June 5, 2006
La Feliz Room, Seymour Center at Long Marine Lab
Center for Ocean Health Library at Long Marine Lab

ATTENDEES:
Raphe Kudela  UCSC/CIMT
Leslie Rosenfeld  NPS/CIMT
Yi Chao  JPL/CIMT
Scott Benson  NMFS/CIMT
Mike Weise  UCSC/TOPP/CIMT
Dan Costa  UCSC/TOPP/CIMT
Mark Carr  UCSC/PISCO/CIMT
Patrick Drake  UCSC/PISCO/CIMT
Heather Kerkering  CeNCOOS
Rondi Robison  CIMT
Gary Griggs  UCSC/CIMT
John Farrara  JPL
Lora Lee Martin  MBEST
Brian Fulfrost  UCSC/CIMT
Kelly Newton  UCSC/CIMT
Chris Clark  Cornell/CIMT
Asila Ghoul  UCSC/CIMT
Don Croll  UCSC/CIMT
Steve Lonhart  MBNMS/CIMT
Francisco Chavez  MBARI/CIMT
Mary Silver  UCSC/CIMT
Guest: Joana
Guest: Keitt

SUMMARY
Day 1 was focused on providing an overview of individual roles and contributions to CIMT since 2002, or if individuals are new to the project what they are bringing to CIMT. These presentations highlighted:

- the focus of efforts in CIMT
- accomplishments since 2002
- where individual research fits into CIMT
- kinds of data or information being provided and how is this being used by others or being accessed
- collaborations
List of presentators & brief titles (if presentations have been made available you may access them on the CIMT website http://cimt.ucsc.edu under the CIMT Workroom “CIMT June 2006 Workshop” – contact Rondi for password information)

- Raphe Kudela for Ken Bruland - Nutrients
- Raphe Kudela - Satellites
- Francisco Chavez – Mooring & Physical processes
- Leslie Rosenfeld - Winds
- Patrick Drake with Mark Carr – NEOCO/PISCO & CIMT
- Mary Silver – HABs
- Asila Ghoul for Baldo Marinovic – Krill sampling
- Dan Costa – Apex Predator Tagging
- Yi Chao - Modeling
- Don Croll – Marine Mammal & Seabird observations
- Chris Edwards – Integration of CIMT through Modeling
- Steve Lonhart – SIMoN & OceanObs
- Chris Clark – Bioacoustic
- Scott Benson – Sea Turtles, Jellies & expansion north
- Brian Fulfrost – integration of data sets in GIS format
- Funding Perspective by Gary Griggs and Lora Lee Martin
SUMMARY:
Day 2 was focused on what is needed in order to keep CIMT sustainable, what future directions do we need to consider and how do we move from a Center for Individual Marine Technologies to an truly Integrated Center.

Individuals were asked to come prepared by reviewing the following items:

1. Please review the following IOOS 7 goals. How does CIMT and the research of your group relate to these goals? Deployment of an Integrated and Sustained Ocean Observing System will

   - Improve the safety and efficiency of marine operations,
   - Improve prediction of natural hazards (including tsunamis and storm surges) to reduce resulting damages and costs,
   - Improve predictions of climate change and its socio-economic consequences,
   - Improve national security,
   - Reduce public health risks,
   - More effectively protect and restore healthy ecosystems, and
   - Sustain and restore living marine resources.

2. What are the critical questions that an integrated CIMT program can address, or how can we evolve or modify our efforts to maintain the program with national IOOS priorities now more clearly stated?

3. How is CIMT addressing the following
   a. How are we saving lives?
b. How are we saving money?
c. How are we effecting management decisions?
d. How are we important?
e. What are we impacting?

4. What 2-3 things does CIMT do well and how do we modify or strengthen these to be consistent with IOOS objectives?

5. Currently our program is perceived as non-integrated what sorts of commitments are you willing to make to move toward a Center for Integrated Marine Technologies?
   a. Meeting regular deadlines of providing progress information
   b. Collaborating with CIMT participants on publications or products
   c. Making CIMT a priority and contributing regularly
   d. Participation in decision making organizational structure
   e. Becoming a leader in a mission group

INTRODUCTIONS & BACKGROUND INFORMATION
State Perspective by Gary Griggs
CeNCOOS Presentation by Heather Kerkering

DISCUSSIONS:
- Sustainability of CIMT
  - What are the needs of the state, CeNCOOS & IOOS
    o Marine Population (CeNCOOS)
      ▪ Sustainable fisheries (State)
      ▪ MPAs (State)
    o Water Quality (CeNCOOS)
      ▪ Public Health
      ▪ Coastal Water Quality
    o Marine Operation (CeNCOOS)
      ▪ Navigation (IOOS)
      ▪ Oil Spill (CeNCOOS)
    o Coastal Inundation (IOOS)
      ▪ Sediment Management (State)
    o Disaster Resiliency (IOOS)
      ▪ Levee Maintenance (State)

- What could CIMT do well?
  o Water Quality
    • Nearshore/Offshore Bacteria
      o Monitoring
      o Hotspots – spatially/temporally
    • HABS (Silver and Scholin)
      o How they develop
      o Predictive Conditions
      o How they move through the food chain
      o How to Monitor
      o How they disperse
• **Marine Populations**
  - Larval Dispersal (MLPAs, Oil Spill) – Edwards
  - Critical Prey Hotspots (Croll, Harvey, Benson)
    - Spatial Patterns
    - Temporal Patterns

• **Endangered Species Hotspots**
  - Spatial Patterns
  - Temporal Patterns

• **Climate Variability and Change**
  - How it affects critical prey/endangered spp/ commercially important spp
  - How it affects HABS
  - “” water quality
  - LT change
  - Modeling/Prediction biological response
  - Sea Lion Fisheries Issue (Costa, Weiss)

• **Marine Operations**
  - Wind Page (ongoing)
    - Navigation
    - Recreation

• **Oil Spills (ongoing)**
  - Fate of Spill
  - Impact on seabirds/MMs

• **Offshore Aquaculture (static report)**
  - Concerns for siting - currents/wind, navigation, HABs, Protected spp
  - Ecosystem Impacts
  - Nutrients/Productivity
  - Trophic Impacts (schooling fish)

• **Product Items and Deadlines:**
Table 1: CIMT_ Themes and Deadlines

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Publications with deadlines:

- **Rapid**
  - Oceanography (DON) – 3 months draft (August 31st)
  - EOS (YI) – 2 months
  - Brochure (Gary) – 1 month

- **High Impact**
  - Review 97-98 (Chavez) – by the end of August

- **Special Issue** (Dan and Rondi) – paper titles/abstracts (July 15th to Rondi)/then decide on journal (August 15th)/draft 10/15/06
  1. HABS
  2. Marine Mammals
  3. Krill
  4. Models
  5. Phys Oceanography
  6. Iron
  7. Nutrients and Chlorophyll

- **State of Ecosystem** (Chavez, Tanner) – mid August (when Francisco’s intern leaves)

        Nearshore    Pelagic    MidWater    Deep-Sea    Living Resources
        PISCO        CIMT +
        CICORE

        HAB Monitoring
        Hotspots (Key species) (linked to nearshore)

Products with deadlines (refer to Table 1):

- **HABs Management Technical Report** – Silver/Scholin (gray lit or similar to USGS fact sheets) – September 30
- **Critical Prey Species** – Croll/Harvey – May 2007
- **Larval Dispersal** – Edwards – May 2007
- **Sea Lion Fisheries** – Costa & Weise – Sept 30
- **State of the Ecosystem** – Chavez – August 16
- **Wind page** – August 31 press release
- **Oil spills - Press Prep** – limited to safe seas – August 31 – UCSC press

Future Directions

- Meeting in July or early August to discuss modifications to CIMT methodology and to discuss any changes to budget Items to have prepared:
  - Current August 2006 budget will be circulated
• Adjust ship surveys – merge Pt. Lobos and Martin – could be free ship time from Sanctuary – more efficient and save costs, cut down number of surveys, lines… - glider?
• Expand outside of MB (Scott, John, PRBO…)?
• Remove mooring
• Steve Sanctuary Plan or Opportunities with ship surveys
• Invite NMFS – Churchill Grimes
## Contacts

### CIMT Principle Investigators August 2006

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