The Second Annual Symposium on Computer Applications in Medical Care is designed to inform physicians, computer scientists, biomedical and clinical engineers, medical educators, health care administrators, and other health care professionals about advancements in the rapidly expanding field of medical computing.

CREDIT:
As organizations accredited for continuing medical education, the Departments of Continuing Medical Education of The Georgetown University Medical Center and the Medical College of Virginia/VCU certify that this continuing medical education activity meets the criteria for twenty-eight hours in Category 1 towards the Physician’s Recognition Award of the American Medical Association, provided the Symposium is used and completed as designed. Virginia Commonwealth University has approved this course for 2.8 Continuing Education Units (CEUs).

TUTORIAL I: “INTRODUCTION TO AND REVIEW OF RECENT DEVELOPMENTS OF COMPUTER TECHNOLOGY,” John H. Carson, Ph.D., Computer Scientist with RGL Associates

TUTORIAL II: “SOFTWARE CONCEPTS FOR BIOMEDICAL COMPUTING,” Robert L. Lake, Director, Computer Applications Training Program, School of Medicine, Case Western Reserve University

The tutorials will provide background and review of recent developments in computer technology such as mini- and microcomputers, operating systems, programming languages, applications areas, and various software concepts to assist participants in the technical sessions in the Symposium.

EXHIBITS: Demonstrations and exhibitions will illustrate computer systems and commercial products discussed during the Symposium. Interested exhibitors should contact the Exhibition Chairman.

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PROGRAM
SUNDAY, November 5, 1978
12:00 Noon - 6:00 p.m. REGISTRATION
1:00 p.m. - 6:00 p.m. TUTORIAL I
1:00 p.m. - 4:00 p.m. TUTORIAL II

MONDAY, November 6, 1978
7:30 a.m. - 6:00 p.m. REGISTRATION
8:30 a.m. - 9:15 a.m. WELCOME AND INTRODUCTORY REMARKS
9:15 a.m. - 10:00 a.m. KEYNOTE ADDRESS: “THE NEED FOR AUTOMATION IN HEALTH AND MEDICAL CARE,” Cesar A. Caceres, M.D., Editor, Clinical Engineering (Association for the Advancement of Medical Instrumentation), President, Clinical Systems Associates*

10:00 a.m. - 10:30 a.m. COFFEE BREAK

10:30 a.m. - 12:30 p.m. MEDICAL IMAGING
Chairman: Dr. H.K. Huang, Assistant Professor, Department of Physiology and Biophysics, Department of Anatomy, Georgetown University Medical School

“AN APPLICATION OF PATTERN RECOGNITION TO EPITHELIAL TISSUES,” Judith M.S. Prewitt, Ph.D., and S.C.A. Wu, Ph.D., DCRT, NIH, DHEW*

“PICTORIAL PATTERN RECOGNITION APPLIED TO MORPHOMETRIC CYTOLOGY,” E.A. Parrish, Ph.D., J.H. Aylor, and C.W.K. Grinnon, Computer and Control Lab., School of Engineering and Applied Science, University of Virginia

“MEDICAL APPLICATIONS OF TEXAC: A SPECIAL PURPOSE PICTURE PROCESSING TEXTURE ANALYSIS COMPUTER,” Ruth E. Dayhoff, M.D., Robert S. Ledley, D.D.S., Menfai Shiu, and Chan M. Park, Ph.D., Dept. of Physiology and Biophysics, Georgetown University Medical Center

“A MICROPROCESSOR-BASED INTERACTIVE RADIOGRAPHIC IMAGE DISPLAY,” W.D. McFarland, Ph.D., Dept. of Radiology, Health Services Research Center/Health Care Technology, University of Missouri-Columbia
"A NEW DATA PROCESSING SYSTEM FOR GATED CARDIAC STUDIES," Nathaniel Alpert, Ph.D., Physics Research, C.A. Burnham, MGH, Harvard University Medical School

"A NEW CLASSIFIER CONCEPT FOR DETECTING ABNORMAL INFRARED IMAGES," Raj K. Aggarwal, Ph.D., Systems and Research Center, Aerospace and Defense Group, Honeywell, Inc.

"GROSS AND SEGMENTAL MOTION ANALYSIS IN DYNAMIC CARDIAC IMAGERY," J. Tsotsos, H.D. Covey, J. Mylopoulos, Ph.D., E.D. Wigle, M.D., Toronto General Hospital, Dept. of Computer Science, Univ. of Toronto

12:30 p.m.-1:30 p.m. LUNCH

1:30 p.m.-3:30 p.m. COMPUTERS IN NUCLEAR MEDICINE
Chairman: Dr. John C. Harbert, Associate Professor, Dept. of Radiology and Medicine, Director, Div. of Nuclear Medicine, Georgetown Univ. Medical Center

"AN OPTIMUM COMPUTER SYSTEM FOR CLINICAL NUCLEAR CARDIOLOGY," Stephen L. Bacharach, Ph.D., Michael V. Green, Jeffrey S. Borer, Gerald S. Johnston, NIH, DHHEW

"QUANTITATIVE PARAMETERS OF REGIONAL MYOCARDIAL FUNCTIONS," Richard F. Keipfer, M.D., National Naval Medical Center, Bethesda

"IMPACT OF COMPUTERS ON NUCLEAR MEDICINE," Philip O. Alderson, M.D., Dept. of Radiology, The Johns Hopkins Univ. Medical Institutions


3:30 p.m.-4:00 p.m. COFFEE BREAK

4:00 p.m.-5:30 p.m. COMPUTERS IN RADIATION THERAPY
Chairman: Dr. James A. Deye, Associate Professor, Associate Director of Radiation Physics, Dept. of Radiology, GWU Medical Center

"COMPUTERS IN RADIATION ONCOLOGY: THE THIRD DECADE," Edward S. Sternick, Ph.D., Dept. of Radiology, Tufts New England Medical Center

"COMPUTER-CONTROLLED RADIATION THERAPY," Bengt G. Bjergaard, Ph.D., Dept. of Radiation Therapy, Harvard Univ. Medical Center


8:00 p.m.-10 p.m. PANEL DISCUSSION GROUPS I, II, III
I. ECONOMICS OF COMPUTERS IN PRIVATE (SOLO AND GROUP) PRACTICE
II. THE VETERANS ADMINISTRATION MEDICAL INFORMATION SYSTEM
III. AUTOMATED TECHNIQUES FOR HEALTH CARE

TUESDAY, NOVEMBER 7, 1978
7:30 a.m.-6:00 p.m. REGISTRATION
8:00 a.m.-10:00 a.m. COMPUTERS IN PSYCHIATRY AND CLINICAL PSYCHOLOGY
Chairman: Dr. James H. Johnson, Associate Professor, Vice Chairman, Dept. of Psychiatry and Behavioral Sciences, Eastern Va. Medical School

"OVERVIEW OF COMPUTERS IN PSYCHIATRY AND CLINICAL PSYCHOLOGY," James H. Johnson, Ph.D.*

"MENTAL HEALTH INFORMATION SYSTEMS: SOME NATIONAL TRENDS," James H. Hedlund, Ph.D., Univ. of Missouri-Columbia (Missouri Institute of Psychiatry)*

"COMPUTER TECHNOLOGY IN COMMUNITY MENTAL HEALTH CENTERS: CURRENT STATUS AND FUTURE PROSPECTS," Ronald A. Giannetti, Ph.D., James H. Johnson, Ph.D., Thomas A. Williams, M.D., Dept. of Psychiatry, College of Medicine, Univ. of Utah*

"MICRO-COMPUTERS IN BIOFEEDBACK," Michael James, VP, Cyborg Corp., Boston


"COMPUTER INTERVIEW PROBLEM ASSESSMENT OF PSYCHIATRIC PATIENTS," Hugh V. Angle, Everett H. Elinawood, Judith Carroll, Duke Univ. Medical Center

"A SURVEY OF THE USERS OF A WORKING STATE MENTAL HEALTH INFORMATION SYSTEM: IMPLICATIONS FOR THE DEVELOPMENT OF IMPROVED SYSTEMS," David J. Knesper, M.D., Cecil W. Murray, and Gardner C. Quarton, M.D., Mental Health Research Institute, Univ. of Mich.

10:00 a.m.-10:30 a.m. COFFEE BREAK

10:30 a.m.-12:30 p.m. COMPUTERS IN MENTAL HEALTH CARE
Chairman: Dr. James L. Hedlund, Professor of Psychiatry (Medical Psychology), Dept. of Psychiatry, Health Services Research Center, University of Missouri-Columbia (Missouri Institute of Psychiatry) (Co-Organizers: Cecil R. Wurster, Dr. Eugene M. Laska)

"COMPUTERS IN MENTAL HEALTH: A HISTORICAL OVERVIEW AND SUMMARY OF CURRENT STATUS," James L. Hedlund, Ph.D.*

"USING HIERARCHICAL COMPUTER NETWORKS AS AN ORGANIZATIONAL BRIDGE FOR DEVELOPING BETTER MENTAL HEALTH COORDINATION," Cecil W. Murray, David J. Knesper, M.D., and Gardner C. Quarton, M.D., Univ. of Michigan (Mental Health Research Institute)

"MANAGEMENT INFORMATION SYSTEMS: BRINGING THE M AND THE J TOGETHER," John John, Preston, Necotics Inc., Columbus and Dean Mayberry, Regional Mental Health/Mental Retardation Center, Waco, Texas

"AN AUTOMATED BEHAVIORAL REHABILITATION SYSTEM FOR LONG-TERM PATIENTS," Jeffrey L. Crawford, Ph.D., George Conklin, Donald McMahon, Salvatore Vitale, James Robinson, Joseph Gelber, DeTo Stefano, Information Sciences Division, Rockland Research Institute

"WHAT IS THE QUESTION FOR WHICH THE DATA IN A MENTAL HEALTH MANAGEMENT INFORMATION SYSTEMS IS THE ANSWER?" Gardner C. Quarton, M.D., David J. Knesper, M.D., Cecil W. Murray, and Margaret L. Clay, Univ. of Michigan

"MICROPROCESSOR TECHNOLOGY FOR PSYCHIATRISTS," Monte J. Meidman, M.D., Forest Hospital, Des Plaines, Illinois

12:30 p.m.-1:30 p.m. LUNCH

1:30 p.m.-3:30 p.m. COMPUTER-PATIENT DIALOG
Chairman: Dr. Warner V. Slack, Associate Professor of Medicine, Dept. of Medicine, Harvard Univ. Medical School, Div. of Computer Medicine, Beth Israel Hospital

"INTRODUCTION TO COMPUTER-PATIENT DIALOG," Warner V. Slack, M.D.*

"COMPUTER INTERVIEW – BEYOND DATA COLLECTION," John H. Greist, M.D., Margerie H. Klein, Ph.D., and Harold Erdman, Dept. of Psychiatry, Univ. of Wisconsin Medical School

A SELF-ADMINISTERED HEALTH HAZARD APPRAISAL," Lawrence J. VanCura, Dept. of Biomedical Computing, Univ. of Mass.

"PATIENT RESPONSES TO COMPUTER COUNSELING," Douglas Porter, Ed.D., Div. of Computer Medicine, Beth Israel Hospital, Dept. of Medicine, Harvard Univ. Medical School

"ADVANCES IN THE SCIENCE OF COMPUTER-BASED HISTORY TAKING AND PATIENT INTERROGATION," H.R. Oldfield, Jr., Medequp Corp., Rockville

"COMPETING MODELS FOR AI ANALYSIS OF CLIENT-THERAPIST TRANSACTIONS," Sally Yeates Sedelow, Ph.D., Depts. of Comp. Sci. and of Linguistics, and Walter A. Sedelow, Ph.D., Depts. of Comp. Sci. and of Sociology, Univ. of Kansas.

3:30 p.m.-4:00 p.m. COFFEE BREAK

4:00 p.m.-5:30 p.m. THE COMPUTERIZED USE OF MEDICAL KNOWLEDGE
Chairman: Dr. William S. Yamamoto, Professor and Chairman, Dept of Clinical Engineering, GWU Medical Center

"THE COMPUTERIZED USE OF MEDICAL KNOWLEDGE," William S. Yamamoto, M.D.*

"MODELLING OF INTRACRANIAL PRESSURE DYNAMICS," Richard L. Griffith III, D.Engr., M.D. Humpert G. Sullivan, M.D., and J. Douglas Miller, M.D., Ph.D., Div of Neurological Surgery, Medical College of Virginia/VCU

"A PRODUCTION RULE SYSTEM FOR NEUROLOGICAL LOCALIZATION," James A. Reggia, M.D., Dept. of Neurology, Univ. of Maryland Medical School

"A HIERARCHICAL REPRESENTATION OF TREATMENT PROTOCOLS," M. Ben-Bassat, Ph.D., R.C. Carlson, V. Furi, and M.H. Wel, Univ. of So. Cal. School of Medicine and Center for the Critically Ill, Hollywood Presbyterian Medical Center, Los Angeles

8:00 p.m.-12:00 a.m. BANQUET

"IMPACT OF MEDICAL INFORMATICS ON MEDICAL EDUCATION," Lawrence L. Weed, M.D., Professor, PROMIS Lab, Dept. of Medicine, Medical College, University of Vermont

WEDNESDAY, NOVEMBER 8, 1978
7:30 a.m.-6:00 p.m. REGISTRATION
8:00 a.m.-10:00 a.m. MEDICAL DATA BASES
Chairman: Dr. S.K. Chang, Associate Professor, Dept. of Information Engineering, Director, Knowledge Systems Laboratory, University of Illinois at Chicago Circle

"IMPLEMENTATION OF AN AMBULATORY CARE INFORMATION SYSTEM USING A NETWORK OF COMMUNITY HEALTH CENTERS," Lynn A. Evans, Ph.D., Dept. of Community Medicine, Baylor College of Medicine, and Jerry Wade, Management Systems, Harris County Hospital District, Houston
"AN INTEGRATED DATA BASE SYSTEM FOR MANAGING MEDICAL INFORMATION: A TUMOR REGISTRY APPLICATION," Robert M. Cabral, Ph.D., and Wu-Haung Cheng, Survey Research Lab, Univ. of Ill. at Chicago Circle

"INFERRING KNOWLEDGE FROM CLINICAL DATA BANKS: UTILIZING TECHNIQUES FROM ARTIFICIAL INTELLIGENCE," Robert L. Blum, M.D., and Giovanni Wiederhold, Ph.D., Dept. of Computer Science, Stanford Univ.

"APPLICATION OF AN INEXACT PATTERN MATCH ALGORITHM TO SEARCHING MEDICAL RECORDS," Robert A. Harbort, Jr., Crawford Long Hospital, Atlanta

"EXPERIENCE ON A SURGICAL PATHOLOGY DATA BASE AND A LEXICON COMPILED FROM LOCALLY DERIVED MEDICAL ENGLISH," Ruth L. Wong, M.D., Timothy Hain, M.D., and Robert Platt, J.D., Pathology Dept., Univ. of Ill. at the Medical Center

"CLINICAL CARE AND RESEARCH USING MEDUSA, A MEDICALLY ORIENTED DATA BASE MANAGEMENT SYSTEM," Peter B. Miller and Robert M. Strong, Ph.D., School of Public Health, Harvard Univ.

10:00 a.m.-10:30 a.m. COFFEE BREAK

10:30 a.m.-12:00 Noon LANGUAGE PROCESSING REPRESENTATION
Chairman: Martin N. Epstein, DCRT, NIH, DHEW

"NATURAL LANGUAGE ACCESS TO A DATA BASE OF PATIENTS WITH MALIGNANT MELANOMA," Martin N. Epstein*

"DESIGN CONSIDERATIONS FOR A KNOWLEDGE BASE AND LANGUAGE INTERFACE TO A DRUG INFORMATION SYSTEM," Werner Schneider, Ph.D., Upsala University Data Center, Sweden*

"COMPUTERIZED LANGUAGE PROCESSING FOR MULTIPLE USE OF NARRATIVE DISCHARGE SUMMARIES," Naomi Sager, Ph.D., Lynnette Hirschman, N.Y. Univ., and Margaret Lyman, M.D., Dept. of Pediatrics, N.Y. Univ. Medical Center

"MEDIKAS--AN INTERACTIVE KNOWLEDGE ACQUISITION SYSTEM," A. Baskin, Ph.D., Allan H. Levey, M.D., Schools of Basic Med. Sci. and Clinical Medicine, Univ. of Ill-Urbana

12:00 Noon-1:00 p.m. LUNCH

1:00 p.m.-3:00 p.m. REPRESENTATION OF MEDICAL KNOWLEDGE
Chairman: Dr. William C. Mohler, Associate Director, DCRT, NIH, DHEW*

"INTRODUCTION TO REPRESENTATION OF MEDICAL KNOWLEDGE," William C. Mohler, M.D.*

"THE HEPATITIS KNOWLEDGE BASE PROTOTYPE," Lionel Bernstein, M.D., Ph.D., Elliot Siegel, Ph.D., William Ford, The National Library of Medicine, NIH, DHEW*


"KNOWLEDGE SECTORS FOR LOGICAL PROCESSING OF PATIENT DATA IN THE HELP SYSTEM," Homer R. Warner, M.D., Ph.D., Dept. of Medical Biophysics and Computing, College of Medicine, Univ. of Utah*

3:00 p.m.-3:30 p.m. COFFEE BREAK

3:30 p.m.-5:30 p.m. COMPUTER DIRECTED CLINICAL LABORATORY TESTING
Chairman: Dr. Martin Rubin, Professor of Biochemistry, Dept. of Biochemistry, Director, Div. of Clinical Chemistry, Georgetown Univ. Medical Center

"INTRODUCTION TO COMPUTER DIRECTED CLINICAL LABORATORY TESTING," Martin Rubin, M.D.*

"APPROPRIATE USES OF POPULATION AND INDIVIDUAL REFERENCE DATA IN PATIENT CARE," Eugene K. Harris, Ph.D., Lab. of Applied Studies, DCRT, NIH, DHEW*

"STRATEGIES FOR IMPROVING THE USE OF COMPUTERS IN THE CLINICAL LABORATORY," Ellis S. Benson, M.D., Dept. of Laboratory Medicine & Pathology, School of Medicine, Univ. of Minnesota*


8:00 p.m.-10:00 p.m. PANEL DISCUSSION GROUPS IV, V, VI
V. THE TRI-SERVICE MEDICAL INFORMATION SYSTEM (TRIMS) PROJECT
VI. COMPUTER APPLICATIONS IN THE INTENSIVE CARE

THURSDAY, NOVEMBER 9, 1978
7:30 a.m.-12:00 Noon REGISTRATION
8:30 a.m.-1:00 p.m. COMPUTERS IN OFFICE PATIENT CARE
Chairman: Dr. William C. Hammond, Associate Professor of Community and Family Medicine, Director, Division of Information Sciences, Duke University Medical Center

"COST JUSTIFICATION OF COMPUTERS FOR RESEARCH USE IN GENERAL PRACTICE," N.H. McAlister, H.D. Covvev, N.K. McAlister, Cardiovascular Unit, Toronto General Hospital

"MEDICAL RECORD COMMUNICATIONS) -- SYSTEM CONCEPT, DESIGN, AND EVALUATION," W.D. Mela, B.D. Heisler, H.M. Goldstein, Ph.D., Northeastern Univ. and P.H. Moffatt, M.D., J.J. Alpert, M.D., Dept. of Pediatrics, Boston City Hospital and Boston University School of Medicine

"DISTRIBUTED COMPUTER SYSTEMS IN SUPPORT OF COMPLEX GROUP PRACTICES," Bernard P. Weiss, Jr., Univ. of Maryland Baltimore County

"COMPUTERIZED PATIENT SCHEDULING IN A CLINIC," Lawrence L. Rose, Ohio State Univ. and M.H. Gotterler, Florida Int'l Univ.

COFFEE BREAK

"COSTAR -- A GENERALIZED INFORMATION SYSTEM FOR AMBULATORY MEDICAL CARE," G. Octo Barnett, M.D., Norma S. Justice, Michael E. Somand, M.D., J. Barclay Adams, M.D., and Jacqueline K. Greene, Laboratory of Computer Science, MGH, Harvard Medical School*

"MY GIRL SENDS OUT MY BILLS: DOCTORS AND COMPUTERS," Norman Ronis, M.D., Arlington, Virginia

"PHYSICAL EXAMINATION REPORTING SYSTEM," B.A. Rowley, Ph.D., J.M. Cameron, Ph.D., D.E. Anderson, Ph.D., Dept. of Biomedical Engineering and Computer Medicine, and T.A. Nicholas, M.D., R.L. Houge, M.D., J.L. Hutchinson, M.D., Dept. of Family Practice, Texas Tech University, School of Medicine, and V.H. Peralta, M.D., B. Johannsen, M.D., D. Walston, South Plains Health Providers, Inc., Plainview and Floydaya, Texas

*INVITED PAPERS
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POSTER SESSION ON MEDICAL INFORMATION SYSTEMS

Monday, November 6, 1978 through Thursday, November 9, 1978*

Chairwoman: Ruth E. Dayhoff, M.D., Department of Pathology, The George Washington University Medical Center, National Biomedical Research Foundation, Georgetown University Medical School

"PRIVACY AND SECURITY IN AN ONCOLOGY INFORMATION SYSTEM," B.I. Blum and R.E. Lenhard, Jr., Johns Hopkins Univ. Oncology Center

"THE USE OF MANAGEMENT INFORMATION SYSTEMS TO ENHANCE DATA COLLECTION PROCEDURES," Patricia Moore, Ph.D., Kenneth W. Clark, J. Philip Miller, G. Charles Oliver, Lewis J. Thomas, Jr., Biomedical Computer Laboratory and the Dept. of Medicine, Washington University School of Medicine

"AN INTERACTIVE PATIENT RECORD SYSTEM AND ITS TRANSFER FROM A MAINFRAME TO MICROCOMPUTERS," W.D. Hageman, M.D., and G.M. Hucko, Ph.D., Lab of Computer Science, Cornell University Medical College

"AN INTELLIGENT TERMINAL FOR ACCESS TO A MEDICAL DATA BASE," M.E. Womble, Ph.D., S.D. Wilson, M.D., H.N. Keiser, and M.L. Tworek, Clinical Sciences Div., Brooks Air Force Base

"A MEDICAL GENETICS DATA BASE MANAGEMENT SYSTEM," K.W. Kang, Ph.D., A.D. Merritt, M.D., P.M. Connelly, Ph.D., Dept. of Medical Genetics, and J.M. Gersting, Ph.D., and T. Rigo, Ph.D., Computer Science Group, Indiana University

"EXPERIENCE USING STANDARD SOFTWARE TO PROVIDE A COMPREHENSIVE INFORMATION PROCESSING SYSTEM FOR A LARGE AND COMPLEX CLINICAL STUDY," Joseph R. Brashear and John M. Long, Hyperlipidemia Program, University of Minnesota


"A REPORTING SYSTEM FOR NON-INVASIVE CARDIOVASCULAR INVESTIGATIONS," H.D. Covey, M.J. Sole, L. Schwartz, H. Rakowski, E.D. Wigle, Division of Cardiology, Toronto General Hospital

"LABORATORY REPORTS FOR THE PHYSICIAN," Samuel Raymond, M.D., Ph.D., Div. of Lab. Medicine, Dept. of Pathology, Hospital of the Univ. of Penn Medical School

"THE CLINICAL PATHOLOGY LABORATORY AND ITS RELATIONSHIP TO A HOSPITAL INFORMATION SYSTEM," Marion J. Ball, Computer Systems and Management, Temple School of Medicine

"OCCUPATIONAL HEALTH UNIT AUTOMATION," Carol B. Wilson, National Bureau of Standards

"ADAPTATION OF A COMPUTER-ASSISTED DIAGNOSIS PROGRAM FOR USE BY HOSPITAL CORPSMEN ABOARD NUCLEAR SUBMARINES," J.V. Henderson, M.D., G.M. Moeller, Ph.D., B.M. Ryack, Ph.D., Naval Submarine Medical Research Lab., Groton, Conn., and G.M. Shumailk, M.D., Naval Medical Center, San Diego

*Exact date and time available at registration desk.

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