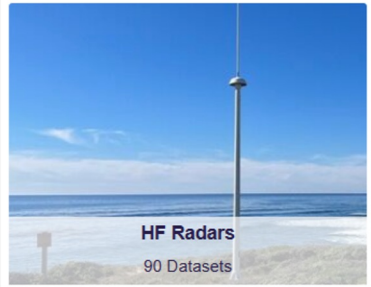


Floats

86 Datasets

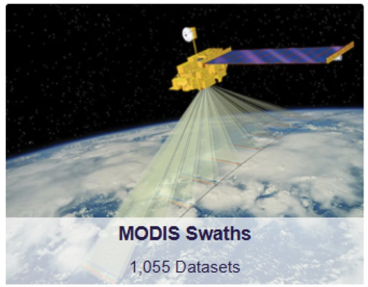
Gliders

155 Datasets



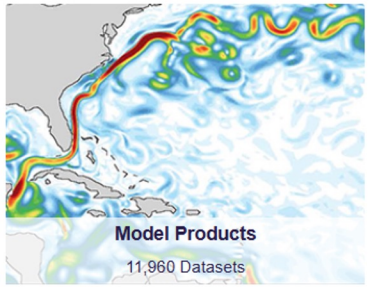
HF Radars

90 Datasets



MODIS Swaths

1,055 Datasets



Model Products

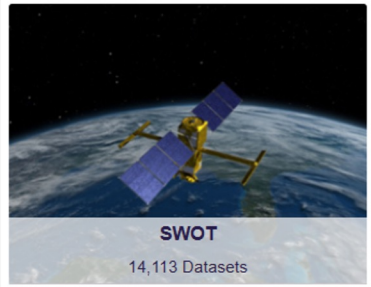
11,960 Datasets

PIES/cPIES

123 Datasets

ROCIS/AXBT

5 Datasets

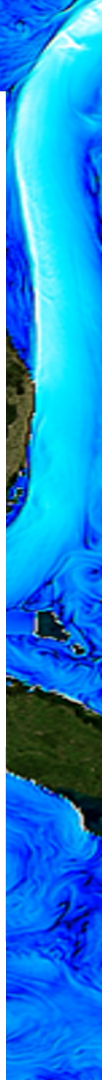


SWOT

14,113 Datasets

What's Next

- Analysis, modeling, and documentation
- Prepare for the next UGOS Annual Meeting (Sept, 2026 in DC)
- Begin UGOS "retrospective" evaluation
- Continue emphasis on Stakeholder engagement and transition
- UGOS Special Issue of Oceanography Magazine – Publication in Fall of 2027
- Planning for a final, capstone event, in DC to culminate 10 years of UGOS in Fall of 2027



It takes a village…

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