EDUCATION:

- 1974-1979 The George Washington University, Master of Science Degree, Biological Sciences-Cell Physiology. Washington, D.C.
- 1969-1971 University of Maryland, Bachelor of Science, Biology. College Park, Maryland
- 1968-1969 Loyola College, Baltimore, Maryland.

<u>Thesis</u>

"Organ Culture of the honeybee wax gland and stimulation of in-vitro wax production" Thesis advisor: Dr. Weintraub, Professor Emeritus

WORK EXPERIENCE AND CURRENT POSITION:

- 2008 Present Adjunct to Assistant Professor, Lynn University, Boca Raton, Fl
- 2004-2008 Consultant, Product Development, Lucas Consulting, Boca Raton, Fl
- 2003 2004 Director, Product Development Center, Miami Biomedical Research Division, Miami, Fl.
- 2001–2003Group Manager, Cytomics Development Hardware & Software, Beckman Coulter, Inc., Miami, FL.
- 1997 2000 Project Manager, Cellular Analysis Development Center, Beckman Coulter Inc., Miami, FL.
- 1985 1997 Senior Manager, Research and Development, Coulter Diagnostics, Miami, FL.
- 1980 1985 Research Scientist, Research and Development, Coulter Diagnostics, Miami, FL.
- 1979 1980 Laboratory Manager, Pulmonary Oncology, Comprehensive Cancer Center, Miami FL.
- 1971 1979 Instructor-Laboratory Manager, Prince George College, Largo, Maryland.

AREA OF SCIENTIFIC INTEREST:

Scientific interests include medical science, Alternate Energy Solutions and system engineering. The theme of "Simplify and Automate" manual assays for early disease detection using novel intra-cellular technology was the logo used to advertise products created. While employed for Beckman Coulter, Inc I developed over 100 commercial products. I am the author on 13 US Patents and 3 European patents. The products designed involved chemistry, hematology, cytometry, robotics, lasers, artificial intelligence software and system engineering. I edited and wrote various product manuals, training manuals, and gave training sessions for various instruments and biochemical assays that were developed by the team. I have lectured all over the world. In 1981, I was the principal Investigator for an alternate energy grant that used sugarcane bagasse as the starting material to enzamatically convert cellulose to alcohol for fuel using solar distillation to harvest the alcohol. I am also a partner in a NASCAR short track race car and served as the crew chief responsible for the set up. I designed and built an "off the grid" house in Maine on 150 acres of land. The home integrates wind power, photo voltics, and a conventional generator. The home was built in 1997. The forest on the property is maintained in a stewardship program where trees harvested are replaced with Hybrid Poplar able to grow to maturity in 10 - 12 years. I taught Science courses in 1971 at Prince George Community College, Largo Md. that covered biology, biochemistry, physics and chemistry I now have returned to teaching at Lynn University.

AWARDS AND GRANTS:

- Beckman Research & Development Group won the Frost and Sullivan Industrial Quality Award for the FC 500 Flow Cytometer, 2003
- Inducted in the Beckman Coulter Inventors Hall of Fame. 2001.
- Inducted in the Beckman Coulter "Circle of Excellence" 2001
- Principal Investigator : Department of Energy Grant "Production of Methane, Ethanol, single cell protein and Fertilizer via Solar Distillation and Immobilized Enzymes from Waste". Grant # DE- FG44-80R410340 1981-1982
- Principal Investigator : USDA Contract Grant 7412181002Y "Study viability of Hybrid Poplar in recovering "Slash" cleared forest areas, ", 2010

CONFERENCES AND WORKSHOPS:

- 2008 CEU 16 Credits FDA"The Essentials of Medical Device Regulation: A Primer for Manufacturers and Suppliers
- 1996 Guest speaker at Japan ISAC "Cytoenzymology" meeting.
- 1997 –Guest speaker at Joint Congress of BSI and Biochemical Society "Flow Cytoenzymology as a sensitive method to study cell function using CellProbe reagents".

BIBLIOGRAPHY:

Author of more than 55 scientific publications as follows:

EDUCATIONAL PUBLICATIONS:

- FDA Quality System Documentation (2008) Uber Lucas Intl.LLC
- Editor, Operator Manual FC 500 MPL Flow Cytometer (2004)
- Editor, Operator Manual, FP1000 Robotic Sample Preparation system (2004)
- Editor, Operator Manual, PrepPLus and PrepPLus 2 System (2003)
- Editor, Operator Manual CellPrep System (2003)
- Lucas F, Enten D. CellProbeTM Reagents Quick Tips. (1996)
- Lucas F A Collection of Abstracts CellProbeTM Reagents.PN 4203679 (1996)
- Lucas F Introducing Flow Cytoenzymology with CellProbeTM Enzyme Substrates. (1997)
- Lucas F, Sadinsky J. Coulter CellProbeTM Reagents and Flow Cyto-enzymology: A New Cell Function Assay.
- Lucas, F, Sadinsky, J. Technical Monograph "Flow Cutoenzymology and CellProbe Reagents A Simplified Approach to Measuring Intracellular Enzyme Activity PN 4203675 (1887)
- Lucas F, CellProbe Reagent Laboratory Manual (1997)
- Lucas, F Focus Session on Cytoenzymology (1996)
- Lucas, F. Web Page Design "CellProbe" on the Beckman Coulter Website
- Lucas, F. and Gage, B. Lab Experiments for the Allied Health Sciences. (1977) ISBN 0-8087-0763-9 Burgess Publishing, Minneapolis, Minn.

PATENTS:

Issued

- US7431497. October, 2008 Dental X-Ray Film Viewing Device
- EP1620727 Differential Determination of Hemoglobin
- EP1623007 Intercellular Antigen Method
- US7354773, April, 2008 Method and Apparatus for Preparing Cell Samples for Intracellular Antigen Detection Using Flow Cytometry.
- US6692702 Feb, 2004 Apparatus for Biological Sample Analysis
- US6692968, Feb. 2004 Apparatus and Method for Sample Purification and Analysis.
- US5976822, Nov 1999, Method and Reagent for Monitoring Apoptosis and Distinguishing Apoptosis from Necrosis (Cell Probe)
- US5968831, Oct 1999, Cell Control Used to Confirm Enzymatic Activity (Cellzyme Control/Cell Probe)
- US5905031, May 1999, Identification of Blast Cells in a Leukocyte Cell Preparation (Cell Probe)
- US5971946, Feb 1999, Method for Determining Activity of Enzymes in Metabolically Active Whole Cells (Cell Probe)
- US5849513, Dec 1998, An Assay Reagent and a Method of Making and Using the Assay Reagent (Cell Probe)
- US5776720, Jul 1998, An Assay Reagent and a Method of Making and Using the Assay Reagent (Cell Probe)
- US5733719, Mar 1998, Method of Making an Assay Compound (Cell Probe)
- US5698411, Dec 1997, Method for Determining Activity of Enzymes in Metabolically Active Whole Cells (Cell Probe)
- EP88906612.2 Mar, 1989 Improved Turbid metric Rate Inhibition Assay for Haptens
- US4495034 Jan 1985 Waste Effluent Treatment System and Solvent Recovery

ARTICLES:

Berliner E, Smith J., Kuylen N., & Lucas F. Flow cytoenzymology as a tool for rapid cell-type and celllineage identification of nucleated red blood cells and blast cells. Laboratory Hematology (3) 1, 1997, pg.72.

SCIENTIFIC CONFERENCE PRESENTATIONS:

- Lucas, F., Chen, S., Williams. J. (1981) Serum Blank vs. Polychromatic Methods in the Determination of Total Bilirubin. Clin. Chem. 27 (6) 1037.
- Lucas, F., Azukas, J., Williams J., Bedevia, J. (1981) Calcium and Creatinine Determination in Urine. Clin. Chem. 27 (6) 1098.
- Martinez J., Lucas, F. Ho, S., Bedevia, J., Kaplan, S (1983) HDL Cholesterol Calibration from Total Cholesterol Regression Equations. Clin. Chem. 29 (6) 1207.
- Ho, S, Lucas, F., Bedevia, J., Martinez, J. Johnston, D. (1983) Problems with Direct Bilirubin Regression Equation. Clin. Chem. 29 (6) 1164.
- Bedevia, J. Lucas, F., Ho, S., Martinez, J. (1983) Use of Polychromatic Equations to Increase Accuracy in the Colorimetric Glycohemoglobin Assay. Clin. Chem. 29 (6) 1223.
- Lucas, F. Bedevia, J Ho, S Hoover, B, Martinez, J. (1983) Multiple Polychromatic Equations Initiated by Serum Characterization Provide Greater Accuracy in Direct Bilirubin Determinations. Clin. Chem. 29 (6) 1260
- Sewell, C. Naylor, N. Lucas, F. (1986) Automated Determination of CK-MB Isoenzyme. Clin. Chem. 32 (6) 1137.
- Lucas, F. Martinez, J. Carter, J (1986) Antigen Excess Prediction in Immunoglobulin Assays. Clin. Chem. 32 (6) 1146.
- Lucas, F. Bedevia, J. McRae, B. Shenkin, M. (1986) Turbid metric Rate Inhibition Assay for Theophylline Using a Monoclonal Antibody. Clin. Chem. 32 (6) 1082.
- Lucas, F. Bedevia, J. McRae, B. Shenkin, M. (1986) Turbid metric Rate Inhibition Assay for Phenytoin Using a Monoclonal Antibody. Clin. Chem. 32 (6) 1082.
- Lucas, F Bedevia, J. McRae, B. Shenkin, M. (1986) Turbid metric Rate Inhibition Assay for Phenobarbital Using a Monoclonal Antibody. Clin. Chem. 32 (6) 1082.
- Lucas, F, Landrum, E. Ho, S (1987) Adaption evaluation of CEDIA[™] Digoxin on the Coulter DACOS[™] Chemistry Analyzer. Clin. Chem. 33 (6) 1014.
- Lucas, F., HO, T., Bedevia, J. (1987) Adaption and Evaluation of DART[™] Magnesium to the Coulter DACOS[™] Chemistry Analyzer. Clin. Chem 33 (6) 1007.
- Lucas, F. Ho, S. (1987) Adaption and Evaluation of CEDIA[™] Digoxin on the Coulter CPA[™] Chemistry Analyzer. Clin. Chem. 33 (6) 943.
- Lucas, F, Ho, T. Landrum, E. (1987) Adaption of DART[™] Magnesium Reagent to the Coulter CPA[™]. Clin. Chem. 33 (6) 943.
- Lucas, F. Landrum, E. Ho, S. Ricardo, R. Bedevia, J. (1987) Adaption and Evaluation of Monoclonal Antibody Based Therapeutic Drug Assays on Coulter CPA. Clin. Chem. 33 (6) 943.
- Lucas, F. Ho, S. (1987) Adaption and Evaluation of DARTTM Total and Direct Bilirubin Reagent to the Coulter CPA. Clin. Chem. 33 (6) 942.
- Lucas, F.Bedevia, J. Shenkin, M. Landrum, E.(1988) Turbidimetric Rate Inhibition Assay for Gentamicin using a Monoclonal Antibody. Clin.Chem. 34 (6) 1256.
- Lucas, F. Ho, S. (1988) Adaption and Evaluation of CEDIA[™] Thyroxin on the Coulter DACOS[™] Chemistry Analyzer. Clin. Chem. 34 (5) 1208.
- Lucas, F. Ho, S. (1988) Adaption and Evaluation of CEDIA[™] Thyroxin on the Coulter CPA Chemistry Analyzer. Clin. Chem. 34 (6) 1166.
- Lucas, F. Ferran, M. Ibanez, J. (1988) TDM Linear Dose Response Curves using Monoclonal Antibodies. Clin. Chem. 34 (6) 1154.
- Lucas, F. Johnston, D. Sewell, R. Shukla, R. Carter, J. Ibanez, J. (1989) Bichromatic Sample Blank Methodologies for DACOSTM, DACOS XLTM. Clin. Chem. 36(6) 1156.
- Lucas, F. Campbell, M. Carter, J. (1990) Flow Cytometric Analysis for Alcohol Receptors in Platelets. Clin. Chem. 36 (6) 1024.

- Lucas, F. Galiounghi, A. Steele, B. (1990) Evaluation of the Coulter Optichem Chemistry Analyzer Enzyme Reagents. Clin. Chem. 36 (6) 1204.
- Lucas, F. Campbell, M. Carter, J. (1990) Flow Cytometric Analysis of THC Receptors in Lymphocytes. Clin. Chem. 36 (6) 1024.
- Lucas, F. Galiounghi. A. (1990) Flow Cytometric Analysis of Digoxin Receptors in Lymphocytes. Clin. Chem. 36 (6) 1031.
- Steele, B.Lucas, F. Carter, J. (1993) The Measurement of Proteolytic Enzyme Activities of Lymphocytes of Hospitalized HIV-1 Patients by Flow Cytometry. Clin. Chem. 39 (6) 1158.
- Steele, B. Lucas, F. Carter, J. (1993) The Flow Cytometric Measurement of Proteolytic Enzymatic Activity of Lymphocytes of Septic Patients. Clin. Chem. 39 (6) 1158.
- Woodard, M. Steele, B. Shukla, R. Lucas, F. Carter, J. (1993) Study of Neoplastic Enzyme Patterns by Flow Cytometry. Clin. Chem. 39 (6) 1194.
- Lucas, F. Galiounghi, A. Carr, S., Landrum, E. Hoff, P. Carter, J. Steele, B. Whitcomb, C. (1993) Measurement of Proteolytic Enzymatic Activity in Lymphocytes, Monocytes, and Granulocytes by Flow Cytometry Using Flourogenic Substrates in Hospitalized Leukemic Patients. Clin. Chem. 39 (6) 1195.
- Steele,B. Hamilton, M. Griffin, D. Lucas,F. Carter, J. (1995) Differences in Leukocyte Enzyme Activity in HIV-1+ Patients with and without TB. Clin. Chem. 41 (6) S239.
- Hamilton, M. Steele, B. Galiounghi, A. Lucas, F. Carter, J. (1995) Assessing Newborn Health Using Cord Blood Leukocyte Enzyme Activities Detected with Novel Fluorogenic Reagents. Clin. Chem. 41 (6) S239.
- Hamilton, M. Steele, B. Kuygen, N. Lucas, F. Carter, J. (1995) The Use of Novel Fluorogenic Enzyme Substrates to Detect Nucleated Red Blood Cells. Clin. Chem. 41 (6) S239.
- Steele, B. Lucas, F. Jalle, G. Carter, J (1996) Patterns of Enzyme Activities of WBC's as measured by Flow Cytometry. Clin. Chem. 42 (6) S103.
- Lucas, F. Kaylen, N. Galiounghi, A. Barcelor, M. Carter, J. (1996) New Method for Identification of Nucleated Red Blood Cells in a Lysed Leukocyte Cell Preparation by Flow Cytometry. Laboratory Hematology 2 (1) 68.
- Lucas, F.,Galiounghi, A., Landrum, E. Jaffe, G., Garcia, N. Barcelon, M. Baig, M. DeValle, U. Carter, J (1996) Measurement of Protease and Esterase enzymes using fluorogenic substrates in living cells. Poster Session International Society for Analytical Cytology . Congress XVII Rimini, Italy April
- Lucas, F.,Galiounghi, A., Landrum, E. Jaffe, G., Garcia, N. Barcelon, M. Baig, M. DeValle, U. Carter, J (1996) Study of Enyme patterns I U937 and HL 60 cell lines exposed to methotrexate drug monitored by flow cyttoenzymology. Poster Session International Society for Analytical Cytology . Congress XVII Rimini, Italy April
- Kenney, D., Rosen, F.S., Allen, A. Sundel, R. lucas, F., Carter, J. (1996) Treatment associated changes in white blood cells enzyme activities measured by flow cytometry in inflammatory disease. (center for blood research, Harvard Medical school and Childrens Hospital, Boston, Ma. . Poster Session International Society for Analytical Cytology . Congress XVII Rimini, Italy April
- Steele, B., Lucas, F. Jaffe, G, Campo, R. Carter, J (1996) Enzyme activities of white blood cells in Acutelimited and chronic viral disease as measured by flow cytometry.(Univ.Miami, Jackson Memorial Hospital. . Poster Session International Society for Analytical Cytology . Congress XVII Rimini, Italy April
- Landrum, E. Garcia, N. Galiounghi, A. Lucas, F. (1997) Flow Cytometric Measurement of a CPP32-Like Protease Using a Synthetic Fluorogenic Substrate in a U937 Apoptosis Induced Model. Communications in Clinical Cytometry
- Galiounghi, A. Landrum, E. Lucas, F. Strikcland, J. (1997) Measurement of Early Apoptotic Events in Jurkat Cells Using CellProbe[™] Reagents. Communications in Clinical Cytometry.
- Lucas, F. Hoffman, J. (1997) Method Comparison of Two Phagocytic Assays: CellProbe[™] Reagent, E. coli-Phagocytosis and Orpegen Pharma Phagotest. Communications in Clinical Cytometry.
- Kuylen, N. Galiounghi, A. Lucas, F. (1997) Flow Cytometric Measurement of Dipeptidyl Peptidase IV (DPP IV) to Detect Nucleated Red Blood Cells in Peripheral Blood. Communications in Clinical Cytometry.
- Lucas, F. Chin-Yee, I. Brown, S. (1997) Flow Cytoenzymology and CellProbe Reagents. Insightometry From Discovery to Diagnosis. 17th International congress of Biochemistry and Molecular Biology San Francisco, Ca.

- Lucas, F. Kuylen, N. Galiounghi, A. Carter, J. (1997) New Method for Identification of myeloblast cells in a lysed leucocyte cell preparation by flow cytometry. Poster session 12th annual meeting of clinical applications of cytometry, Charleston, S.C.
- Lucas, F. Galiounghi, A. Garcia, N. Carter, J (1997) Measurement of Cell Probe protease enzymes using fluoregenic substrates in living cells observing peripheral blood time course variation in values. Poster session 12th annual meeting of clinical applications of cytometry, Charleston, S.C. Poster session 12th annual meeting of clinical applications of cytometry, Charleston, S.C.
- Lucas, F. Kuylen, N. Barcelon, Carter, J. (1997) Identification of cell type based on a profile of enzymatic activity in a flow cytoenzymological assay. Poster session 12th annual meeting of clinical applications of cytometry, Charleston, S.C.
- Lucas, F. Galiounghi, A. Shukla, R, Crews, H. Carter, J. (1977) Development of a Cell Control material for Flow Cytoenzymology Assays. Poster session 12th annual meeting of clinical applications of cytometry, Charleston, S.C.
- Lucas, F. Galiounghi, A. Landrum, E. Strickland, J. (1998) Use of Cell Probe reagents for Cathepsin G and Elastase to study levels found in neutrophils and monocytes. Poster session XIX Congtess of ISAC. Cytometry Supplement 9 p78'
- Lucas, F. Hoffman, J. Kuylen, N. (1998) Use of CellProbe reagents in multicolor cytotoxic T cells and neutrophil function assays on the flow cytometer. Poster session XIX Congress of ISAC. Cytometry Supplement 9 p78'
- Burshetyn, A. Lucas, F. (1998) Monoclonal antibody based method for quantitation of hemoglobins. Poster session XIX Congress of ISAC. Cytometry Supplement 9 p78'
- Roth,P. and Lucas, F. (2002) Drug Discovery Assay Tutorial: Automation in Flow Cytometry. Genetic Engineering News 22 (12) June 15, 2002 Retrieved from www.genengnews.com
- Albaredam I, Lucas, F. etal (2002) Biomek FX Apoptosis Automation, ISAC XXI Congress
- Wilkinson, J. Lucas F. etal (2004) Cytokine and Surface Marker Automation, ISAC XXII Congress, Cytometry 59A (1) 50.