NOAA ORR
and
Coastal Response Research Center

Joint Meeting

January 9, 2006

Thanks

- Glad to be back in Seattle
- Thanks for attending
- Thanks to Amy Merten for logistics
- Looking forward to our discussions

Coastal Response Research Center Introduction

Center Creation

- ORR/UNH oil spill partnership started in 2002
  - Competitive grants program with CICEET
  - 2002 Congressional appropriation = $0.5M
  - 2003 Congressional appropriation = $0.75M
  - NOAA provided RFP topics and peer review
- Coastal Response Research Center formed in 2004
  - MOA UNH/NOAA dictates co-directors, Advisory Board, Science Advisory Panel
- Co-Directors:
  - UNH – Nancy Kinner
  - NOAA – Carol-Ann Manen

Overall Center Mission

- Develop new approaches to spill response and restoration through research/synthesis of information
- Serve as a resource for ORR and NOAA
- Serve as a hub for spill research, development, and technical transfer
  - Oil spill community (e.g., RRTs)

Specific Center Missions

- Conduct and oversee basic and applied research and outreach on spill response and restoration
- Transform research results into standards of practice
- Encourage strategic partnerships to achieve mission
- Conduct outreach to improve preparedness and response
- Create a learning center to promote awareness of capabilities and realistic expectations about risks and benefits

Center Oversight Boards

- Center Advisory Board
- Science Advisory Panel
- NOAA ORR Interface

Center Advisory Board Duties

- Review and evaluate Center's general policies, research themes, and priorities
- Evaluate Center's programs, activities and budget
- Help establish partnerships with public and private sectors
- Conduct long-term planning to coordinate Center activities

Advisory Board Membership

- NOAA: David Kennedy, Jim Murray (Sea Grant)
- USCG: Capt. Steve Hanewich
- USEPA: Reg. 1 Administrator Robert Varney
- API: Robin Rorick
- State Agencies: Robin Jamail (TX GLO)
- UNH: John Aber (VP Research), Jon Pennock (Marine Prog. Director)
- Ex Officio: Co-Directors CRRC, CICEET, JHC

Science Advisory Panel Duties

- Advice/recommendations on quality and usefulness of the funded projects
- Representatives from research community and users groups:
  - Academia
  - Governmental agencies (state/federal)
  - Private sector

Science Advisory Panel Membership

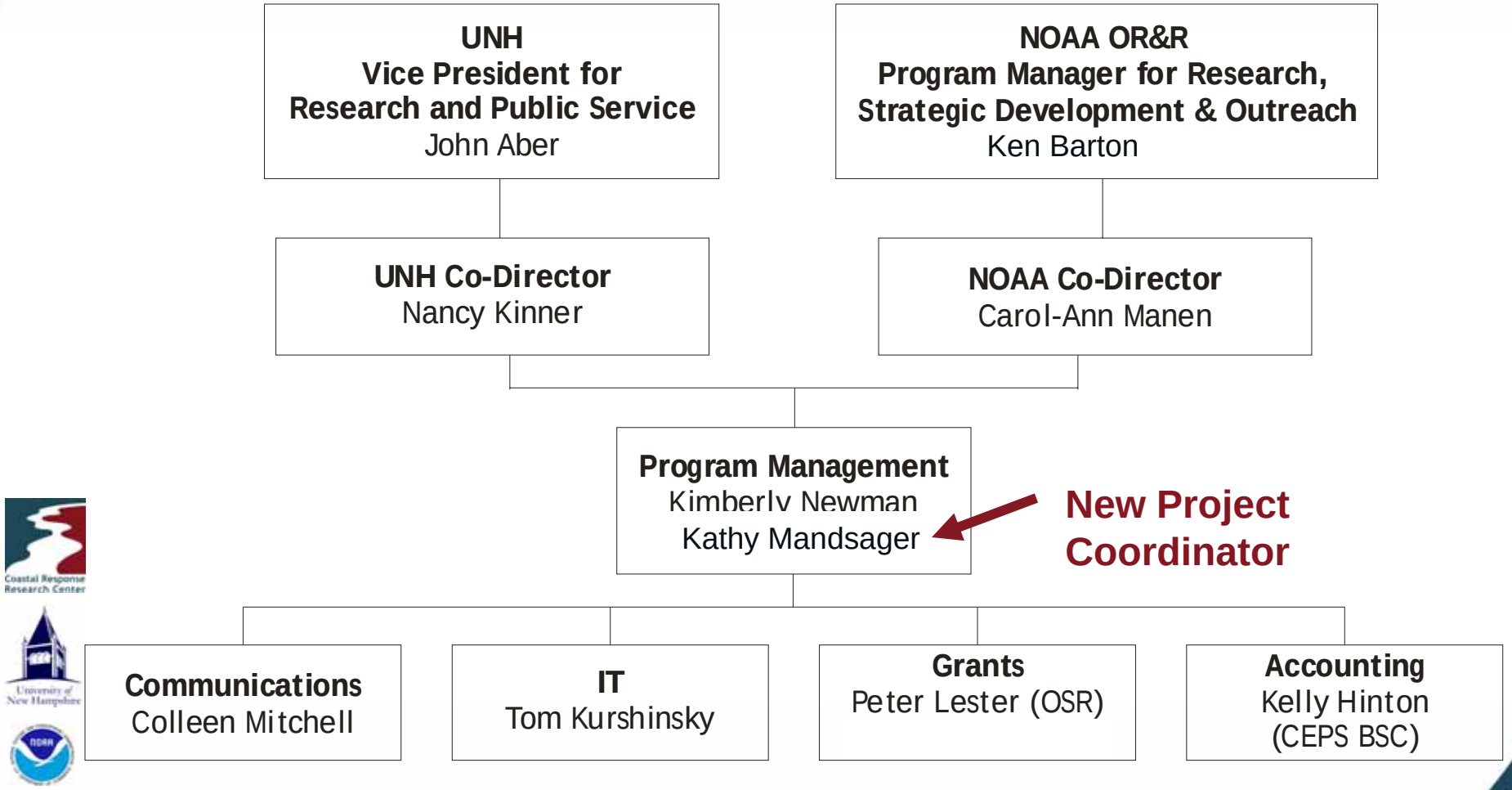
- NOAA: Mark Fonseca
- Other Federal Agencies: Roger Helm (FWS), Ken Hinga (USDA)
- State Agencies: Yvonne Addassi (CA OSPR)
- Academia: Tom Leschine (UWA)
- Industry: Jim Clark (ExxonMobil)

NOAA Interface

- Biweekly conference calls with Ellen Clark, Bob Pavia, Bill Conner, Amy Merten, Lisa DiPinto
- Regular meetings with David Kennedy
  - Center will report directly to him after March 2006
- Trips to NOAA facilities
- Meetings with SSCs at RRT meetings
- NOAA practitioners workshops
- NOAA input on RFPs and proposal reviews

Center Staffing

Center Staffing



NOAA Co-Director

- Carol-Ann Manen retiring at end of March 2006
- ORR (Kennedy) and UNH have discussed
- NOAA in process of filling up-coming vacancy

David Kaiser

- NOAA NOS Office of Ocean and Coastal Resource Management
  - Senior policy analyst and federal consistency coordinator
- UNH ‘82 B.S. Political Science; URI ’88 M.A. Marine Affairs; George Washington ‘94 J.D.
- Permanent move to UNH
- Center is “sponsoring” him
- NOAA’s Coastal Zone Management Federal Consistency Liaison
- Interest in teaching policy courses

Center Research Faculty Hire

- UNH Co-Director is full salary position
  - Kinner is tenure track professor
  - Two course teaching release time and 1 month summer salary = ~$40,000
  - ~ $54,000 remaining
- Concept :Hire full time research assistant professor
  - Area = some aspect of human dimensions of oil spills
  - Interface with David Kaiser and ORR
  - New expertise for Center
  - UNH interface with UNH Resource Economics Dept and Carsey Institute on Policy Research
  - Faculty affiliation = UNH Environmental Engineering Program

Center Budget

Center Appropriation

- Center funded by annual Congressional appropriation
  - Senator Gregg (NH)
  - Not in NOAA's base budget
- Recently $2M annually appropriated
- Assessments prior to award
- UNH Award in FY'04 = $1,978,945
- NOAA agreed not to take any assessment, only Congressional assessment taken

FY 2005 Budget (Current Center Year)

- $2M Congressional Appropriation
- Congressional assessment ~1%
- NOAA assessment = $284,633 (14%)
  - Federal travel related to Center
  - NOAA Co-Director's salary and travel
- Actual UNH Award = $1,694,312

Center Budget Categories

- Administration
- External Research
- Internal Research
- Outreach

FY'05 Budget

	Expected	Actual
Administration	$504,841	$438,657
External Research	$1,154,300	$1,000,927
Internal Research	$204,400	$177,603
Outreach	$86,460	$75,125
Total Available	$1,950,001	$1,694,312

FY'06 Appropriation (Center Year Oct '06 to Sept '07)

- **$2M for standard operations**
- **$1M for dispersants/submerged oil initiative**
  - **Selected because of Senator's interests and discussions with NOAA**
- **Senator Gregg no longer chairs subcommittee overseeing NOAA appropriation**
  - **Still on subcommittee**
  - **Chairs Senate Budget Committee**

FY ’06 Appropriation

- Congressional assessment = $11,400
- NOAA assessment = $476,800
  - Management fee
  - NOAA Co-Director’s salary and travel
  - Center-related federal travel
  - Coverage of NOAA staff salaries for Center-related work
  - W. Blanchard (UNH undergrad summer intern)
- Actual UNH award = $2,511,800

Center Budget ’06-’07

- Use of funds designated in UNH request for Center appropriation
- Extra funding into external grants with dispersant emphasis and workshops
- Planned workshops
  - Submerged/Heavy Oil Research Needs
  - Research Needs for Integrating Ocean Observing Systems and Oil Spill Response/Recovery
    - Use of current OOS and development of new technology
    - Summer institute – Topic to be determined
- Otherwise budget will be similar to current year

UNH Center FY '07 Appropriation Request

- $2M for standard operation
- $1M for research initiatives on:
  - Submerged/heavy oils
    - Based on workshop recommendations
    - Likely detection/tracking
    - Coordinated with UNH/NOAA Joint Hydrographic Center
  - Coastal/Ocean observing system technologies for oil spill response
    - Based on workshop recommendations
    - Coordinated with UNH/NOAA Center for Coastal and Ocean Observing

Ongoing Research Projects

Current Project Status
FY '02 – Present

Priority Areas: FY'02 and '03

- Improving the understanding of oil spill fate in coastal environments
- Measuring the environmental fate of oil spills
- Resolving uncertainties about the long-term fate and effects of dispersing oil
- Understanding "How clean is clean enough"

Projects: FY'02

COMPLETED

- Use of Natural Oil Seeps for Evaluation of NEAT SWEEP Dispersant Application Technology and Intercalibration of NOAA SMART Monitoring Protocols with Measurements of Dissolved-Phase and Dispersed Oil Droplet Concentrations in the Water Column, James R. Payne ($60K)
- A Module for NOAA's GNOME Model To Provide Capability To Simulate Deepwater Oil and Gas Spills, Poojitha D. Yapa ($40K)
- Development of Oil Spill Response Cost-Effectiveness Analytical Tool, Dagmar Schmidt-Etkin ($57K)
- Fate and Effects of Emulsions Produced after Oil Spills in Estuaries, Richard F. Lee ($169K)

Payne: Seeps

- Dispersant field trial using the Coal Oil Point seeps
- Partnered with CA OSPR, CA FG, US FWS, NOAA, USCG, Spiltec
- Permits identified as a priority
  - Built a strong partnership in CA
  - Worked through the permitting process
- Tailgate experiment indicated seep oil too degraded to disperse

Yapa: GNOME and CDOG

- GNOME: General NOAA Oil Modeling Environment
- CDOG: Clarkson Deepwater Oil and Gas Blowout model
- Use algorithms developed from Deepspill, industry, MMS, international field experiment to extend NOAA modeling capacity from surface trajectory to 3-D
- Working partnership with NOAA HAZMAT modelers
- Used in Thunderhorse exercise
  - Resulted in follow-on proposal
  - Peer reviewed publication with NOAA scientists

Lee: Emulsions

- Need for information on persistence and effects of emulsions
- Mesocosm experiments
- Qualitative data as input to Ecological Risk Assessments

Projects: FY'03

- **COMPLETED**
- Improvements to the Work on Integration of NOAA's GNOME Model with CDOG Model, Poojitha D.Yapa ($66K)
- Utility of Meiobenthos for Risk Assessment of Low-Level Crude Oil WSFs: Rapid Copepod-based Approaches for Evaluating Reproductive and Population level Toxicity, G. Thomas Chandler($120K)

- **On-Going**
- Acute and Chronic Effects of Crude Oil and Dispersed Oil on Chinook Salmon Smolts, Ronald, S. Tjeerdema ($150K)
- Dispersants as Oil Spill Countermeasure for Remediation and Restoration in Sensitive Coastal Habitats, Q. Lin, ($188K)
- Impacts of Low Level Residual Oil on Toxicity Assessment and Improving the Predictive Modeling of Environmental Fate of Oil Spills, D.Di Toro/ J. McGrath, ($97K)

Completed Projects FY'03

Yapa: GNOME and CDOG

- Improved integration and error checking
- Working partnership with NOAA HAZMAT/modelers
- Peer reviewed publication in preparation

Chandler: Lifecycle Assay

- Copepods cultured through 2 life-cycles
- Endpoints monitored included mortality, fertility, fecundity, hatching success, and sex ratio
- Population effects modeled
- Outcomes
  - ASTM Standard
  - Peer reviewed publications (2)
  - SETAC poster

Ongoing FY'03 Projects

- **Salmon smolts (Tjeerdema)**
  - **Effects of dispersed and non-dispersed oil**
  - **3-year project**
  - **Matching funds from CA OSPR and UCD Oiled Wildlife Care Network**
  - **Endpoints monitored include mortality, metabolic stress and long-term growth**

Ongoing FY'03 Projects

- Dispersants/marshes (Lin)
  - Mesocosm study using native plugs
  - Innovative tidal cycle dosing
- Toxicity low levels residual oil (McGrath)
  - Literature/modeling study
  - Extension of TLM/narcosis work

Priority Areas: FY '04

- Recovery of natural resources
- Injury to natural resources
- Communication/Gaming
- Communication/Performance metrics
- Preparing for Spills of Opportunity
- Other (November Workshop topics)

Projects: FY'04

- Establishing Performance Metrics for Oil Spill Response, Recovery and Restoration, Seth Tuler ($205K)
- Acute and Chronic Effects of Oil, Dispersant and Dispersed Oil to Sensitive Symbiotic Cnidarian Species, Including Coral, Carys Mitchelmore ($200K)
- Survival Time Models Quantitatively Predict Lethal Effects of Pulsed and Different Duration Exposures to Water-Accommodated Fractions of Spilt Oil, Michael Newman ($200K)
- Integrating Physiological and Demographic Parameters in NRDA, Florence Tseng ($96K)
- Studies Using Aquatic Turtles to Assess the Potential Long-Term Effects of Oiling of Nests During Early Embryonic Development, Christopher Rowe ($205K)

Summary:Projects

- FY'02
  - 4 projects
  - Total $326K
  - 1 dispersants, 1 forecast modeling
- FY'03
  - 5 projects
  - $621K
  - 2 effects of dispersants, 1 forecast modeling, 2 chronic effects
- FY'04
  - 5 projects
  - $1,053K
  - 2 effects of dispersed/no dispersed oil, 2 environmentally realistic exposures, 1 communication/performance metrics

2005 Annual RFP Topics

- Data sets to verify fate and transport models
- Integrating regional observing systems with circulation and transport forecasts
- Recovery of natural resources
- Injury to natural resources
- Valuing restoration
- Effects and efficacy of dispersants

Projects FY '05

Datasets for Verification of and Integrating Regional Observing Systems with Fate and Transport Models

- **Field Verification of Oil Spill Fate and Transport Modeling and Linking CODAR Observation System Data with SIMAP Predictions. PI: J. Payne (Payne Environmental Consultants, 18 months, $196,041**

Projects FY ’05
Injury to Natural Resources

- **Relationship Between Acute and Population Level Effects of Exposure to Dispersed Oil and the Influence of Exposure Conditions Using Multiple Life History Stages of an Estuarine Copepod, *Eurytemora affinis*, as a Model Planktonic Organism. PI: D. Aurand (Ecosystem Management and Associates), 20 months, $232,062**

Projects FY '05
Valuing Restoration

- Combined two "Valuing Restoration" projects at suggestion of peer and panel reviewers
- Monetary Values and Restoration Equivalents for Lost Recreational Services on the Gulf of Texas Due to Oil Spills an Other Environmental Disruptions. G. Parsons (U. Delaware), 24 months, $139,366
- Convergent Validity Test of the Parameter Updating Method. C. Poulos (Research Triangle Institute), 18 months, $42,119

Projects FY '05
Dispersants

- **Effects of Dispersants on Oil-SPM Aggregation and Fate in U.S. Coastal Waters. PI: A. Khelifa (Environment Canada), 12 months, $126,378**
- **Wave Tank Studies on Dispersant Effectiveness as a Function of Energy Dissipation Rate and Particle Size Distribution. PI: K. Lee (Canada DFO), 24 months, $199,999**

Cold Climate RFP

Partnership of Coastal Response Research Center, CICEET, MMS and OSRI

2005 Cold Climate RFP

- Completed in March 2005
- 11 preproposals
- 6 invited proposals
- Only 1 project funded
  - By CICEET
  - Yapa: Oil in Ice model to interface with GNOME
- Quality not as good as Center's Annual RFP
  - Total available is $0.5M
    - Less attractive to PIs
    - $1M available in 2006
  - International expertise issue
  - Distribution not as broad
    - Oil spill intelligence reporter
    - Oil / Ice community ties (CRREL, MMS, Sintef)

2006 Cold Climate RFP Topics

- Detection, containment and clean-up of oil spills
- Exposure and injury assessment tools
- Data development: Processes and rates affecting oil
- Human use valuation of ecosystems
- Habitat recovery and restoration technologies

- Final Panel Review: Feb.13, 2006

Outreach/Partnerships

Building Partnerships/Outreach

- Participating in conferences
  - IOSC (Booth and paper)
- Hosting Workshops
  - November 2003 research needs (invited only)
  - March 2005 funded projects (open to all)
  - Dispersants research needs (invited only)
- Making Presentations
  - RRT meetings
  - API Spills Advisory Group meetings
- Other Activities
  - Visits to OHMSETT and CRREL
  - Participation in “Oil in Ice” planning
  - Information to “Oil Spill Intelligence Reporter”

Outreach Workshops

- March 2005 - Emerging Research Workshop
  - Center PIs presented results
    - Talks and posters
    - Posted on website
  - Free and open to all
- Will be held bi-annually in spring
  - Next one in Spring 2007
  - Only Science Advisory Panel meets with PIs and Co-Directors in March 2006 to review projects

Dispersants Initiative

- Center and NOAA convened meeting of NRC, USEPA, MMS, USCG, TXGLO, OSRI, LA OSRD, CAOSPR, API, and Industry reps
  - July 2005 in Silver Spring
  - Amy Merten represented NOAA ORR
- General willingness by all parties to participate in formulation of integrated research plan (Dispersants Working Group)
- Workshop on research needs for making decisions regarding dispersing oil

Dispersants Workshop

- UNH on Sept 20-21, followed by Dispersants Working Group planning meeting on Sept 22
- ~35 invitees from regulatory agencies, academia, private sector
- Jacqui Michel = facilitator
- J. Michel and A. Merten writing summary of research needs identified at workshop
  - Will be available on website

Dispersants Workshop

- **Discussion topics:**
  - **Dispersants effectiveness: Parameters that affect overall effectiveness**
    - **Chemical**
    - **Operational and hydrodynamic**
    - **Modeling integration**
  - **Effects of dispersants**
    - **Fate of oil and dispersed oil in the water column and other habitats**
    - **Realistic exposure regimes**
    - **Toxicity testing**

Dispersants Working Group

- **Center coordinates this group**
  - **Share information on dispersants research opportunities and WG organizations on Center website**
  - **Agreement by members to coordinate on RFPs and reports**
  - **Keep monies separate and maintain autonomy**
  - **Possible conference session in 2006/2007**
  - **Members = NOAA, USCG, MMS, EPA, TXGLO, LAOSRDP, CAOSPR, API, ExxonMobil, BP, AKDEC, PWSRCAC, CIRCAC, OSRI**

2006 Outreach

- Social, economic and political aspects of oil spills research needs workshop
  - Social and economic issues, risk management/communication, public/environmental policy
- Identified as research needs in 2003 and 2004 workshops
- Center has had RFPs/projects on communication/performance metrics and valuing restoration
- Anticipated date: June 2006

2006 Outreach
Social, Economic and Political Aspects Workshop

- Organizing committee to work with Co-Directors
  - 3 members from NOAA
    - Mary Beth Bauer (NCCOS), Gary Ott (HAZMAT), Steve Thur (DAC)
  - Yvonne Addassi: CAOSPR, Science Advisory Panel, Dispersants Working Group
  - Two others from list of researchers suggested by NSF and NRC
    - Duane Gill (Miss. State) and Carol Silva (TAMU)
    - Leaders in research on socio-economic aspects of environmental issues; risk management and communication; and environmental policy

2006 Outreach
Summer "Institute"

- Topic to be determined
- Gordon Conference model where topic is explored in talks and discussions
- Possible topic from Dispersants Workshop
  - Interface between oil spill models and toxicology

Future Outreach Initiatives

- **Participation in Experimental Oil Spill in Pack Ice**
  - **Planned for International Polar Year (2007/2008)**
  - **Possible sites: Canada, Norway**

Future Outreach Initiatives

- **Submerged/Heavy Oil Research Needs Workshop**
- **Coastal/Ocean Observing Systems and Oil Spill Response/Recovery Research Needs Workshop**

Coastal Response Research Center

www.crrc.unh.edu

RFP Process and Schedule

Annual RFP Mechanics

- Internet distribution, preproposal and proposal submittal, and reviews
- Issue RFP in May
  - RFP process now started in beginning of year
  - Will work on this later today
- Projects funded start following January/February
- ~$1 to 1.2M funding available annually
  - More in 2006 due to increase in Congressional appropriation

Preproposals

- Submit preproposal first
  - Academia, private sector, NGOs, Fed/State
  - Early July
- Reviewed by Center Co-directors for compliance with RFP guidelines
- Screened by panel of 5-7 experienced scientists and practitioners for relevance to RFP, innovation and usefulness
- Invited for full proposal, if meet these criteria
  - US/International, no profit allowed, federally-negotiated overhead

Proposals

- Notification on invitation to write full proposal in late July
  - PIs receive Panel's input from Co-Directors
  - Usually 12-14 requested
- Submit proposal in Sept. (15 pages)
- External peer review
- PI rebuttals of external peer reviews
- Panel peer review and funding recommendations
- Funding notification in November

External Peer Review

- **4 external peer reviews per proposal**
  - **Experts in field, practitioners/potential users**
  - **One may be from PIs suggested list, 3 others selected by Co-Directors**
- **Reviewed for:**
  - **Technical approach and innovativeness** 30%
  - **Scientific and management relevance** 30%
  - **Transferability** 15%
  - **Budget appropriateness** 10%
  - **Qualifications of project investigators (PI)** 10%
  - **Support and capabilities** 5%

Panel Review

- **Panel members**
  - **6-8 with knowledge/expertise spanning topics**
  - **Experienced, practical scientists familiar with the impacts of oil on natural resources**
  - **Provided the preproposal reviews, full proposal, external peer reviews and PI rebuttals in advance**
- **Panel meeting at UNH**
  - **Rank proposals for funding based on innovation, quality of science and usefulness**
- **Funding recommendations to UNH VP Research**
  - **Co-Directors prepare slate based on Panel recommendations**
  - **VP makes final decision**

Mechanics of Panels

- Each panelist is the lead reviewer on each preproposal/proposal
- Two other panelists serve as secondary reviewers on each preproposal/proposal
- Entire panel can comment on each preproposal/proposal
  - Except if conflict of Interest, then must recuse oneself from that discussion
  - Panelists selected to minimize this
    - Hard to do completely in small field such as oil spills
- Entire panel votes on each preproposal/proposal
- Lead reviewer writes draft of panel review of preproposal/proposal
  - Incorporates input from secondary reviewers and panel

Lessons Learned Thusfar

- Scheduling of RFP
  - Start earlier for May release
  - Get broader ORR and oil spill community input (e.g,. RRTs)
- Peer review
  - Reviewers – need lots of them
  - Raise confidentiality and conflict of interest awareness

Lessons Learned Thusfar

- PIs
  - Little experience with:
    - Feedback for program directors and Science Advisory Panel
    - Must revise proposed scope of work based on Panel comments before funding
    - QA plans required before research can start

Center Peer Reviewers

- Asked to serve as only one type of review per year
  - Preproposal panel, external peer reviewer or proposal panel
- Reviewers not divulged
- Conflict of Interest forms must be completed and signed
- Confidentiality forms must be signed

Center Peer Reviewers
Rules of Engagement (NSF)

- Critical and impartial evaluation on merits of research
- If contacted by PIs prior to request for review, tell Co-Director
- Do not discuss preproposal/proposals with PIs
- Do not reveal reviewer status or other details of preproposal/proposals or process
- No pay for reviews, but panel travel covered
- Destroy all related documents and do not discuss them without Center permission

Conflict of Interest

- Affiliations with applicant's institution
- Relationship with someone named on proposed project
  - Family, business, collegial
- Interest in financial outcome of proposed project


Coastal Response
Research Center

University of
New Hampshire


2006 Annual RFP Topics

2004 Annual RFP Topics

- Recovery of natural resources
- Injury to natural resources
- Communication/Gaming
- Communication/Performance metrics
- Preparing for Spills of Opportunity
- Other (November 2003 Workshop topics)

2005 Annual RFP Topics

- Data sets to verify fate and transport models
- Integrating regional observing systems with circulation and transport forecasts
- Recovery of natural resources
- Injury to natural resources
- Valuing restoration
- Effects and efficacy of dispersants

2006 Annual RFP Topics

- Working draft formulated by Co-Directors
  - Based on previous topics, results of workshops, and Congressional appropriation requests
- Discussion and modifications by ORR
  - Today's input starts this process
  - Draft RFP completed by Center Co-Directors
- Input from Science Advisory Panel
- Input/Approval from Center Advisory Board
- Final version of RFP released in early May

RFP Topics Guidelines

- Focused on research needs
- Balance between too general and too prescribed
- Want to encourage new approaches to topics
  - Innovations from other fields
- Role of primers to get non-oil spill researchers aware of issues

Draft 2006 Annual RFP Topics

2005 RFP

- Data sets to verify fate and transport models
- Integrating regional observing systems with circulation and transport forecasts

2006 RFP

- Verification, validation updating existing circulation and transport models

Draft 2006 RFP Topics

2005 RFP

- Recovery of natural resources
- Injury to natural resources
- Valuing restoration
- Efficacy and effects of dispersants

2006 RFP

- Recovery of natural resources
- Injury to natural resources
- Valuing restoration
- Efficacy and effects of dispersants
- Development of information on weathering, fate and effects of heavy oils

Draft 2006 RFP Topics

- **Other suggestions of topics????**
- **Accompanying RFP paragraphs**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Thanks for Your Input and Time!

Looking Forward to Our Next Joint Meeting