Motivation for this workshop

- Ocean mesoscale eddies are important for climate and intellectually rich.
- Those doing research related to mesoscale eddies are **superb individuals** who enjoy discussing and debating interesting and tough issues.
- It has been nearly 20 years since the publication of two seminal papers on mesoscale eddy parameterization:
  - Gent and McWilliams (1990)
  - Greatbatch and Lamb (1990)
- The year 2008 saw the passing of one of our greatest and most gracious colleagues: Peter Killworth.
  - Special edition of *Ocean Modelling* in honour of Peter Killworth; articles due 30 June.
Workshop goals

- **To educate** the research community (including students) regarding the importance of mesoscale eddies in the World Ocean, and correspondingly for establishing features of the ocean climate system;

- **To identify best practices** for parameterizing ocean mesoscale eddies in coarse resolution climate models, and to discuss various research avenues for improved parameterizations;

- **To evaluate** the ability of state-of-the-science numerical models to accurately represent the ocean mesoscale in eddying simulations.
Workshop format

- 70 minutes per speaker, including questions and discussion.
- Presentations aim to weave together multiple strands of ongoing research.
- Speakers should provide candid and critical comments on various research avenues, not being shy about provoking healthy discussion and debate.
- Presentations should be given in a pedagogical style.
- An impressive array of posters are for viewing between the presentations and during breaks.
Workshop products

- Interactions, networking, and education
- Presentations will be posted on WGOMD web site for future reference.
- There are plans for special edition of *Ocean Modelling* in 2010 focusing on mesoscale eddies. To be announced in near future.
Thanks to the following

**Special people**
- Helene Banks and Malcolm Roberts: for kindly hosting us
- Lesley Challenger, communications coordinator of the Met Office: for organizing nearly everything!
- Anna Pirani, CLIVAR: for coordination and for obtaining extra funding.

**Special organizations**
- UK Met Office: workshop venue
- NOAA, NSF, and NASA: for sponsoring 13 young scientists who have brought posters to the meeting.
- CLIVAR Working Group for Ocean Model Development (WGOMD): for providing scientific organization
WGOMD: who are we?

Active members
- Helene Banks (co-chair retiring): Met Office Hadley Centre
- Stephen Griffies (co-chair retiring): NOAA/GFDL
- Helge Drange (co-chair): University of Bergen, Norway
- Gokhan Danabasoglu (co-chair incoming): NCAR
- Matthew England: University of New South Wales
- Richard Greatbatch: Leibniz-Institut für Meereswissenschaften
- Gurvan Madec: LODYC, Institute Pierre Simon Laplace
- Anna Pirani: CLIVAR Project Office and Princeton University
- Hiroyuki Tsujino: Japan Meteorological Agency

Those who just keep hanging on
- Claus Böning: Leibniz-Institut für Meereswissenschaften
- Eric Chassignet: Florida State University
- Rüdiger Gerdes: Alfred Wegener Institut für Polar- und Meeresforschung
- Anne Marie Treguier: Laboratoire de Physique de Océans
WGOMD Workshops: past, present, and future

- State of the Art in Ocean Climate Modelling: June 2004, Princeton/GFDL.  
  www.clivar.org/organization/wgomd/wgomd5/gfdl04.php
- Late 2010: NCAR, Boulder USA. TBA.
Workshop Logistics

- Speakers for the day please upload your talks to the common laptop during a break prior to your presentation. If you have animations...then test your laptop prior to talk.
- All lunches and teas are outside the conference room on the balcony.
- Icebreaker and full buffet dinner on Monday evening
- Drinks and nibbles on Tuesday evening
- Coash rides back to city arranged for Monday and Tuesday evening after the social events.
- Posters to be displayed on numbered boards. No special poster session, but plenty of time between sessions (40+ posters).
- No wireless, but 2 PCs available for those needing connections during the day.
Day 1: Observing and simulating the ocean mesoscale

- 0850:0900: Stephen Griffies (GFDL): Welcome and introduction
- 0900-1010: Carl Wunsch (MIT): Observations, simulations, and assimilations
- 1010-1120: Dudley Chelton (Oregon State): Global mesoscale eddy variability from satellite altimeters
- 1120-1230: Matthew Hecht (Los Alamos): POP simulations in an eddying regime
- 1230-1330: lunch
- 1330-1440: Steve Rintoul (CSIRO): Mesoscale processes in the Southern Ocean
- 1440-1550: Malcolm Roberts (UK Met Office Hadley Centre): Impacts of the mesoscale on coupled phenomena
- Buffet Reception held at the Met Office (Hadley Centre, UK)
Day 2: Parameterizing the mesoscale

- 0850-1000: Peter Gent (NCAR): Gent-McWilliams with 20/20 Hindsight
- 1000-1110: Richard Greatbatch (IFM-GEOMAR): Interpretation of mesoscale eddy mixing
- 1110-1220: Carsten Eden (IFM-GEOMAR): Parameterisation of mesoscale eddy mixing
- 1220-1330: lunch
- 1440-1510: Trevor McDougall (CSIRO): Thermodynamic Equation of State of Seawater-2010
- 1510-1620: John Marshall (MIT): The interplay between baroclinic instability, geostrophic turbulence and Rossby waves in the ocean (and routes to parameterisation)
- 1620-1730: Raffael Ferrari (MIT): Lateral and vertical variations in eddy mixing
Day 3: At the Frontier

- 0850-1000: **Michael Bell** (UK Met Office): Forecasting the ocean mesoscale
- 1000-1110: **Mike Spall** (WHOI): Eddies and deep water formation
- 1110-1220: **Andreas Oschlies** (IFM-GEOMAR): Eddies and ocean biogeochemistry
- 1220-1330: lunch
- 1330-1440: **Baylor Fox-Kemper** (Colorado): Submesoscale dynamics and parameterization
- 1440-1550: **Anne-Marie Treguier** (Brest): Anisotropy, momentum fluxes: a few remaining challenges for parameterizations
- 1550-1700: **Jim McWilliams** (UCLA): Eddy roles in the general circulation