M E M O R A N D U M

Agenda Item 15(C)2

TO: Honorable Chairman Jose "Pepe" Diaz and Members, Board of County Commissioners

DATE: September 1, 2022

FROM: Honorable Harvey Ruvin, Clerk
Circuit and County Courts

Basia Pruna, Director
Clerk of the Board Division

SUBJECT: Reappointment of Dr. Rose Mary Stiffin to serve as a member of the Environmental Quality Control Board (EQCB)

It is recommended that the Board consider the reappointment of Dr. Rose Mary Stiffin to the Environmental Quality Control Board (EQCB). Dr. Stiffin's term expired on May 7, 2022.

The Miami-Dade County Code provides that the Board of County Commissioners appoint one (1) member to the Environmental Quality Control Board who is scientist possessing a master's or Ph.D. degree in biochemistry or chemistry, Dr. Stiffin has been awarded a Ph.D. in biochemistry and is being recommended by Mayor Daniella Levine Cava as a qualified candidate for reappointment.

The memorandum from Mayor Daniella Levine Cava and resume of Dr. Rose Mary Stiffin, are attached for your review.

BP/sj
Attachments

Memorandum

Date: July 8, 2022

To: Harvey Ruvin
Clerk of the Board

From: Daniella Levine Cava
Mayor

Subject: Re-appointment to the Environmental Quality Control Board by the Board of County Commissioners

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Please find attached the resume of Ms. Rose Mary Stiffin, Ph.D. for consideration by the Board of County Commissioners (Board) for reappointment to the Environmental Quality Control Board (EQCB). Dr. Stiffin has requested to be reappointed to the EQCB. The Board must grant approval of her reappointment for each successive three year term. Dr. Stiffin's current term expired May 7, 2022.

The EQCB is a quasi-judicial board that rules on variance requests for highly scientific and technical matters under the Environmental Protection Ordinance, Chapter 24 of the Code of Miami-Dade County. The composition and membership of the EQCB requires advanced degrees and qualifications unique to environmental disciplines.

Dr. Stiffin has a Ph.D. in Biochemistry and has served with distinction since 2019. Her service is greatly appreciated.

Based on the above, please schedule this re-appointment before the Board as soon as possible.

Thank you for your attention to this matter.

Attachment

CURRICULUM VITAE

NAME: ROSE MARY STIFFIN

TITLE: Chair
School of Health and Natural Sciences
Florida Memorial University
15800 NW 42ND Avenue
Miami Gardens, Florida 33055

OFFICE ADDRESS: Division of Health and Natural Sciences
Florida Memorial University
15800 NW 42nd Avenue
Miami Gardens, Florida 33054

E-MAIL ADDRESS: rstiffin@fmuniv.edu

ACADEMIC DEGREES:

B.A.	1978	Mississippi Valley State University (Chemistry)
M.S.	1981	Mississippi State University (Organic Chemistry)
Ph.D.	1995	University of Tennessee, Memphis (Biochemistry)

PROFESSIONAL APPOINTMENTS:

1981 – 1984	Research Chemist, Dow Chemical Company, Freeport, Texas
1984 – 1986	Supervisor, Fructose Department, Cargill, Inc., Memphis, Tennessee
1986 – 1987	Research Associate, Pharmacokinetics Department, St. Jude Children's Research Hospital, Memphis, Tennessee
1991 – 1992	Adjunct Faculty, Natural Sciences Department, Shelby State Community College, Memphis, Tennessee
1995 – 1998	Postdoctoral Fellow, Department of Virology & Molecular Biology, St. Jude Children's Research Hospital, Memphis, Tennessee
1998 – 1999	Assistant Professor of Chemistry, Rust College, Holly Springs, Mississippi
1999 – present	Associate Professor of Chemistry, Florida Memorial College, Miami, Florida
2001 – Summer, 2003	Interim Chair for the Division of Natural Sciences and Mathematics
Summer, 2003 – 2005	Chair, Division of Natural Sciences

Fall, 2005 – Fall, 2006 Interim Dean of the School of Health and Natural Sciences

Fall, 2007 Dean, School of Health and Natural Sciences

Fall, 2008 - present Chair, Division of Health and Natural Sciences (reorganization)

AWARDS:

1. Recipient of National Science Foundation Fellowship (1978)
2. Recipient of National Institutes of Health Fellowship (1991)
3. Recipient of Competitive Institutional Research Service Award (NRSA) from the National Cancer Institute (1994)
4. Recipient of an Individual National Research Award (NRSA) from the National Cancer Institute for the grant entitled 'Function of EBNA-3C during EBV Transformation of B Cells' (1997)
5. Recipient of 'The Most Outstanding Instructor' Awards in (2000,2001, and 2002)
   The Division of Natural Sciences and Mathematics
6. Recipient of a Merck Scholarship to Do Research at Spelman College (Summer, 2002)
7. Liaison for the ADVANCE program for the advancement of (minority) women in the SMET curricula established at Clark-Atlanta University Center.
8. Recipient of Black Achiever of the Year Award, FCAA 2005
9. Participant in Materials Science Workshop, sponsored by the University of Alabama (Tuscaloosa) School of Metallurgical and Mechanical Engineering and funded by the National Science Foundation. (June, 2007)
10. Performed original research at Pennsylvania State University (State College) in Summer, 2009, in Dr. Andrea Mastro's group, on the cellular markers von Willebrand Factor and CD41 on megakaryocytes in bone marrow.
11. Performed original research at Pennsylvania State University (State College) in Summer, 2010, in Dr. Andrea Mastro's group, on the cellular markers von Willebrand Factor and CD41 on megakaryocytes in bone marrow.
12. Invited speaker at the First Biennial Conference on Prostate Cancer Disparities (Jacksonville, Florida , August 27 – 29, 2010).

GRANTS/PATENTS RECEIVED:

NSF – HBCU-UP: A Strategic Plan for the Successful Participation of Minority Students in Science, Mathematics, Engineering and Technology. Funded for 6/04-5/05.

NNSA – Development of Educational Programs to Create a Long-term Supply of Highly Trained Radiochemists. Funded for 207 – 2010

"The Enhancement of the Radiochemistry Program at Florida Memorial University by Infrastructural and Educational Improvements" Nuclear Regulatory Commission, 2008

"The Expansion of the Nuclear Undergraduate Education Program and Infrastructure at Florida Memorial University by Course and Research Development in Radiobiology and Radiopharmacology" (2009)

US Nuclear Regulatory Commission Funding Opportunity Announcement, Scholarship and Fellowship Education Grant (for Enhancement of Radiobiology Program), FY 2010. Funded, summer 2010

0,0-DIALKYL O[P-(N-ALKYLCARBAMOYL)PHENYL]
PHOSPHOROTHIONATES AND INSECTICIDAL COMPOSITIONS
INCLUDING THE SAME
Rose Mary Stiffin, William E. McHenry
Patent Number: 4,626,528

A new inhibitor scaffold for the inhibition of the enzyme phospho*enol*pyruvate carboxykinase
WO 2009089541 A3 (2014)
Rose Mary Stiffin, Gerald Carlson, Todd Holyoak, Sarah Sullivan

"Targeted Infusion Project - Upgrade Physics Lab Technology Infrastructure and Develop Supplemental Instruction and Summer Undergraduate Research," is under the direction of Ayivi G. Huisso, Dimitri Tamalis, Rose M. Stiffin, Marilyn L. Sherman (2014)

"MaSTEC TF/MTF Capacity Building Project"
Florida Memorial University
Thelma C Lawton, Abass Zadegan, Mildred Berry, Rose Stiffin
MaSTEC TF/MTF Capacity Building ProjectFlorida Memorial University is partnering with Miami-Dade County Public Schools (M-DCPS) in a capacity building project to develop a full Robert Noyce Teaching Fellowship and Master Teaching Fellowship (TF/MTF) project (2013).

NEW INITIATIVES/PROGRAMS/GRANTS

1. O,O-Dialkyl-O-[p-N-alkylcarbamoyl)phenyl]-phosphonothionates and insecticidal compositions PATENT NUMBER 4626528. Rose Mary Stiffin, William Earl McHenry.
2. Developed the course Introduction to Chemistry for science majors who are take remedial classes in reading, mathematics, and writing, in order to introduce the student to the world of science and make the transition from remedial classes to major and upper level classes smoother.

3. Developed a new program, Chemistry with a concentration in Radiochemistry, to aid in the amelioration of the national deficit of qualified (minority) radiochemists and nuclear chemists.
4. Initiated Peer-tutoring Program in which students enrolled in Chemistry, Mathematics, Pre-Engineering, and/or Biology tutor students in the gate-keeper courses.
5. Developed liaison with The Scripps Research Institute in Jupiter, Florida, ostensibly to accept and train students in undergraduate research projects.
6. Submitted a grant in July, 2008, to the Department of Defense entitled Risk Assessment and Evaluation of Diabetes-inducing Activities of Bisphenol A.
7. Developed a relationship with the University of Texas (Austin) for training faculty and students in nuclear/radiochemistry with Dr. Sheldon Landsberger, our consultant for the NNSA grant.
8. Submitted proposal entitled MRI: Acquisition of Chromatographic and Spectrophotometric Equipment for the Sustainability of Synthetic Organic Chemistry Using Green Chemistry Concepts for possible funding by NSF (2008).
9. GUESS (Getting Undergraduates Excited and Stimulated for Success) in STEM, submitted in August, 2009, to the National Science Foundation for the I^3 grant.
10. US Nuclear Regulatory Commission Funding Opportunity Announcement, Scholarship and Fellowship Education Grant (for Enhancement of Radiobiology Program), FY 2010. Funded, summer 2010.
11. Inhibitor scaffold for the inhibition of the enzyme phospho*enol*pyruvate carboxykinase PATENT NUMBER: 8673584. **Rose Mary Stiffin**, Gerald Carlson, Todd Holyoak, Sarah Sullivan.

PUBLICATIONS:

Original Articles

1. **Stiffin, RM**, McHenry, WE, Fisher, TH, and Alley, EG. A Promising Series of Toxicants for the Imported Fire Ant. *J. Agri. Food Chem.* 30: 1042 – 1045, 1982.

2. Wainer, IW & **Stiffin, RM**. Resolution of Enantiomeric Aromatic Alcohols on a Cellulose Tribenzoate High-performance Liquid Chromatography Chiral Stationary Phase. *J Chromatography* 411: 139 – 151, 1987.

3. Wainer, IW & **Stiffin, RM**. Direct Resolution of the Stereoisomers of Leucovorin and 5-Methyltetrahydrofolate Using Bovine Serum Albumin High-performance Liquid Chromatography Chiral Stationary Phase Coupled to an Achiral Phenyl Column. *J Chromatography* 424: 158 – 162, 1988.

4. Marshall, DR, **Stiffin, RM**, and Sample, CE. Three conserved regions of the Epstein-Barr Virus nuclear protein 3C Jκ-binding domain contribute to a stable interaction with Jκ. *J. Virology* (1998).

5. Doing Green Chemistry at an Historically Black University, submitted to *Journal of Chemical Education* (2006).

6. **Rose Mary Stiffin**, Sarah M. Sullivan, Gerald M. Carlson, and Todd Holyoak Differential Inhibition of Cytosolic PEPCK by Substrate Analogues. Kinetic and Structural Characterization of Inhibitor Recognition *Biochemistry*, 47 (7) 2099 – 2109, 2008.

7. Stiffin, Rose Mary, Kenneth Doxsee, James Hutchison, Mohammed Nayel, Cesar Ramirez, Alexandro Lima, duane Miller, Xiangming Kong, Wei Li **Synthesis, Partial Characterization and in vitro Anticancer Activity of Indanocine Analogues Bearing Indanone and Aldehyde Rings Putatively Targeting Tubulin** *Proceedings of World Congress on Cancer Research & Therapy* (November, 2016).

8. **Rose Mary Stiffin**, Jana Miles, Andrea Mastro, Donna Sosnoski, and Yu-Chi Chen The role of megakaryocytes in breast cancer metastasis to bone *Infect Agent Cancer.* 2011; 6 (Suppl 1): A7

Book Chapters

1. Wainer, IW, **Stiffin, RM**, and Chu, Y.-Q. Drug Analysis Using HPLC Chiral Stationary Phase. In: Stevenson D, Wilson, ID, Eds. Chiral Separations. Plenum Publishing Company.

Abstracts, Posters, and Oral Presentations

1. Synthesis of Novel Indenones as Potential Anticancer Drugs Travieso, Josy, Rose Stiffin Annual Molecular and Cellular Biology Symposium, April, 2015.
2. Stiffin, RM & Carlson, GM. Mapping the Nucleotide-binding Site of Rat Liver Cytosolic Phospho*enol*pyruvate Carboxykinase (GTP), Poster Session and Program Abstracts, 75th Annual Meeting of FASEB, April, 1991.

3. Stiffin, RM & Carlson, GM. Inhibition of Phospho*enol*pyruvate Carboxykinase (GTP) by Analogues of Phospho*enol*pyruvate and Oxaloacetate. *The FASEB J.* 7:73. 1993.

4. Luo, T, Stiffin, RM, Foster, JL, and Garcia, JV. Nef is Phosphorylated in Mammalian and Insect cells, Poster Session and Program Abstracts. Keystone Meeting, Taos, New Mexico, 1995.

5. Marshall, DR, Stiffin, RM, and Sample, CE. Mutational Analysis of the Conserved Domain of EBNA-3C. 21st Herpesvirus Workshop at Northern Illinois University in Dekalb, Illinois, 1996.

6. Stiffin, Rose Mary and Snowden, Thomas E. Do Common Spices Exhibit Antimicrobial Properties? Annual FGLSAMP Expo, Daytona Beach, Florida (January, 2001).

7. Stiffin, Rose Mary, The Water Quality of The Florida Memorial Lagoon and the Biscayne Bay Canal Annual FGLSAMP Expo, Tallahassee, Florida (January, 2002).

8. Stiffin, Rose Mary, A Theoretical Question: Can PEP-utilizing Enzymes be inhibited by a common set of reversible inhibitors? Annual FGLSAMP Expo, Tallahassee, Florida (January, 2002).

9. Hibbard, L., Clark, Cecilia, Stiffin, Rose Mary The Fluorometric and Circular Dichroism Studies of □- and □-crystallin as a function of Temperature, Salt and Acrylamide Concentration Spelman College, Atlanta, Georgia, 2002.

10. Raphael, Rachel and Rose Mary Stiffin, The Thermodynamic Aggregation of □- and □-crystallins and the Chaperone Activity of □-crystallin. 2003 FGLSAMP Expo, University of South Florida, Tampa, Florida.

11. Dennis Johnson, Olayeni Akinboyewa, Orin Wiltshire, and Rose Mary Stiffin, Doing Green Chemistry at an Historically Black College. 2003 FGLSAMP Expo, University of South Florida, Tampa, Florida.

12. Dionne Cozier, and Rose Mary Stiffin, The Active Site of Rat Liver Phospho*enol*pyruvate Carboxykinase and Molecular Modeling of Inhibitors Oral Presentation at SERMACS (2003) Atlanta, Georgia.

13. Orin Wiltshire and Rose Mary Stiffin, Doing Green Chemistry at an Historically Black College at SERMACS (2003) Atlanta, Georgia and Florida-Georgia Louis Stokes Alliance for Minority Participation (Miami, Florida) Expo, 2004.

14. Dionne Cozier and Rose Mary Stiffin, The Characterization of the Active Site of Rat Liver Cytosolic Phospho*enol*pyruvate Carboxykinase (GTP) Using Reversible Inhibitors and the Use of MOE to Prove Binding Theory. (2004) Florida-Georgia Louis Stokes Alliance for Minority Participation (Miami, Florida) Expo, 2004.

15. Tricia Alexander and Rose Mary Stiffin, The Characterization of the Active Site of Rat Liver Cytosolic Phospho*enol*pyruvate Carboxykinase (GTP) Using Irreversible Inhibitors and the Use of MOE to Prove Binding Theory. (2004) Florida-Georgia Louis Stokes Alliance for Minority Participation (Miami, Florida) Expo, 2004.

16. Alexander, Tricia, Mandisa Edwards, Trevis Huggins, and Rose Mary Stiffin, The Solventless Synthesis of 5, 10, 15, 20 Tetraphenylporphyrin, Its Partial Characterization and Metallation (2005) Florida-Georgia Louis Stokes Alliance for Minority Participation (Orlando, Florida) Expo, 2005.

17. Williams, Shannon, Sean Cranford, and Rose Mary Stiffin, The Solventless Aldol Condensation (2006) Florida-Georgia Louis Stokes Alliance for Minority Participation (Albany, Georgia).

18. Rose Mary Stiffin, Women in Science and Technology in Africa, The Foundation for Democracy in Africa (July, 2006)

19. Rose Mary Stiffin, The Shortage of Women and Minorities in Science, Technology, Engineering, and Mathematics (March, 2007).

20. Rose Mary Stiffin, Todd Holyoak, and Gerald M. Carlson Title: "Differential Inhibition of Cytosolic PEPCK by Substrate Analogues. Kinetic and Structural Characterization of the Mechanisms of Inhibitor Recognition" Midwest Regional Meeting (November 7 – 10, 2007).

21. Sheldon Landsberger (University of Texas at Austin), Rose Mary Stiffin (Florida Memorial University), Dimitri Tamalis (Florida Memorial University), Michael Elliott (Florida Memorial University), Ayivi Huisso (Florida Memorial University) "Establishment of Undergraduate Radiochemistry at Florida Memorial University: A Cooperation with the Nuclear and Radiation Engineering Program at the University of Texas at Austin" 1377 *American Society for Engineering Education* (ASEE) 2008 Pittsburgh, Pennsylvania.

22. Rose Mary Stiffin, Simidele Okanlami, Rene Williams, Anna Major, Shadelle London, Jillian Braynen, Jillian Braynen "The Green Synthesis of a Family of Potential Anti-HIV Drugs: (2Z) – 2 – [(Dimethoxyphenyl) methylidene] – 3H – Inden – 1 – ones" 2009 FGLSAMP Expo, University of Miami, Miami, Florida (January, 2009).

23. Dimitri Tamalis, Rose Mary Stiffin, Michael Elliott, Ayivi Huisso, Sheldon Landsberger "Establishment of an Undergraduate Research and Training Program in Radiochemistry at Florida Memorial University, an HBCU." SAAGAS, Vienna, Austria (February, 2009 and CONTE, Jacksonville, Florida, February, 2009).

24. Rose Mary Stiffin, GUESS (Getting Undergraduates Excited and Stimulated for Success) at the 23rd Annual Biomedical Symposium on Careers in Health Sciences

and the Association of Minority Health Professions Schools (Louisville, Kentucky, April 1 – 2, 2009).

25. Establishment of an Undergraduate Research and Training Program in Radiochemistry at Florida Memorial University, a Historically Black College or University (HBCU) American Institute of Physics -- August 19, 2009 -- Volume 1164, pp. 40-44
8TH INTERNATIONAL CONFERENCE ON METHODS AND APPLICATIONS OF RADIOANALYTICAL CHEMISTRY: MARC-VIII; Dimitri Tamalis,[a] Rose Mary Stiffin,[a] Michael Elliott,[a] Ayivi Huisso,[a] Steven Biegalski,[b] and Sheldon Landsberger[b]
[a]Florida Memorial University, Division of Health and Natural Sciences, Miami Gardens, Florida 33054 USA, [b]University of Texas at Austin, Nuclear Engineering Teaching Lab., R-9000 Austin, Texas 78712 USA.
26. Jana Miles, Jasmin Evangelista, Katherine Centeno, Rose Mary Stiffin "The Role of CD41+ and von Willebrand Factor+ Megakaryocytes in Bone Marrow of Nude, Athymic Mice Injected with Metastatic and Non-metastatic Breast Cancer Cells", FGLSAMP Expo, February 26 – 28, 2010 (Second Prize in Oral Presentation in Chemistry).
27. Simidele Okanlami and Rose Mary Stiffin, "The Antibacterial Properties of a Series of (2Z) – 2 – [(Dimethoxyphenyl) methylidene] – 3H – Inden – 1 – ones" FGLSAMP Expo, February 26 – 28, 2010.
28. Stiffin RM, The Role of Megakaryocytes in Breast Cancer Metastasis to Bone Proceedings Publication of the Science of Global Prostate Cancer Disparities in Black Men, *Journal of Immigrant and Minority Health* (September, 2011).
29. Stiffin, Rose Mary, Kenneth Doxsee, James Hutchison, Mohammed Nayel, Cesar Ramirez, Alexandro Lima, Duane Miller, Xiangming Kong, Wei Li **Synthesis, Partial Characterization and in vitro Anticancer Activity of Indanocine Analogues Bearing Indanone and Aldehyde Rings Putatively Targeting Tubulin** *Proceedings of World Congress on Cancer Research & Therapy* (November, 2016).
30. Karece Webster, Andrea Mastro, Diarra Dia, and Rose Mary Stiffin The Role of Megakaryocytes in Cancer Metastasis using Mouse Model RELPAD, 2017, Second Prize.
31. Brittney Osborne, Caesar Ramirez, Xiangming Kong, and Rose Mary Stiffin Synthesis and Characterization of Halogenated Apsirin Analogues as Potential Herbicides RELPAD, 2017, First Prize
32. Stiffin, Rose Mary, **Diarra Dia** The Solid State Syntheis of tentative Anticancer Agents Life Sciences of South Florida, March, 2017 Third Proze.
33. Stiffin, Rose Mary, Diarra Dia, Mohammed Nayel, Cesar Ramirez, Xiangming Kong, and Wei Li **Project –based learning: Synthesis, Partial Characterization and in vitro Anticancer Activity of Indanocine Analogues Bearing Indanone and Aldehyde Rings Putatively Targeting Tubulin** *Proceedings of World Congress on Breast Cancer Research & Therapy* (Valencia, Spain July, 2018).

Skills:

Protein chemistry: function, radio-labeling (^{35}-S and ^{32}-P isotopes) of cells *in vivo* and *in vitro*. Enzymology: assays, kinetics, covalent modification. Analytical Chemistry: HPLC, TLC, UV-Vis; Proton NMR; IR. Cellular Biology and Molecular Biology: transfection of bacterial, yeast, and mammalian cells with foreign DNA; infection of cells with virus; DNA isolation and sequencing; RNA isolation. Tissue culture: FACS analysis; maintenance of different cell lines in culture. Electrophoretic techniques: SDS-PAGE; immunoprecipitation; immunohistochemistry; hematoxylin and eosin histological staining, tissue sectioning, Western blot analysis. Organic Synthesis: synthesis and characterization of novel pesticides; synthesis and characterization of low molecular weight epoxy resins. Organic Syntheses, using Green Chemistry techniques. Spectroscopic techniques using Circular Dichroism and fluorometric spectrophotometers. Computer Skills: Word Perfect; Microsoft Word.

Current Research Interests:

During the course of evolution, enzymes became more highly specialized in the reactions they catalyzed. Evidence of this fine-tuning and specialization is seen in gluconeogenesis and glycolysis. Enzymes such as enolase, phosphoenolpyruvate carboxykinase (PEPCK), and pyruvate kinase can utilize the same substrates or give rise to the same products. This suggests, therefore, that these enzymes may be inhibited by similar substrate analogues. I and others have shown that PEPCK and enolase may be inhibited by similar compounds, as well as PEPCK and pyruvate kinase. I would like to test this theory further by doing inhibition and kinetic studies on pyruvate carboxylase and phospho*enol*pyruvate carboxylase, as well as oxaloacetate decarboxylase.

Additionally, Green Chemistry practices in the laboratory have essentially eclipsed so-called traditional organic chemistry synthetic routes. I have expanded on several key laboratories and made them into research projects for students, such as the synthesis and subsequent metallation of porphyrin rings, and the solventless preparation of aldols.

Recently, industries involved in production of plastics and plasticizers have come under fire due to the controversy surrounding the use of bisphenol A and its derivatives/metabolites. Although the data are controversial or inconclusive, many studies have shown that these so-called endocrine disrupting chemicals (EDC's) may induce such diverse diseases as dementia, leukemia, and diabetes. Thus, my interest has broadened to include studies of diabetes development as a function of bisphenol A exposure in animals.

These projects could easily integrate and complement current research by other faculty. Further, as my interests are diverse, I can modify any that may require additional funds or start up monies.

Lastly, using the philosophies extolled in Green Chemistry, I have synthesized and initially characterized a series of 1- and 2 – indenone derivatives (synthesized vial aldol

condensation) that have shown both antifungal and antibacterial activity. We submitted them to the National Cancer Institute and have shown that some of them show great promise as anticancer drugs; we seek more information on their mechanism of action by forming collaborations with other institutes.