

Vita Sheet
February 1996

Dell K. Allen, P.E., Cfg. Mfg.

WORK EXPERIENCE

- 1995 - present, Research Engineer, Utah State University Research Foundation, Logan, UT, engaged in machine tool development for small business.
- 1994 - present, Adjunct Professor, Mechanical & Aerospace Engineering department Utah State University, Logan, UT, teaching on-campus and extension courses in CNC part programming, tool design, total quality management, integrated manufacturing systems; works closely with local companies on
- 1993 - present, Director of Manufacturing, Digital Scientific, Salt Lake City, UT, responsible for procurement and installation of concurrent product/production engineering system; rapid prototyping; production process design and implementation; working with vendors for special tooling; subcontracting for parts-on-demand production
- 1960 - 1995, Instructor, assistant professor, associate professor, and professor, Manufacturing Engineering & Technology, Brigham Young University, Provo, UT
- 1976 - 1995, Director, CAM Software Research Center, Brigham Young University, Provo, UT. Principal investigator on software development and licensing; Principal investigator for various government and industry research contracts defined under Recent Contracts/Grants, below.
- 1976 - Research engineer, Boeing Commercial Airplane Company, Seattle WA, responsible for installation of DCLASS information system for group technology part classification and generative process planning.
- 1975 - Mechanical engineer, Lawrence Livermore Laboratories, Livermore CA., responsible for precision machining evaluation of beryllium reflectors; group technology assessment; development of materials taxonomy.
- 1956 - 1959, Tool designer, tool engineer, EIMCO Corporation, Salt Lake City, UT. Responsible for design of fixtures and special tooling; n/c part programming and tooling for 3-axis numerical control machines.

EDUCATIONAL BACKGROUND

- 1954 - B.S. Tool Engineering, Utah State University,
- 1955 - 1956, Graduate course work, metallurgical engineering, Illinois Institute of Technology, Chicago
- 1967 - M.S. Industrial Education, Brigham Young University 1967
- 1973 - EdD, Industrial Education, with emphasis on manufacturing engineering, Utah State University.

RESEARCH INTERESTS

Integrated manufacturing, CIM architecture & database, data dictionary, group technology; process planning and estimating, logical, mathematical, and graphical, modeling and simulation; parts-on-demand system (PODS) and cellular production.

RECENT CONTRACTS/GRANTS

- SME, \$41,000, "Testbench for machine-tool slideway evaluation" (Current)
- Geneva Steel Company, \$74,000, Phase I, "Factory Simulation for Integrated Manufacturing"
- Textron-Lycoming Corporation, \$345,000, "CIM Factory Design System"
- State of Utah Department of Community and Economic Development, CIM Center of Excellence contract - \$88,000, "Design of Integrated Production Cells for Manufacturing Parts-On-Demand Systems (PODS) in Rural Utah Communities"
- State of Utah Office of Contract Administration, \$62,500, "Utah Business Profile for 1000 Utah Manufacturing Firms" (Published in electronic retrieval form).

RESEARCH DESCRIPTION

Research has been directed toward completing the theoretical foundation for integrated manufacturing including the CIM framework architecture, system design, development of the prototype system testing in the small environment, and scaling up the CIM system for use in full-size parts-on-demand manufacturing cooperatives. Work is currently on-going with the Fillmore Industrial Cooperative (Fillmore, UT) for demonstrating the PODS concept with emphasis on rapid-prototyping systems.

Key enabling technology for the above work has involved development of the new HyperCLASS group technology system, and innovative work in parametric design, material selection, process selection, cost estimating, process planning, and in devising general concepts of simultaneous engineering. The generic CIM architecture model has been designed to be readily customized by simple changes to the shell user interface program with its menus and sub-menus, and modification of the standard screens and data dictionary.

HONORS/AWARDS/PATENTS

Member, National Academy of Engineering; Karl G. Maser Research and Creative Arts Award, BYU 1988; Governor's medal for Science and Technology, Utah 1987; elected Fellow Member, Society of Manufacturing Engineers, Detroit, 1986; Distinguished Alumnus Award, Mechanical Engineering Department, Utah State University, Logan, 1985; Distinguished College Faculty Member, College of Engineering and Technology, Brigham Young University, 1980;

Patents 4,589,174 (polar-coordinate milling machine), 4,573,822 (leaf-lifter), and 4,318,184 (information system).

PUBLICATIONS/PRESENTATIONS

- D.K. Allen, "Classification of Machine-tool slideways," January 1995. Submitted for publication in International Journal of Machine Tool Design & Research.
- D.K. Allen, and Ralph Haycock, "Instrumented Testbed for Machine-tool Slide Evaluation," confidential USU internal memorandum, January 15, 1995.
- D.K. Allen, and Jeffrey J. Leavy, "Simultaneous Engineering in the CIM Environment," NCGA CAD/CAM '88, Boston, MA, 1988.
- D.K. Allen, Jeffrey J. Leavy, Anthony Berrett, "CIM Factory Design System," Project Final Report, Phase II, for Textron Lycoming, Stratford, CT 1988.
- D.K. Allen, Charlie S. Snead, Philip E. Whiteside, Bufford B. Wilson, Robert J. Frank, "Computer Integrated Manufacturing: Basic Architecture Models", IEEE videoconference, seminars via satellite, Indianapolis, IN 1987.
- D.K. Allen, "Material Databases and Computer Integrated Manufacturing," First Annual ASTM Symposium on Computerization and Networking of Material Property Databases, Philadelphia PA, 1987.
- D.K. Allen, "National Machine-Tool Database for Group Technology Applications," International Machine Tool Research Forum, Chicago, IL 1987.
- D.K. Allen, "Processing Alternatives for Cost Reduction," CIRP 37th General Assembly Round Table, Beograd, Yugoslavia, 1987.