



Hunt Institute for Botanical Documentation
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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
MISSISSIPPI TEST FACILITY
BAY ST. LOUIS, MISSISSIPPI 39520

REPLY TO
ATTN OF: MT-DIR

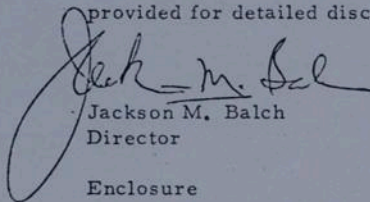
June 12, 1972

TO Addressees

FROM MT-DIR/Director, Mississippi Test Facility

SUBJECT Invitation to Symposium by the Gulf Universities
Research Consortium

The Gulf Universities Research Consortium will present a symposium on "Information for Resources Management" on Friday, June 16, 1972, in Conference Room A-101, Building 1100, at the Mississippi Test Facility. The presentation will be in accordance with the enclosed agenda and includes a summary of the tasks accomplished under Contract NAS8-26897. Associated with the presentation, an opportunity will be provided for detailed discussions for those interested.



Jackson M. Balch
Director

Enclosure

Addressees:

DEP-M/R. W. Cook
DEP-M/J. N. Foster
S&E-DIR/H. K. Weidner
S&E-DIR/G. McDonough
AD-S/G. C. Bucher
S&E-COMP-DIR/H. Hoelzer
ML&CO/P. T. Bankston
NDBC/J. W. Winchester
NMFS/W. H. Stevenson
NOIC/O. Cason
EPA/H. Tai
USGS-WRD/S. P. Sauer
USGS-EROS/G. W. North

GULF UNIVERSITIES RESEARCH CONSORTIUM

INFORMATION FOR RESOURCES MANAGEMENT

A presentation of Solutions to Practical Problems

DATE: June 16, 1972
TIME: 09:45 - 12:00 hrs.
13:00 - 15:00 hrs.
PLACE: Mississippi Test Facility
Building 1100
Conference Room No.

MORNING SESSION

The Components of the Information System

09:45 - 10:00 AM	Introduction	Dr. James M. Sharp President GURC
10:00 - 10:20 AM	Legal and Social Information Management System	Professor D. O'Connor Univ. of Miami
10:20 - 10:40 AM	Models of the Economy/Manage- ment Models	Dr. E. Leigh Secret Texas Christian Univ.
10:40 - 11:00 AM	Biological Information Manage- ment System	Dr. R. Menzies Florida State Univ.
11:00 - 11:20 AM	Chemical Information Manage- ment System	Dr. C. Oppenheimer Univ. of Texas at Austin
11:20 - 11:40 AM	Atmospheric and Oceanographic Information Management System	Dr. Claes Rooth Univ. of Miami
11:40 - 12:00 PM	Geological Information Management System	Dr. E. Herrin Southern Methodist Univ.

AFTERNOON SESSION

SYSTEMS DEVELOPMENT

13:00 - 13:20	The Information Triangle.	Dr. D. Rogers Univ. of Colorado
13:20 - 13:40	The Control System ENVIR	Mr. Henry Fleming Univ. of Texas Marine Sciences Lab.
13:40 - 14:00	The Bio Subsystems	Dr. S. G. Appan Florida State Univ.
14:00 - 14:20	Four Dimensional Surface Fitting	Mr. L. M. Herrera-Cantillo University of Miami
14:20 - 14:40	Remote Terminal Application	Dr. Wm. Brogden Univ. of Texas Marine Sciences Lab.
14:40 - 15:00	The Living Law	Mr. B. Lessinger Univ. of Miami
15:00	Closing Remarks	Dr. David Rogers

G U
R C

Gulf Universities Research Consortium

GURC Field Office • NASA/Mississippi Test Facility
Bay St. Louis, Mississippi 39520 • (601) 688-3760

MEMORANDUM

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JOHN W. WINCHESTER
Florida State University

TO: Principal Investigators and Staff
FROM: Dr. David J. Rogers
SUBJECT: Principal Investigators Meeting

June 14, 1972

All Principal Investigators and Staff are requested to attend a meeting at 09:00 hours in Conference Room B-300.

The topics of discussion and interaction are as follows:

1. Review of status of contract GURC/MTF.
2. Review of Contract Development appropriate to Contract NAS8-26897.

"Development of New Methodologies and Advance in the State of the Art in Information Management."

3. Review of existing contract activity.

"A Compilation and Evaluation of Environmental Impact Related to Saturn/Apollo Test Firings."

Final Report due July 15, 1972.

4. Discussion of presentation outline.

June 15, 1972

09:00 hours - Conference Room B-300. All P.I.'s and Staff.

Topics for Discussion:

1. Review of MTF continuation situation by Dr. Sharp.
2. The Work Statement likely to apply to Contract Renewal.
3. The Development Plan.
4. Final Preparation and Review of Presentation to be given in:

Conference Room A-101
Friday, June 16, 1972
9:45 AM - 12:00 PM
1:00 PM - 3:00 PM

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1:00 PM - 3:00 PM

objectives

The general purpose for us all -

1. Maintenance of a healthy economy - jobs in a matrix of a healthy ~~economy~~ environment
2. The requirements for problem-solving knowledge require inputs from all of us -
3. But our different inputs must be brought together for problem-solving and the INFORM system became the set of tools to put it all together -
4. The Triangle of INFORM and relations of the GARC teams to it -
5. Here we present the test cases of our systems -

GULF UNIVERSITIES RESEARCH CONSORTIUM

A PRESENTATION

"INFORMATION FOR RESOURCES MANAGEMENT"

DATE: June 16, 1972
TIME: 9:45 to 12:30 PM
1:30 to 4:00 PM
Conference Room A-101

*Applicability
in U.S.
Museums of several types
Genetic,
Archaeologic -
Environmental*

MORNING SESSION

- | | | |
|-------|--|-------------------------------------|
| 09:45 | Introduction - Purpose and Procedures | Dr. Jas. M. Sharp |
| 09:50 | The Environmental Megasystem Concept
The Environmental Information Triangle
The Systems Development - INFORM | Mr. Ian A. Miller |
| 10:00 | The Characteristics and Special Capabilities
of the MTF/GURC Information Management
System | Mr. Henry S. Fleming |
| | a) From a Computer Standpoint
b) From a User Standpoint | |
| 10:20 | Discussion - Questions from the Floor | Dr. Jas. M. Sharp |
| 10:30 | Coffee Break | |
| 10:40 | Environmental Systems Demonstrations | Dr. D. Rogers
Dr. C. Oppenheimer |
| 10:50 | (a) Dr. Wm. Brogden: Application: Galveston Bay Remote Terminals. | |
| 11:05 | (b) Dr. E. Herrin: Geology - Subsidence | |
| 11:15 | (c) Dr. C. Rooth: Environmental Physical Dynamics | |
| 11:30 | (d) Mr. Barry Lessinger: Legal and Social Information Systems for
Decision Makers (The Living Law). | |
| 11:40 | (e) Dr. R. Menzies: Integrated Information System Approach to
Biology | |
| | Dr. S. Appan: Bio-Energetics Model Simulation | |
| 12:10 | Application to MTF/IRA Implementation Plan | Dr. Jas. M. Sharp |
| 12:20 | Lunch | |

AFTERNOON SESSION:

13:30 Review of Morning Session Mr. Jackson M. Balch, Director

14:00 GURC Staff Available for Individual Technical Discussion

Dr. David Rogers
Henry Fleming
S. Appan
L. Cantilo
I. A. Miller
W. Brogden
W. Tucker
E. Graham
B. Lessinger

16:00 Session Closes.

ENVIR CAPABILITIES

- A. From computer-function standpoint.
 - 1. An information retrieval builder--written in FORTRAN IV.
 - 2. Operates with about 32K, 36 bit words.
 - 3. Main program functions for typical information retrieval needs.
 - 4. Main program drives a number of important subroutines, using command "generate" and others as necessary.
 - a. Plotting and contouring packages
 - b. Merge data banks
 - c. Decimal points
 - d. Statistical packages
 - e. Conversion of archive data from any tape to ENVIR format.
 - 5. Free-field input, therefore, complete alphanumeric capability.
 - 6. Complete addressability of bits.
 - 7. Complete Boolean capability.
 - 8. Calculated retrieval--no linear searching.

- B. From users' point of view
 - 1. Use of natural language
 - 2. No requirement for predetermined thesaurus of terms.
 - 3. Complete freedom of data formatting, updating, correcting, modifying data.
 - 4. Unlimited capacity of the system--no restrictions on size of banks.
 - 5. Querying system completely flexible, allowing any type of question.
 - 6. Rapidity of response to queries.
 - 7. Use ENVIR as an "executive" system for data at all levels of need.
 - 8. Output can take several different forms--including plots and contours.

PUBLICATIONS OF H. S. FLEMING AND S. G. APPAN, REPORTING THE WORK CARRIED OUT UNDER THE CONTRACT WITH NASA, CONTRACT NO. NAS8-26897, DURING THE PERIOD JUNE 15, 1971 TO APRIL 15, 1972, AT THE GURC ENVIRONMENTAL INFORMATION MANAGEMENT CENTER, NASA MISSISSIPPI TEST FACILITY, BAY ST. LOUIS, MISSISSIPPI

SOFTWARE DOCUMENTATION SERIES:

- Fleming, H. S. & S. G. Appan, 1971a. Program Biological Species Diversity. Software documentation series No. 1. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Miss.
- Fleming, H. S. & S. G. Appan, 1971b. Program CHARANAL (CHARacter ANALysis). Software Documentation Series No. 2. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Fleming, H. S. & S. G. Appan, 1972a. Program ENVIR (ENVIRONMENTAL INFORMATION and Retrieval). Software documentation series No. 3. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Fleming, H. S. & S. G. Appan, 1972b. Program ENVIR Initial Load. Software documentation series No. 4. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Fleming, H. S. & S. G. Appan, 1972c. Program ENVIR BCD Update. Software documentation series No. 5. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Fleming, H. S. & S. G. Appan, 1972d. Program Similarity Graph Clustering. Software documentation series No. 6. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Fleming, H. S. & S. G. Appan, 1972e. Cluster Analysis Program Using Graph Theory. Software documentation series No. 7. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Fleming, H. S., L. Herrera-Cantilo, S. G. Appan & E. D. Graham, (Manuscript). Program ENVIR plot. Software documentation series No. 8. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Fleming, H. A., S. G. Appan & E. D. Graham, (Manuscript). Program Morisita-Ono faunal affinity index. Software documentation series No. 9. GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.

REPORTS:

- Appan, S. G., W. B. Brogden, H. S. Fleming, R. Y. George, R. J. Menzies, and C. H. Oppenheimer, 1971c. Work Plan Definition of Biology and Chemistry Teams. In J. M. Sharp & B. E. Sabels (eds.) Task 1 Report of GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Appan, S. G., W. B. Brogden, H. S. Fleming, R. Y. George, R. J. Menzies, and C. H. Oppenheimer, 1971d. Pilot Programs of Biology and Chemistry Teams for Method Testing, Analysis and Evaluation of the ENVIR System. In J. M. Sharp & B. E. Sabels (eds.) Task 2 Report of GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Appan, S. G., W. B. Brogden, H. S. Fleming, R. Y. George, R. J. Menzies, and C. H. Oppenheimer, 1971e. Report of Biology and Chemistry Teams. In J. M. Sharp & B. E. Sabels (eds.) Task 3 Report of GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Appan, S. G., W. B. Brogden, H. S. Fleming, R. Y. George, R. J. Menzies, and C. H. Oppenheimer, 1972. Demonstration of the Application of the ENVIR System in Environmental Information Management. In J. M. Sharp & D. J. Rogers (eds.) Task 4 Report of GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.
- Appan, S. G., W. B. Brogden, H. S. Fleming, R. Y. George, R. J. Menzies and C. H. Oppenheimer, 1972. ENVIR - An Executive Command Control System for Environmental Information Management. In J. M. Sharp & D. J. Rogers (eds.) Task 6 Final Report of GURC Environmental Information Management Center, NASA/MTF, Bay St. Louis, Mississippi.

PAPERS:

- Fleming, H. S., R. J. Menzies, S. G. Appan, and R. Y. George - in press. Deep-Sea Environmental Information Management: Transformation of Remotely Sensed Benthic Ecologic Data into Management Information Using the ENVIR System. Chemosphere.
- Fleming, H. S. et al. Manuscript. A Modular Software System to Support Socio-environmental Modeling and Management.
- Menzies, R. J. et al. Manuscript. ENVIR-assisted Analysis of the Species of *Storthyngura*.

PAPERS (BIOLOGICAL):

Rogers, D. J. & H. S. Fleming - in press. A Computer-aided Classification of *Manihot Esculenta* Cultivars. Econ. Bot.

Rogers, D. J. & S. G. Appan - in press. Monograph of Genus Manihot. Neotripa monographic series.