

CURRICULUM VITAE  
**Mildred Acevedo-Duncan**

10/05

**Present Address**

1301 Williams Road  
Plant City, FL 33565  
Phone: Home; (813) 754-8616  
Office: (813) 972-2000 ext. 6967

**Personal Data:**

Citizenship: American  
Birthplace: Puerto Rico

**Objective:**

My current research interest involves intra and inter-cellular regulation; specifically how transmembrane signals from hormones, growth factors and drugs regulate normal cellular function and how dysregulation at the receptor, second messenger or genomic levels leads to abnormal cell interactions and cellular malignancy. In-vivo and in-vitro experimental cancer therapies (single and combined modality treatments), tumor biology, radiation biology, flow cytometry, cell cycle analysis, and cyclins. My goal is to be an oncology research investigator working in a university setting and to teach biochemistry, general and cell biology courses.

**Key Words: cell biology, oncology, protein kinase C, glioma, cell cycle, cyclins, cyclin dependent kinases.**

**Education:**

**Assistant Professor**

(1991-present) University of South Florida,  
Tampa, FL (813) 972-2000 ext 6967

Principal Investigator, Merit Review Research Program, James A. Haley Veterans Hospital, Tampa, FL.

Research: Action of radiation on glioma protein kinase C and cell cycle.

**Postdoctoral Research Associate:**

(1988-1991) University of South Florida and VA Hospital, Tampa.  
(813) 972-8426, Ext. 2942

Postdoctoral Mentor: Santo Nicosia

Research: Ovarian Pathology

**Postdoctoral Research Associate:**

(1987-1988) VA Hospital, Tampa. (813) 972-2000

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Postdoctoral Mentor: Robert V. Farese

Research: Insulin action on protein kinase C in BC3H-1 myocytes.

Postdoctoral Research Associate:

(1986) University of South Florida, Tampa. (813) 974-3393

Postdoctoral Mentor: Ken Keller

Research: Regulation of glycoprotein biosynthesis (vitellogenin in *Xenopus laevis*) and molecular cloning of the ovomucoid gene.

Special Training: Recombinant DNA technology.

Postdoctoral Research Associate:

(1985-1986) University of Florida, Gainesville, FL (904) 392-3541

Postdoctoral Mentor: David Silverman

Research: Isolation and purification of *Chlorella vulgaris* carbonic anhydrase.

Special Training: Mass spectrometric techniques to determine kinetic constants for the carbonic anhydrase catalyzed reaction.

Foreign Travel: (1984-1985) Resided in Senegal, West Africa where my husband was employed as a research plant pathologist. We returned to the United States due to the scarcity of cell biology research positions in Senegal.

Ph.D.: (1979-1983) University of California, Riverside

Major Professor: Edward J. Carroll, Jr.

Dissertation: Isolation of an operationally defined sea urchin vitelline envelope with sperm receptor activity and immunological evidence for a sperm receptor polypeptide.

Coursework: Emphasis on advanced topics in fertilization.

Special Training: Physical and biochemical isolation procedures. Scanning electron microscopy and immunofluorescent techniques.

Master of Arts in Biology: (1977-1979) University of California, Riverside

Major Professor: Edward J. Carroll, Jr.

Thesis: Effects of ozone on sea urchin fertilization and early development.

Coursework: Cell biology, genetics, embryology and experimental cytology.

Independent study and research in sea urchin fertilization and early development.

Special Training: Transmission electron microscopy.

Bachelor of Arts: (1973-1974) University of California, San Diego, Revelle College

Coursework: Emphasis on cellular and molecular biology. Independent study in cell

biology. Minor in psychology.

### **Manuscripts in Preparation**

Whelan, S., Slawson, C., Acevedo-Duncan, M., and Potter, R. (2005) Increased Protein Monoglycosylation in EGF stimulated MDA-MB-468 and SK-BR-3 Breast Cancer Cell Lines Leads to Changes in MAPK Activation.

Whelan, S., Acevedo-Duncan, M., and Potter, R. (2005) A novel MAPK (ERK-4) present in higher quantities of human breast tissue and breast tumor derived cell lines.

### **Publications:**

Rekha, P. and Acevedo-Duncan, M. (2005) Detection of protein kinase C- $\iota$  as a marker for brain tumorigenesis. Submitted to European Journal of Cancer

Matthews, J.A., Belof J., Acevedo-Duncan, M., and Potter, R.L. (2005) Differential activation of Akt in response to increasing intracellular O-GlcNAc levels in human transformed glial cells. Submitted: Biochem. Biophys. Acta.

Russell, C., and Acevedo-Duncan, M. (2005) Effects of PD 406976 on cell cycle progression, proliferation, PKC isozymes and apoptosis in glioma and SVG transformed glial cells. Cell Proliferation 38:87-106.

Matthews, J.A., Acevedo-Duncan, M., and Potter, R.L. (2005) Selective down-regulation of PKC- $\alpha$  and PKC- $\epsilon$  due to elevated intracellular O-GlcNAc levels in SVG cells. Biochem. Biophys. Acta. 1743: 305-315.

Bicaku, E., Patel, R., and Acevedo-Duncan, M. (2005) Cyclin dependent kinase activating kinase co-localizes with protein kinase C- $\iota$  in human glioma cells. Tissue and Cell 37:53-58.

Acevedo-Duncan, M., Russell, C., Patel, S. and Patel, R. (2004) Aloe-emodin modulates PKC isozymes, inhibits proliferation, and induces apoptosis in U-373MG glioma cells. Interna. Immunopharm. 4:1775-1784

Acevedo-Duncan, M., Patel, R., Whelan, S. and Bicaku, E. (2002) Human glioma PKC- $\iota$  and PKC- $\beta$ II phosphorylate cyclin dependent kinase activating kinase during the cell cycle. Cell Proliferation 35:23-36.

### **Publications:**

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Acevedo-Duncan, M., Pearlman, J., and Zachariah, B. (2001) Sensitivity of human glioma U-373MG cells to radiation and the protein kinase C inhibitor, calphostin C. *Cell Proliferation* 34:31-41.

Bicaku, E., and Acevedo-Duncan, M. (2001) Ultrastructural study of protein kinase C localization during the cell cycle of human glioma cells. *Tissue & Cell* 33:55-62

Bai, W., Oliveros-Saunders., Wang, Q., Acevedo-Duncan, M.E., Nicosia, S.V. (2000) Estrogen stimulation of ovarian surface epithelial cell proliferation. *In Vitro Cell Developmental Biology - Animal* 36:657-666.

Yamamoto, M., Acevedo-Duncan, M., Chalfant, C., Patel, N.A., Watson, J.E. and Cooper, D.R. (2000) Acute glucose induced down regulation of PKC- $\beta$ II accelerates cultured vascular smooth cell proliferation. *American Journal of Physiology* 279:C587-C595.

Cooper, D.R., Watson, J., Patel, N. Illingworth, P. Acevedo-Duncan, M., Goodnight, J., Chalfant, C., and Mischak, H. (1999) Ectopic expression of Protein kinase c- $\beta$ II, - $\delta$  and - $\epsilon$ , but not  $\beta$ I or - $\alpha$  provide for insulin stimulated glucose uptake in NIH-3T3 fibroblasts. *Archives of Biochemistry and Biophysics* 372: 69-79.

Yamamoto, M., Acevedo-Duncan, M. Chalfant, C., Patel, N.A., Watson, J.E. and Cooper, D.R. (1998). The roles of protein kinase C  $\beta$ I and  $\beta$ II in vascular smooth muscle proliferation. *Experimental Cell Research* 240:349-358

Acevedo-Duncan, M., Zhang, R., Cooper, D.R. and Greenberg, H.(1997) Effects of interferon and PKC modulators on human glioma protein kinase C, cell proliferation and cell cycle. *Neurochemical Research* 22:775-984

Acevedo-Duncan, M., Collins, J., Zhang, R., Haller, E., Chalfant, C., and Cooper, D.R. (1995) In-situ effects of interferon on human glioma protein kinase C- $\alpha$  and - $\beta$  ultrastructural localization. *Cell Growth and Differentiation* 6: 1353-1365.

Acevedo-Duncan, M., and Zhang, R. (1994) Heterogeneity of protein kinase C activity in human U-373 and G-26 glioma cells. *Biochem. Biophys. Res. Commun.* 205:127-134.

### **Publications:**

Cozza, E.M., M. Vila, M. Acevedo-Duncan, R.V. Farese and C.E. Gomez-Sanchez. (1990) Treatment of primary cultures of calf adrenal glomerulosa cells with ACTH and phorbol esters. A comparative study of the effects on aldosterone production on ACTH

signalling system. *Endocrinology* 126:2169

Cozza, E. N., M. del Carmen Vila, M. Acevedo-Duncan, C. E. Gomez-Sanchez, and R. V. Farese. (1989). ACTH increases diacylglycerol and activates protein kinase C in primary cultures of calf adrenal glomerulosa cells. *J. of Steroid Biochem.* 35:343

Cooper, D.R., J.E. Watson, M. Acevedo-Duncan, R. J. Pollet, M. L. Standaert, and R. V. Farese. (1989). Retention of specific protein kinase C isozymes following chronic phorbol ester treatment in BC3H-1 myocytes. *Biochem. Biophys. Res. Commun.* 161:327

Acevedo-Duncan, M., D. R. Copper, M. L. Standaert, and R. V. Farese. (1989). Immunological evidence that insulin activates protein kinase C in BC3H-1 myocytes. *FEBS Lett.* 244:174-176.

Tu, C. K., M. Acevedo-Duncan, G. C. Wynns, and D. N. Silverman. (1986). Oxygen-18 exchange as a measure of accessibility of CO<sub>2</sub> and HCO<sub>3</sub> to carbonic anhydrase in *Chlorella vulgaris* (UTEX 263). *Plant Phys.* 80:997-1001.

Acevedo-Duncan, M., and E. J. Carroll, Jr. (1986). Immunological evidence that a 305-kilodalton vitelline envelope polypeptide isolated from sea urchin eggs is a sperm receptor. *Gamete Research* 15:337-359.

Acevedo, M. E., E. J. Carroll, Jr., and R. L. Heath. (1982). Sea urchin cleavage is inhibited by ozone. *Gamete Research* 6:209-213.

### **Book Chapters**

Nicosia, S.V., Nicosia, R.F., Saunders, B.O., Sun, X.Z., Pierri, E., Acevedo-Duncan, M., Mansuso, S. (1994) Control of papillogenesis in benign and malignant ovarian mesothelium. In 3rd Sapporo International Symposium on Ovarium Function. (J. Strauss, Fugimoto, S., eds) Cold Spring Harbor Laboratory Press, New York, N.Y.

Nicosia, S.V., B.O. Saunders, M. Acevedo-Duncan, S. Setrakian, and R. DeGregorio. (1991) Pathobiology of ovarian mesothelium. In: P.M. Motta (ed.) "Ultrastructure of the Ovary" Kluwer Academic

Carroll, E. J., Jr., M.. Acevedo-Duncan, W. R. Justice, and L. Santiago. (1986). Structure, assembly and function of the surface envelope (fertilization envelope) from eggs of the sea urchin, *Strongylocentrotus purpuratus*. In: J. L. Hedrick (ed.). "Molecular and Cellular Biology of Fertilization." Plenum Publishing Corp., New York. Publishers, MA

## Invited Papers

Aloe-emodin modulates PKC isozymes, inhibits proliferation, and induces apoptosis in U-373MG glioma cells. Presented at The International Aloe Science Council's Annual Scientific Seminar meeting. Las Vegas, NE. October 15, 2003 B October 19, 2003

## Abstracts

Acevedo-Duncan, M. and Patel, R. (2001) Identification of a 21 kD protein associated with human glioma PKC- $\alpha$ , PKC- $\beta$ II cdk7 and cdk2. Proc. of the American Association of Cancer Research

Acevedo-Duncan, M., Patel, R., Whelan, S. and Chiou, S. (2000) Cyclin dependent kinase activating kinase is a substrate for PKC- $\alpha$  and PKC- $\beta$ II. Proc. of the American Association of Cancer Research

Acevedo-Duncan, M., El-Najadawi, E., Bicaku, E., and Sandhu, S. (1999) Interaction of human glioma protein kinase C with cyclin dependent kinase activating kinase. Proc. of the American Association of Cancer Research. abstract #3324 p. 503.

Yamamoto, M., Acevedo-Duncan, M., Zhang, J., Chalfant, C.E., Patel, N., Watson, J.E., and Cooper, D.R. (1996) Regulation of protein kinase C in vascular smooth muscle cells: Possible involvement of  $\beta$ II isozymes in cell proliferation. Annual meeting of the Endocrine Society, New Orleans p A1518.

Yamamoto, M., Acevedo-Duncan, M., Zhang, J., Chalfant, C.E., Watson, J.E., and Cooper, D.R. (1996) The role of protein kinase C on proliferation of vascular smooth muscle cells. 10th International Congress of Endocrinology, San Francisco.

Acevedo-Duncan, M., Sosa, M., Gump, J., Docs, J., Fallon, P., Heal, A., Zachariah, B., and Greenberg, H. (1995) Effects of radiation on growth, protein kinase C and cell cycle of human glioma xenografts. Proc. of the American Association of Cancer Research 36:604a.

## Abstracts

Acevedo-Duncan, M., Gump, J., Zhang, R. and Greenberg, H. (1994) Interaction of radiation with glioma protein kinase C and cell cycle. Proc. of the American Association of Cancer Research 35:615a.

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J. Collins, M. Acevedo-Duncan, E. Haller, J. Vilorio, J. Gump and H. Greenberg. Ultrastructural translocation of glioma protein kinase C- $\alpha$  and - $\beta$  following interferon treatment. USF Faculty and Student Research Day. November 19, 1993.

Acevedo-Duncan, M., R. Zhang, P. Byvoet, J.E. Watson, and D.R. Cooper. (1993) Interferon modulates human glioma protein kinase C. Proc. of the American Association of Cancer Research 34:1052a

Acevedo-Duncan, M., D.R. Cooper, J.E. Watson, K.C. Roethzheim and M. Wiranowska. (1992) Effects of interferon on mouse glioma protein kinase C. The FASEB Journal 6: 4038a.

Acevedo-Duncan, M., K.C. Roethzheim and M. Wiranowska (1992) Glycosaminoglycans are modulated in-vitro by BCNU. Presented at Florida division of American Society in Orlando, FL.

Acevedo-Duncan, M., A.K. Naidu and S.V. Nicosia (1992) Regulation of protein kinase C and glutathione-S- transferase by epidermal growth factor in ovarian mesothelium cells. Proc. of the American Association of Cancer Research 33:1173.

M. Wiranowska, M. Acevedo-Duncan, and K.C. Roethzheim (1992) Effect of Interferon on glycoaminoglycans in glioma. The FASEB Journal 6:5750.

Nicosia, S.V., M. Acevedo-Duncan and B. Oliveros-Saunders. Effects of Protein and Steroid Hormones on growth and morphogenesis of ovarian mesothelium. (1990) American Society for Cell Biology, San Diego, CA.

Oliveros-Saunders, B., M. Acevedo-Duncan and S.V. Nicosia (1990) Purification and identification of intraluteal growth factors for ovarian surface epithelium. Presented at the American Cancer Society Florida regional meeting in Orlando, FL.

Vila, M. C., M. Acevedo-Duncan, D. R. Copper, M. Standaert, R. J. Pollet, and R. V. Farese. (1989). Evidence for protein kinase C activation and involvement in insulin action. Clin. Res. 37(1): 37a.

### **Abstracts**

Cooper, D. R., M. Acevedo-Duncan, M. C. Vila, J. Watson, T. Ishizuka, M. L. Standaert, R. J. Pollet, and R. V. Farese. (1988). Further evidence for protein kinase C activation and involvement during insulin-mediated glucose transport. Presented at the Joslin Diabetes Center. Harvard Medical School.

Acevedo-Duncan, M. and D. N. Silverman. (1985). Purification of carbonic anhydrase from

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Chlorella vulgaris and its catalysis of  $^{18}\text{O}$  exchange. J. Cell Bio. 101: 361a.

Acevedo-Duncan, M. E. and J. E. Carroll, Jr. (1983). Isolation of a sperm receptor polypeptide from the sea urchin vitelline envelope. J. Cell Bio. 97: 181a.

Acevedo, M. E. and E. J. Carroll, Jr. (1982). Isolation of a sea urchin egg surface envelope with sperm receptor activity and identification of a presumptive sperm receptor. J. Cell Bio. 95: 155a.

**Manuscripts Reviewed:**

Jin, Z., Xin, M., and Deng, X. (2005) Survival Function of PKC $\zeta$  as a Novel Nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone-activated Bad Kinase. Journal of Biological Chemistry.

Siwko, S., and Daria Mochly-Rosen (2005) Identification of M2 pyruvate kinase as a substrate of protein kinase C delta. BBA -Molecular Cell Research.

**Languages:** In order of proficiency; English, Spanish, and French

**Honors and Awards:**

Inhibiton Therapeutics, Inc.: \$900,000 (10/1/2005 – 9/31/2008)

The Oncologic Foundation of Buffalo: \$16,077 (6/22/05 – 6/21/06)

Foundation Grants - Various sources: \$14,175 (1/1/05 – present)

The Oncologic Foundation of Buffalo \$16,077 (5/24/2004 – 5/23/2005)

Abraham J. & Phyllis Katz Foundation \$40,000 (1/1/2004 -12/31/04)

Aloe Institute \$50,000 (4/11/2002 -6/1/2004)

**Honors and Awards:**

Foundation Grants - Various sources: \$7,700 (1/1/04 - 2/31/2004)

The Colon Foundation, Inc. \$10,000 (10/28/01-10/27/01)

The Krumholz Foundation \$12,000 (9/1/01 -9/1/04)

The Alma Jennings Foundation \$24,000 (3/1/01 - 2/28/04)

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Susan D. Camilli Foundation \$22,500 (1/13/01-1/12/04)  
The S.J. Fortin Foundation \$22,500 (1/01/01- 12/31/03)  
The W. Brooks Fortune Foundation \$30,000 (8/1/00 - 8/1/2003)  
The Sontag Foundation \$30,000 (11/14/00 - 11/13/03)  
Innovating Worthy Projects Foundation \$15,000 (12/1/98 - 4/1/2000)  
The Hardison Foundation \$30,000 (5/1/2000 - 5/31/2003)  
Gertrude E. Skelly Foundation \$15,000 (12/1/98 -12/31/2000)  
Goody Two Shoes Foundation \$15,000 (4/16/99 - 4/15/2001)  
USF Creative Research and Scholarship Award \$7500 (5/1/99 - 4/30/2000)  
Birk Family Foundation \$18,000 (4/16/99 - 4/30/2001)  
Foundation Grants - Various sources \$13,900 (1/1/2002 -12/31/02)  
Foundation Grants - Various sources \$9350 (1/1/2001 -12/31/2001)  
Foundation Grants - Various sources \$26,250 (1/1/2000 -12/31/2000)  
Veterans= Administration Merit Review Grant: \$71,100 (4/1/ 2001 - 3/31/2002)  
Veterans= Administration Merit Review Grant: \$401,100 (4/1/98 - 3/31/2001)

**Honors and Awards:**

Foundation Grants - Various sources \$9000 (1/1/99 - 12/31/99)  
Foundation Grants - Various sources \$7000 (1/1/98 - 12/31/98)  
USF Creative Research and Scholarship Award \$7500 (1/1/95 - 12/31/95)

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Parke Davis Research Award: \$5000 (May 1,1994-March 1995)

Society of Nuclear Medicine Research Award: \$5000 (May 1,1994-March 1995)

USF Travel Grant: \$1500 (January 1, 1995 - December 31, 1995)

Moffitt Cancer Research Award (\$60,000; June 1992-May 1994)

National Institute of Health Research Supplement for Minority Investigator (co-investigator, \$75,000; January 1991- June 1992)

Invitational speaker (1983), National Science Foundation - Women in Cell Biology Seminar at the American Society of Cell Biology.

Dissertation Award for Women and Minority Students (1983), University of California, Riverside.

Sigma-Xi Research Award (1983), University of California, Riverside.

Irwin Newell Travel Award (1982-1983), University of California, Riverside.

Irwin Newell Travel Award (1981-1982), University of California, Riverside.

Chancellor's Patent Fund Award (1981), University of California, Riverside.

Research Assistantship (1981-1983), University of California, Riverside.

Teaching Assistantship (1979-1983), University of California, Riverside.

Graduate Opportunity Fellowship (1977-1979), University of California, Riverside.

California State Scholarship and College Opportunity Grant (1973-1977), UC San Diego.

**Memberships:**

H.L. Moffitt Cancer Institute and Research Center (Molecular Oncology Program)  
Full member of the American Association for Cancer Research  
Full member of American Society for Cell Biology

**Experience/Committees:**

Department of Chemistry Undergraduate Committee (2002-Present) USF, Tampa  
President= Academic Advisor

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Ph.D. Accreditation Committee: (1996 to present), College of Arts and Sciences, University of South Florida, Tampa.

**Teaching:**

Fall 2005 Directed individual graduate research (Dept. of Chemistry)

Fall 2005 Directed individual undergraduate research (Dept. of Chemistry)

Summer 2005 Directed individual graduate research (Dept. of Chemistry)

Spring 2005 Directed individual graduate research (Dept. of Chemistry)

Summer 2004 Directed individual graduate research (Dept. of Chemistry)

Spring 2004 Directed individual graduate research (Dept. of Chemistry)

Fall 2003 Directed individual graduate research (Dept. of Chemistry)

Fall 2003 Chemistry 2045 Sections 5 and 7

Fall 2003 Directed individual undergraduate research (Dept. of Biology and Honors College)

Summer 2003 Directed individual graduate research (Dept. of Chemistry)

Spring 2003 Directed individual undergraduate research (Dept. of Biology)

Fall 2002 Directed individual undergraduate research (Dept. of Chemistry)

Spring 2000 Directed individual undergraduate research (Dept. of Chemistry)

Spring 2000 Directed individual undergraduate research (Dept. of Biology)

Fall 1999 Directed individual undergraduate research (Dept. of Biology).

**Mentor:**

Spring 2005 to present: Diondra Hill, USF, Upper Division Undergraduate Student

Fall 2004 to present: Hla Win, USF, Ph.D. Graduate Student.

Summer 2004 to present: Quentin McAfee, USF, Upper Division Undergraduate Student

Fall 2002 - Spring 2005: Chris Russell, USF, Ph.D. Graduate Student.

**Mentor:**

December 2004-Fall 2004, Diana Martinez, McNairs Scholars Program, Undergraduate Student.

Fall 1999-present: Aaron Mathews, USF, Ph.D. Graduate Student.

Summer 2003: Jebhar Patterson, NIH High School Minority Program

Summer 2003: Ronda Sawyer, Minority Bridge Program Undergraduate Student

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August 2002 - present: Sapna Patel, USF, Undergraduate Student .

]May 1998-August 30, 2003: Elona Bicaku, USF, Undergraduate Student.

Summer 2002 - Summer 2003: Melissa Armas, McNairs Scholars Program, Undergraduate Student.

Spring 1996-June 2002: Stephen Whelan, USF, Ph.D. Candidate (Graduate Student)

Summer 2002: Rebecca Pomalez, Minority Bridge Program Undergraduate Student

Fall 2002 to present: Sapna Patel, lower division undergraduate student

Summer 2002: Ivelisse Rivera, NIH High School Minority Program

Summer 2001: Sarah A. Shaw, Minority Bridge Program Undergraduate Student

Summer 2001: Janese Trimaldi, Minority Bridge Program Undergraduate Student

Summer 2001: Ramona Quillet, NIH High School Minority Program

Summer 2000: Jessica Ortiz, Minority Bridge Program Undergraduate Student

Fall 1999-2000: Andrea Nicole M<sup>c</sup>Cray, USF Undergraduate Student

Summer 1994-1995: Andrea Nicole M<sup>c</sup>Cray, NIH High School Minority Program

Summer 1999: Kaltrina Bariliu, NIH Undergraduate Internship Program

Summer 1994: Julie Guttman, first year medical student.  
USF Summer Research Program.

**Mentor:**

Summer 1993: John Collins, first year medical student.  
American Cancer Society Summer Research Program

**Experience/Research:**

Assistant Professor (1991-2005): My current research focuses on understanding how protein kinase C (PKC) isozymes regulate cell growth, proliferation and the cell cycle. Protein kinase C is a family of eleven isozymes which are phospholipid dependent serine/threonine kinases found in varying ratios in the cytosolic and membrane fractions of cells depending on the type of tissue and its physiological state. Protein kinase C regulates cellular functions, metabolism and proliferation by phosphorylating proteins in response to transmembrane signals from hormones, growth factors, neuro-

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transmitters and pharmacological agents. Protein kinase C is the major receptor for tumor promoting phorbol esters, but the extent of PKC involvement in cellular malignancy is not clearly defined. Various studies indicate that increased tumorigenicity is associated with dysregulation of PKC activity, from changes in PKC concentration, or from both. To establish how PKC isozymes control cell proliferation, I have developed in-vitro and in-vivo glioma models to examine how PKC and PKC modulators (including interferon and radiation) affect the cell cycle during glioma growth and development. High grade gliomas are highly lethal tumors and the median survival is less than one year for patients with these tumors. Overproduction of PKC has been functionally linked with the rapid growth rates of gliomas. Therefore, identification of cell cycle phases where PKC isozymes are functioning, will permit us to search for PKC substrates regulated by phosphorylation and may provide ways of controlling proliferation in these cells.

Postdoctoral Research Associate: (1989-1991)

To investigate if the hormonal environment may trigger morphogenetic events leading to the genesis of pseudoneoplastic papillae 5 month-old NZW rabbits were implanted with dose release pellets containing either hFSH, hLH, oPrI, estradiol-17B, progesterone, testosterone or vehicle alone. After 28 days one ovary from each animal was removed and processed for scanning electron microscopy to quantitate ovarian mesothelium papillae. The data showed selectively influence on the growth and morphogenesis of the ovarian mesothelium by the hormonal environment.

Postdoctoral Research Associate: (1987-1988)

Purified rat brain protein kinase C by DEAE and phenyl sepharose columns. Autophosphorylated protein kinase C polypeptides. Produced antibodies to protein kinase C polypeptides in rabbits. Conducted experiments using BC3H-1 myocytes, insulin and immunoblotting to demonstrate the involvement of protein kinase C in insulin action.

### **Experience/Research:**

Postdoctoral Research Associate: (1986)

1. Investigated the role of dolichyl phosphate in the estradiol induced regulation of the egg yolk phosphoglycoprotein, vitellogenin. Worked on establishing primary cell cultures of male *Xenopus laevis* hepatocytes to monitor the glycosylation status of vitellogenin by pulse-chase experiments.

2. Cloned ovomucoid cDNA in order to perform fusion to the human heat shock promotor and transfect Hela cells to generate a cell line in which ovomucoid glycosylation could be regulated. Department of Biochemistry, University of South Florida, Tampa, FL.

Research Assistant: (June 1981 - December 1983)

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Developed an isolation procedure which increased the yield of an operationally defined vitelline envelope and permitted envelope elevation without degradation of the sperm receptor. Isolation, characterization and immunological evidence for a vitelline envelope sperm receptor. Department of Biology, University of California, Riverside.

Teaching Assistant: (January 1978 - June 1983)

Prepared and taught laboratory exercises for introductory courses in embryology, cell, organismal, and population biology. Designed and prepared discussion sessions for developmental biology and genetics. Prepared tests, graded term papers and tests. Except for population biology, I taught these courses at least twice. Department of Biology, University of California, Riverside.

Graduate Council Representative: (1981 - 1982)

Department of Biology, University of California, Riverside.

Data Analysis: (1981)

Worked on finite element program of the human brain and skull which could predict the intracranial response of the brain to arbitrary head motions and impacts. Biodynamics Engineering, Inc., 860 Via de La Paz, Pacific Palisades, California.

Biological Technician: (June 1979 - August 1979) Analyze traffic-related injury records from autopsy reports in order to establish protection regulations to prevent death and reduce injuries. Civil Engineering Laboratory, Material Science Division, CBC, Port Hueneme, California 93043.

### **Experience/Research:**

Biological Technician: (August 1978 - September 1978)

Assisted in collecting samples and analyzing primary films on surfaces placed in marine water. Rated the nature and extent of biological microfouling on test panels in Port Hueneme harbor. Civil Engineering Laboratory, Material Science Division, CBC, Port Hueneme, California 93040.

Independent Study: (September 1976 - December 1976)

Research was carried out to determine whether cells labeled as S-B were the same or different from S-epithelium Leydig cells which originated from mouse testis. To identify

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these cells, the basic techniques of tissue culture were learned i.e., subculturing, single cell plating, cloning, and setting up growth curves with emphasis on the role of hormones in replacing serum in tissue culture. This research was performed in Gordon H. Sato's laboratory and under the direction of Jenny Mather. Department of Biology, Revelle College, University of California, San Diego, California.

Physical Science Technician: (June 1975- September 1975)

Prepared synthetic sewage, agar plates, bacterial dilutions, plating, and counting bacteria for a water filtering and recycling system for Guantanamo Bay, Cuba. Civil Engineering Laboratory, Materials Science Division, CBC, Port Hueneme, California.

Student Aid: (September 1974 - December 1974)

Anesthetized and dissected rats to weigh various organs and removed their membranes. This project used radioactive isotopes to trace cancerous cells in white rats in order to examine the possibilities of using the same techniques to detect early stage cancerous cells in humans. Nuclear Medicine, Veterans Hospital, La Jolla, California 92037.