



Cooperative Institute for Climate Studies (CICS)



Outline

- The Review
- The Review
- The Review
- Actions in Response to The Review
- Comments on the Review Process
- Data Assimilation Training Workshop
- Issues



CICS Science Review

Tuesday, November 29, 2005

University of Maryland Inn and Conference Center; Room 2101/3/5

- 8:00 a.m. Continental Breakfast Room 2101**
- 9:00 a.m. Welcome by Dean Halperin Room 2103/5**
- 9:15 a.m. Introduction of Review Team – Ingrid Guch
Purpose of the Review**
- 9:30 a.m. Overview of ESSIC and CICS – Tony Busalacchi**

CICS Science Review – Tony Busalacchi

- 10:00 a.m. Science Plan (Page 8)**
- 10:30 a.m. Break**
- 10:50 a.m. Short Briefings by CICS Scientists on Recent Work**
- 12:20 p.m. Lunch – Discussion**
- 1:30 p.m. Scientific Partnerships (Page 19)**
- 1:50 p.m. Technology Transfer (Page 67)**
- 2:10 p.m. Education and Outreach (Page 73)**
- 2:30 p.m. Open Discussion**
- 3:00 p.m. Break**
- 3:20 p.m. Reviewers caucus to discuss day's presentations**
- 5:30 p.m. Adjourn for the day**

What does it mean to be a Cooperative Institute?

- Cooperation
- Two-way information exchange
- Joint activities
- Bottom Line: Draw on the resources that the University of Maryland possesses via CICS, ESSIC, and AOS to support the goals and objectives of NOAA's mission

Meeting NOAA Mission Goals

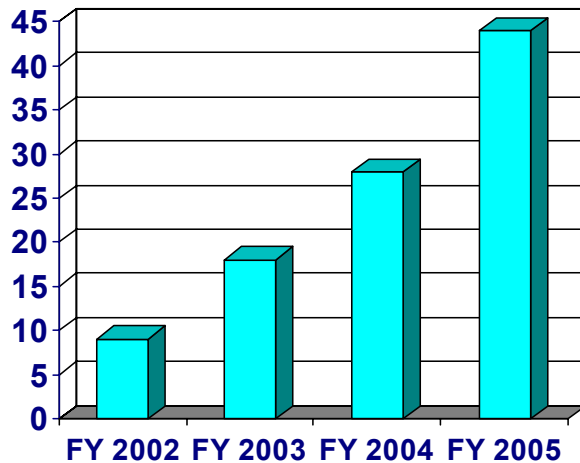
- Involvement in and with NOAA Weather & Water, Climate, and Ecosystem Goal Teams
- Outreach & Education
 - Lecturing ESSIC & METO courses
 - Presenting seminars
 - Interacting with undergraduates
- Development of Innovative Product Systems for Environmental Monitoring and Prediction
 - Integrated ecosystem of the Chesapeake Bay watershed and estuary

NOAA Related Activities

- **Research to Operations**
 - OLR, Precipitation
- **Product validation and analysis leading to user confidence and potential Climate Data Records**
 - Products: Precipitation, Water Vapor, E/P
- **Satellite Services**
 - NOAA Satellites: POES, GOES, NPOESS
 - Non-NOAA: EOS, TRMM, ADEOS-II

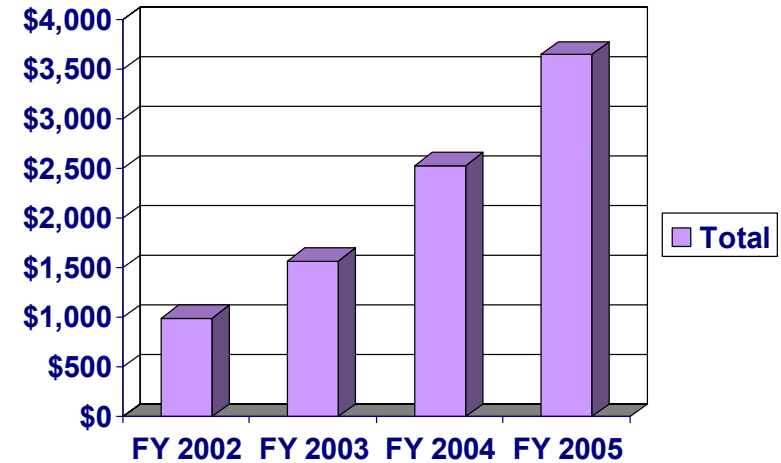


Growth over the Past 4 Years



Total

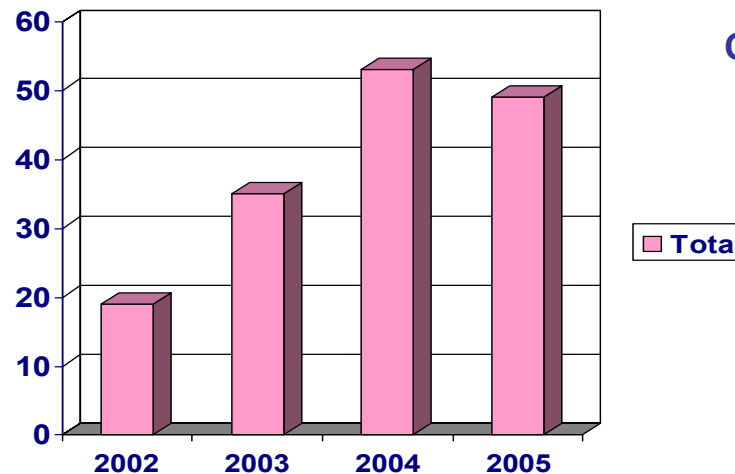
CICS PUBLICATIONS



Total

CICS FUNDING (in \$1000) (FY 2006 - \$4.5M+)

CICS TASKS (FY 2206 - 50+)



Total

Cooperative Institute for Climate Studies (CICS)

Future Directions for CICS

- What are our strengths?
 - Breadth
 - NASA-NOAA-UMCP triad
 - Intersection of climate observations and models, e.g., precipitation, radiation, data assimilation, reanalysis
- What weaknesses do we need to address?
 - Breadth/identity
 - Administrative support
- What opportunities should we pursue?
 - Collocation with NOAA Science Center
- What impediments do we face when working with NESDIS and NCEP?
 - Communication
 - Initiation of new themes within guidelines of CI continuation policies
- How well aligned are we with the NOAA 5-year plan?
 - Very well



Science Review (November 2005)

- **Recommended continuation of CICS – praised working environment, collaborative research, and the impending collocation with STAR and NCEP**
 - **CICS is a unique research partner for NOAA and contributes to the NOAA mission in many ways. It has grown dramatically in the past 5 years, and its future looks bright due to the upcoming move and the expansion of capabilities**
 - **Administrative Review comments similar**
 - **Issues:**
 - The Director and Deputy Director of CICS hold the same position in ESSIC. While this ensures good communication, it may lead to an excessive workload and could cause some lack of specific identity for the Institute
 - The recent rapid growth of CICS, and the substantial likelihood of further growth given the moves, must be viewed with caution particularly with respect to infrastructure
 - The level of base support for CICS is of concern, especially given the likely future growth. There are indications that the present level of support is only minimally adequate.
 - Administrative Review noted some opportunities for improved fiscal management (see following slide)
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NESDIS CI Directors' Retreat - June 20-21, 2006



Administrative Review (December 2005) Positive Findings

- General satisfaction with our performance
- Communication between CICS and ESSIC is exceedingly strong, since the Director and Deputy Director hold identical positions in both organizations, and the business and administrative staff are identical.
- Since there is a very close relationship among the NESDIS program staff and the CICS management and support staff, communication is generally open and direct.
- Staff members are well trained and highly motivated.
- CICS may want to review its administrative requirements, available resources and consider requesting additional support from NOAA and the University. The level of support is a concern to the reviewers and the growth of CICS is likely to be greater than anticipated after the NOAA NESDIS, ORA/STAR is co-located on the UMD campus.
 - **Assistant Director position advertised, interviews underway**
 - **Provided sufficient resources, other changes under consideration**
- CICS operations is efficiently run and highly effective. There were suggestions of burn-out by some staff due to the intense nature of the research coupled with the many demands of administration.
- The partnership between NOAA and UMD as manifested in CICS is a highly successful operation of which the CICS staff should be proud. Both parties need to review the ~~current state of affairs, however, with an eye toward future growth and progress to~~ develop new and improved ways to sustain and accelerate CICS position in satellite research.



NESDIS CI Directors' Retreat - June 20-21, 2006



Administrative Review (December 2005) Issues

- Spreadsheet summarizing funds and expenses for each project is somewhat confusing and difficult for CICS scientists to utilize. In terms of utility and functionality for the researcher, there seemed to be a lot of extraneous information and the form did not appear well organized.
 - ❖ Developed a more useful spreadsheet – to be presented later this week.
 - CICS staff need to better familiarize themselves with Grants.gov as more and more agencies are moving to this central interface for announcing and applying for funding opportunities.
 - ❖ On-site Training Completed; All FY 2006 proposals were done through Grants.gov
 - Review the MOU and revisit balancing the NWS presence with NESDIS and other NOAA Line Offices as applicable on the CICS Council and future Administrative Reviews of CICS. If NWS is too heavily represented, funding for other opportunities, particularly from NESDIS or OAR might be overlooked.
 - ❖ Deferred pending move to Research Park and co-location with NOAA
 - Review on-site facilities for clear labeling and distinction between NOAA and CICS staff. Employee's name and affiliation posted on each cubicle is our recommendation.
 - ❖ Underway
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CICS Review Lessons Learned (guidance for OSU)

What We Would Not Change

- Document Format
- Information Included
- Review Format

What We Would Change

- Start sooner
 - UMD representative from the contracts and grants office should have been present most of the time
 - Too much overlap of review members and CI Directors
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Course and Workshop on Application of Remote Sensing to Data Assimilation

- Train advanced students and postdocs on the use of remotely sensed data in data assimilation,
- Builds upon the experience at the Department of Atmospheric and Oceanic Science (AOSC), UMD, where several relevant courses are being taught
- Help satisfy the need for trained scientists in this area
- Spring of 2007: a course that provides background on data assimilation and in depth study of the problems of observation operators that are based on radiative transfer and are needed to assimilate remotely sensed data. A “dry run” for the intensive summer workshop of 2007.
- Summer of 2007: 4 week Workshop on Advanced Data Assimilation of Remotely Sensed Observations devoted to graduate students and postdocs.

- Examples of possible topics to be emphasized include:
 - AIRS/IASI
 - AMSU
 - Ozone
 - Construction of Jacobians and adjoints of observation operators
 - Lidar winds
 - Scatterometer winds
 - Radar
 - Altimeters
 - Estimation of precipitation with different instruments
 - Training of neural networks for observation operators
 - Ocean color instruments
- Guest lecturers will be invited from the JCSDA, NESDIS, NCEP, NASA, ESA, ECMWF, UMD and the NOAA/NESDIS Cooperative Institutes.
- A steering committee to guide the development and implementation of the proposed syllabus this year and in subsequent years to be formed with representatives from NESDIS CI's and JCSDA.

Issues (from 05 Meeting)

- CICS 5-Year Review and CI Policy
 - Status ?
- CICS Reporting – Change to once / year
- Consolidate funding actions across Line Offices to facilitate grant submission
- Kathy LeFevre retiring end of year – training of replacement(s) to avoid future problems
- Engagement with other NOAA (OAR) CIs

Issues (from 05 Meeting)

- How can we stimulate more cross - institute collaborations?
 - Allow short-term visits to CI's to stimulate collaborations, e.g. present a seminar, meet with scientists to discuss proposal strategy, write proposals, etc.
 - Permit internships and sabbaticals for students and CI scientists to work at another CI on a joint research project
- Staffing at SCSB – down to critical mass; require more to enhance and create new linkages in advance of new building
 - Branch Head replacement
 - New FTEs: land surface processes person, phys ocn, etc
 - Temporary assignments at SCSB / CICS (?)

Issues and Future Directions

- New emerging themes, others?
- Depth “versus” breadth
- New NOAA Science Center, are we poised to be “good neighbors”?
- New CI Policy, CICS termination in 6/09
- Administrative/program support, are we prepared for the future?

Issues for this CI Director's Meeting

- Grants Management
- Grants Management
- Grants Management

