

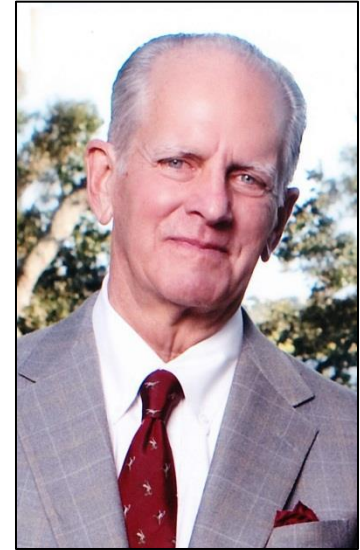
BAKER A. MITCHELL, JR.

Contact 910/655-3600 bamjr@RogerBacon.net

Degrees 1962 B. S. Electrical Engineering, Duke University, Durham, NC
1964 M. S. Electrical Engineering, Univ. of Arizona, Tucson, AZ

Experience:

1999– Present *Founder, President, and Director:*
The Roger Bacon Academy, Inc.
3610 Thaddeus Lott Lane, Leland, NC 29451
Tel: 910/655-3600
www.RogerBaconAcademy.net



Mr. Mitchell has researched, planned, designed, and implemented one of North Carolina's largest charter schools, Charter Day School. This rural school, 10 miles west of Leland, NC, has grown from an initial enrollment of 53 students in grades K-2 at its opening in 2000 to over 900 students in grades K-8 in 2011-2012. The school earned recognition as an Honor School of Excellence and has achieved the state's highest award as a Top-25 School in the state out of more than 1,850 K-8 schools. Despite receiving 30% less funding than surrounding schools, CDS has a substantial fund surplus.

From 2000 to 2013, Mr. Mitchell served on the Board of Charter Day School, Inc. and continues to serve as its Secretary.

In his development of RBA in its day-to-day management of charter schools, Mr. Mitchell created a comprehensive education model for successful schools.

This success was embodied in the second charter school's founding in 2007 north of Whiteville in Columbus County – Columbus Charter School. This school now has nearly 900 students in 2014-2015 in grades K-8.

Charter Day School and Columbus Charter School were their county's highest scoring schools in 2012-13 and 2013-14 with a diverse student body on substantially less funding.

RBA also provides management services for the new Douglass Academy in Wilmington and South Brunswick Charter school in Southport.

In 2009, Mr. Mitchell was honored by The John Locke Foundation with the John William Pope Sr. Award for the "Advancement of Freedom." President John Hood praised Mitchell's work starting and managing successful charter schools and giving parents the freedom to choose the best public education for their children in North Carolina.

In 2010, Mr. Mitchell was elected to the Board of the North Carolina Alliance for Public Charter Schools and served as its Chairman from 2012 to 2013.

In 2011, Mr. Mitchell was appointed to the North Carolina Public Charter School Advisory Council. This fifteen-member Council was created by the State Board of Education to provide advice on the state's charter school policy and to review and recommend applications for charter schools and renewals of charters. In 2013, he was appointed to the state's new Charter School Advisory Board until his resignation in 2014.

Mr. Mitchell instituted a classical curriculum in the schools he manages beginning with grammar and sentence structure diagramming in Kindergarten, along with spelling, and cursive handwriting. Beginning in 4th grade all students receive four years of Latin instruction. West Civilization history is begun in 1st grade. Lesson structure and instructional techniques are based on classical direct instruction methods.

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1989 - 1999 *Consultant*

After selling his computer company in 1989, Mr. Mitchell pursued his long-held interests in education by authoring courses in physics and poetry along with volunteer teaching at various public and private schools. . He was inspired by the success of Dr. Thaddeus Lott, Principal of Wesley Elementary in Houston, Texas, and founded The Roger Bacon Academy as the culmination of years of study of our educational system to emphasize proven, traditional methods and values aided by an infusion of the latest computer technology.

1968 – 1989 *Entrepreneur: Founder, President, and Owner*
Community Health Computing, Inc., Houston, Texas

In 1968, Mr. Mitchell founded Community Health Computing, Inc. and was the majority shareholder and Chairman of the Board until he sold the company in 1989. From 1973 to 1989, CHC grew from three employees and no revenue to over 200 employees with revenue of more than \$26 million annually. Until 1989, growth was financed internally.

- CHC designed, sold, installed, and maintained computer systems for large hospital pathology and radiology laboratories and had clients throughout the US and Great Britain. Clients included major teaching and research hospitals such as the Mayo Clinic, Grady Hospital in Atlanta, Vanderbilt Hospital in Nashville, New York Hospital, Sloan-Kettering, St. Luke’s in Houston, and many others.
- In 1989 Mr. Mitchell sold the majority of his stock to a group of outside investors and retired from the business. He remained on the Board of Directors until the company went public in 1993.

1965-1973 *Chief, Section of Bioengineering & Associate Biomathematician*
University of Texas M.D. Anderson Cancer Center, Houston, Texas

The M. D. Anderson Cancer Center is a 600-bed cancer research hospital with basic science departments of physics, biology, epidemiology, and biomathematics. Mr. Mitchell was appointed to establish and head a bioengineering section within the biomathematics department. This section had the responsibility for all basic research, teaching, and support of other departments in computers and bioengineering. Mr. Mitchell was responsible for a number of large N.I.H. grants and NASA contracts dealing with physiological simulations and data storage and management. Mr. Mitchell was also an adjunct instructor in bioengineering for the Baylor University College of Medicine in Houston.

Teaching and Academic Appointments

University of Arizona	1962-1964: Research Associate
Hybrid Computation Lab	1963-1964: Teaching Assistant
Baylor College of Medicine	1967-1973: Adjunct Instructor in Biomathematics
Univ. of Texas Graduate School of Biomedical Sciences	1967-1973: Instructor in Biomathematics
The University of Texas	1965-1971: Instructor in Biomathematics
M. D. Anderson Cancer Center	1971-1973: Associate Biomathematician

1964-1965 *Computer Engineer; Electronic Associates, Inc., Advanced Study Group, Princeton*
EAI was the world's largest manufacturer of analog/digital computers. The Advanced Study Group in Princeton was their R&D operation. Mr. Mitchell was responsible for projects which included both new hardware product design projects and simulation studies for governmental and industrial customers.

1962-1964 *Research Assistant and Instructor; University of Arizona, Dpt. Of Electrical Engineering*
Mr. Mitchell was a laboratory instructor in computer programming and systems simulation as well as having design responsibilities for several components of the lab’s advanced computer – ASTRAC II.

Publications

Mr. Mitchell has authored more than twenty scientific papers in peer-reviewed technical journals, contributed chapters in several computer textbooks, and is the inventor for two U. S. Patents.

Hobbies

Sailing, off-shore racing and cruising, (*Bonaventura*, an Island Packet 38)
Amateur radio operator (Station call K4BAG)
Poetry, Tennis, Skiing, Backpacking, Camping (Mr. Mitchell is an Eagle Scout.)

Major Projects

University of Arizona, Hybrid Computer Laboratory, Tucson, Arizona

Under Dr. Granino A. Korn, the Hybrid Computer Lab was building a large, very high-speed analog/digital computer for solving equations in optimal feedback control problems requiring iteration, Monte Carlo methods, or statistical methods as might be encountered in random process simulation of non-linear, stochastic systems. Specifically, Mr. Mitchell was responsible for the following projects.

- Design, build, and test a high-speed analog quarter-square multiplier for the lab's main computer - ASTRAC II.
- Design, build, and test a pseudo-random noise generator for ASTRAC II.
- Design, build, and test a multi-parameter optimizer for ASTRAC II to solve boundary-value problems with mixed end-conditions and other problems requiring iterative procedures.
- Taught the laboratory section of an undergraduate course on the use of analog computers to solve systems of differential equations

Electronic Associates, Inc., Advanced Study Group, Princeton, New Jersey

EAI, headquartered in Long Branch, was the world's largest manufacturer of analog/digital computers. The Advanced Study Group in Princeton was their R&D operation. Mr. Mitchell was responsible for the following projects which included both hardware design projects and simulation studies.

- Hybrid simulation of missile nose-cone ablation during re-entry.
- Hybrid simulation of F-111 terrain-following radar control system (for General Dynamics, Ft. Worth).
- Analog simulation of ionospheric electro-magnetic ray tracing (for USAF Cambridge Labs).
- Design the analog-digital interface for the company's new Model 580 hybrid computer.
- Evaluate glass delay lines as storage media for company products.
- Evaluate a special-purpose hybrid design for a possible voice recognition system.
- Implement a hybrid system for extracting human ECG's from signals with very low signal to noise ratios (for NYU).
- Designed and taught several courses on the use of hybrid computers in simulation and math modeling for the company's customers.

University of Texas Cancer Research Center, Houston, Texas

UT has a 600 bed cancer treatment hospital and a basic research center (M. D. Anderson Hospital and Tumor Institute) with departments of physics, biology, epidemiology, and biomathematics. Mr. Mitchell was hired to set up and run a bioengineering section within the biomathematics department. This section had the responsibility for all basic research, teaching, and support of other departments in computers and bioengineering.

- Mr. Mitchell established a large hybrid computer facility with a staff of engineers and programmers for research, teaching, and support. Mr. Mitchell was Principle Investigator on a number of NIH and NASA grants and contracts for projects in bioengineering. Some of the major projects he and his group completed are listed below.
- Implemented an on-line surgical monitoring system for the hospital.
- Implemented an on-line digital analyzer for Xenon-133 lung function testing.
- Implemented a digital system for both 12-lead and 3-lead ECG's.
- Grew a large, comprehensive simulation of the human cardio-vascular hemodynamic system. (This model incorporated anatomically correct geometry and had gravity terms on the blood flow. The baroreceptor/heart-rate control loop was also included. For astronauts undergoing high-G re-entry, the model was used to study blood pressure distributions at various couch angles and with various cardio-vascular de-conditionings as might result from prolonged space flight.
- Developed and implemented the on-line in-flight ECG monitoring system for Apollo astronauts.
- Developed a system for radiation dosimetry treatment planning for cancer patients.
- Developed an image analysis system for human chromosome classification.
- Developed a system for automating hospital pathology laboratories.
- Designed and taught a number of courses on computer modeling and simulation to medical students and graduate students in biology, biochemistry, and other life science disciplines.

Selected Bibliography

Publications

1. Wait, J. V. and Baker A. Mitchell, Jr. A Simple Solid-State Digital-to-Analog Converter for Hybrid Computing Systems. *ACL Memorandum* No. 61, the University of Arizona, Department of Electrical Engineering, February, 1963, 15 pp.
2. Hampton, R., G. A. Korn and Baker A. Mitchell, Jr. Hybrid Analog-Digital Random Noise Generation. *IEEE Trans. Electr. Computer*, Vol. EC-12, No. 4, pp. 412-413, August, 1963.
3. Mitchell, Baker A., Jr. A Hybrid/Analog-Digital One-Parameter Optimizer. *Annales de L'Association Internationale pour le Calcul Analogique*, No. 1, pp. 32-37, Bruxelles, January 1964.
4. Mitchell, Baker A., Jr. A Hybrid Analog Digital Parameter Optimizer for ASTAC II. *Proceeding of the Fall Joint Computer Conference*, pp. 271-285. Spartan Books, Inc., Baltimore, Maryland, Cleaver-Hume Press, Lond, 1964, 629 pp. Reprinted with minor revisions in *Simulation*, Vol. 4, No. 6 pp. 399-411, June, 1965.
5. Mitchell, Baker A., Jr. Hybrid Techniques in Statistical Analysis I. *Simulation*, Vol. 5, No. 2, pp. 87-89, August 1965.
6. Mitchell, Baker A., Jr. Hybrid Techniques in Statistical Analysis II. *Simulation*, Vol. 5, No.3, pp. 160-161, September 1965.
7. Mitchell, Baker A., Jr. and Lee D. Cady, Jr. Hybrid Computing Techniques Applied to EKG Analysis. *Ann N.Y. Acad. Sci.*, Vol. 128, Art. 3, pp. 850-860, January, 1966.
8. Cady, Lee D., Jr. and Baker A. Mitchell, Jr. Computer Components for Electrocardiographic Processing. *The Amer. J. Med. Electronics*, Vol. 5, No. 1, pp. 40-43, First Quarter, 1966.
9. Simons, David G., Baker A. Mitchell, Jr. and Ronald Rathjen. Physiometrics Data Acquisition. *Proceedings of the Fourth Annual Symposium on Biomathematics and Computer Science in the Life Science*, Houston, Texas, March 24-26, 1966. Abstracts, p. 58.
10. Mitchell, Baker A., Jr. On-Line Hybrid Computing at Anderson Hospital: A Progress Report. *Proceedings of the Fourth Annual Symposium on Biomathematics and Computer Science in the Life Science*, Houston, Texas, March 24-26, 1966. Abstract, p. 78.

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11. McLoed, John, Baker A. Mitchell, Jr. and Nathan Zainfeld. PHYSBE - With Emphasis on the Left Heart and Aorta. *Proceedings of the Fifth Annual Symposium on Biomathematics and Computer Science in the Life Sciences*, Houston, Texas, March 30, 31, and April 1, 1967. Abstract, p. 95.
12. Mitchell, Baker A., Jr. On-Line Analysis for High Noise Electrocardiograms. *Proceedings of the Seventh Annual Symposium on Biomathematics and Computer Sciences*, March 28, 1969, p. 41.
13. Mitchell, Baker A., Jr. On Appropriate Choice of Criteria for Minimization in Least Squares Regression. *Proceedings of the Eighth Annual Symposium on Biomathematics and Computer Science in the Life Sciences*, March 23-24, 1970. Abstract, p. 69.
14. Mitchell, Baker A., Jr. and Stephen M. Sloan. ANSUR - Anesthesiology Surgery Information System. *Proceedings of the San Diego Biomedical Symposium*, San Diego, California, pp.9-12, April 1970.
15. Mitchell, Baker A., Jr. Introduction to Analog/Hybrid Computation. *Bioengineering: A First Course*. Edited by Stark and Jacobs, F.A. Davis, 1971.
16. Thames, Howard D., Jr. and Baker a. Mitchell, Jr. Mathematical Model Simulating Photon Transport in Tissue: Gamma-Ray Dosimetry. *Summer Computer Simulation Conference*, Boston, July 1971.
17. Grant, W.H., G. D. Oliver and B. A. Mitchell, Jr. Automatic Analysis of Empirically Derived LET Spectra. *Health Physics*, Vol. 22, pp. 351-354, April, 1972.
18. Mitchell, Baker A., Jr. Basic Simulation Techniques - Analog, Digital, and Hybrid. Part I, Chapter 2, Computer Techniques in Biomedical Engineering. Gordon & Breach, 1972.
19. Mitchell, Baker A., Jr. and Robert P. Giese. A Cardiovascular System Model for Lower-Body Negative Pressure Response. Republished by *Analog/Hybrid Computer Educational Society*, Vol. IV, No. 5, pp. 81-108, May, 1972.
20. Mitchell, Baker A., Jr. and Robert P. Giese. A Cardiovascular System Model for Lower-Body Negative Response. Prepared for the National Aeronautics and Space Administration under Contract NAS 9-11119, September, 1972.
21. Ong, P.S., P. K. Lund, C. E. Litton and B. A. Mitchell, Jr. An Energy Dispersive System for the Analysis of Trace Elements in Human Blood Serum. *Advances in X-ray Analysis*, Vol. 16, Plenum Publishing Corporation, 1973.
22. Mitchell, Baker A., Jr. The Quest for the Perfect L.I.S. *Source* Vol. VIII No. 3, 1986.
23. Mitchell, Baker A., Jr. Fault Tolerant Hardware Takes an Evolutionary Step. *Computers in Healthcare*, May, 1987.
24. Mitchell, B.A., Improved RFP Will Raise Information Systems Standards, *Proceeding of the American Association for Medical Systems and Informatics*, Sixth Annual Congress 1987, AAMSI '87, Washington, DC.

Articles About

Childs, Bill W. CHC Plans for Total Healthcare System Integration. *Healthcare Computing & Communications*. Vol. 4 No. 3, March, 1987.

Patents

- Mr. Mitchell is the sole inventor of a patent for a computer file system for patient medical data. In 1973 he assigned ownership of the patent to his company Community Health Computing, Inc. for marketing, sales, and installation of systems based on his patent.
- Mr. Mitchell is co-inventor of a patent for a decorative lighting device. In 1995 he assigned ownership of the patent to Holiday Innovations, Inc.

Invited Presentations

- June, 1965: "Hybrid Computing Techniques Applied to EKG Analysis." The New York Academy of Sciences Symposium on Advances in Biomedical Computer Applications, New York, New York.
- March 24-26, 1966: "On-Line Computing at Anderson Hospital: A Progress Report." Fourth Annual Symposium on Biomathematics and Computer Science in the Life Sciences, Houston, Texas.

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- January 17-18, 1967: "A General-Purpose Lumped Model of Cardiovascular Dynamics for Hybrid Simulation." Meeting on Simulation in Medicine and Biology, Mayo Clinic, Rochester, Minnesota. Meeting co-hosted by Simulation Councils, Inc., and the Mayo Clinic.
- March 30-31, and April 1, 1967: "PHYSBE - With Emphasis on the Left Heart and Aorta." Fifth Annual Symposium on Biomathematics and Computer Science in the Life Sciences, Houston, Texas.
- April 18-20, 1967: Session Chairman, "Biomedical Computer Applications," Spring Joint Computer Conference, Atlantic City, New Jersey.
- March 14-16, 1968: Session Chairman, "Image Processing I." Sixth Annual Symposium on Biomathematics and Computer Science in the Life Sciences, Houston, Texas.
- November 22, 1968: "Time Constants and Stability in Physiological Systems." Simulation Councils Regional Meeting, NASA Manned Spacecraft Center, Clear Lake, Texas.
- March 28, 1969: "Adaptive, On-Line Analysis for High Noise electrocardiograms." Seventh Annual Symposium on Biomathematics and Computer Science in the Life Sciences.
- March 28, 1969: Session Chairman, "Neutron and Growth Models." Seventh Annual Symposium on Biomathematics and Computer Science in the Life Sciences.
- September 19, 1969: "Biomedical Simulation in the 70's." Simulation Councils Regional Meeting, NASA Manned Spacecraft Center, Clear Lake, Texas.
- March 24, 1970: "On Appropriate Choice of Criteria for Minimization in Least Squares Regression." Eighth Annual Symposium on Biomathematics and Computer Science in the Life Sciences.
- April 3-8, 1970: "ANSUR - An Anesthesiology Surgery Information System.: San Diego Biomedical Symposium, San Diego, California.
- March 11, 1971: "Pathology Automation at M.D. Anderson Hospital, The Methods and Goals." Department of Biomathematics Seminar Series, Houston, Texas.
- March 22-24, 1971: "Simulation of the Endocrine System." Ninth Annual Symposium on Biomathematics and Computer Science in the Life Sciences, Houston, Texas.
- October 22, 1971: "A Cardiovascular System Model." Hybrid Simulation Symposium, The University of Texas at Austin, Austin, Texas.
- August 15, 1972: "Hybrid Computer Applications in Bioengineering." Catholic University of La Plata, Argentina School of Applied Mathematics, La Plata, Argentina.
- February 21, 1973: "On-Line Pathology Information Management System." Data Processing Management Association, Eastex Bay Chapter, Baytown, Texas.
- March 8, 1973: "Real-Time File Systems for Pathology Data." Central Texas Section Meeting of IEEE, The University of Texas at Austin, Austin, Texas.