



MEMORANDUM

Agenda Item 15(C)(1)

TO: Honorable Chairman Oliver G. Gilbert, III
and Members, Board of County Commissioners

DATE: December 12, 2023

FROM: Honorable Juan Fernandez-Barquin
Clerk of the Court and Comptroller

SUBJECT: Appointment of M. Reza Savabi, Ph.D.
and Daniel Flagler, Ph.D. to the
Environmental Quality Control Board
(EQCB)

Basia Pruna, Director
Clerk of the Board Division

It is recommended that the Board consider the appointment of Dr. M. Reza Savabi, Ph.D., and Dr. Daniel Flagler, Ph.D., to serve as members of the Environmental Quality Control Board (EQCB).

The EQCB is a quasi-judicial board created by Ordinance No. 69-30. The membership of the EQCB was recently amended by Ordinance No. 21-125, increasing the number of members from five to seven. Dr. Savabi and Dr. Flagler's appointment will fill the two (2) vacancies created by this ordinance.

Dr. Savabi has a Ph.D. in Hydrology, and Dr. Flagler has a Ph.D. in Biomedical Engineering, and they each meet the required qualifications for members of the Environmental Quality Control Board, as outlined in the attached memoranda.

Mayor Levine Cava's memorandums, the curriculum vitae of Dr. Savabi and the resume of Dr. Flagler are attached for your review.

BP/nj
Attachment

MDC001

3:19 pm, 11/17/2023

CLERK OF THE BOARD

Memorandum



Date:

To: Juan Fernandez-Barquin
Clerk of the Courts and Comptroller

From: Daniella Levine Cava
Mayor

A handwritten signature in blue ink that reads "Daniella Levine Cava".

Subject: Appointment to the Environmental Quality Control Board by the Board of County Commissioners

Please find attached the resume of Mr. M. Reza Savabi, Ph.D. for consideration by the Board of County Commissioners (Board) for appointment to the Miami-Dade County Environmental Quality Control Board (EQCB). Members of the EQCB are appointed by the Board pursuant to Sec. 24-8 of the Code of Miami-Dade County (Code).

The EQCB is a quasi-judicial board created by Ordinance No. 69-30 that convenes monthly to hear cases for variances from, or time extensions to comply with, the requirements of the Environmental Protection Ordinance (Chapter 24 of the Code of Miami-Dade County) and appeals from decisions of the Director of the Division of Environmental Resources Management in the Department of Regulatory and Economic Resources. The membership, terms of office, organization, duties and powers, and procedures which govern the EQCB are set forth in Chapter 24 of the Code.

The membership of the EQCB was recently amended by Ordinance No. 21-125, increasing the number of members of EQCB from five to seven. Dr. Savabi's appointment will fill a vacancy created by this ordinance.

The EQCB is composed of seven members appointed by the Board. Members serve staggered three-year terms. Quorum requires a majority of members duly appointed to the EQCB, and four votes are required for certain types of cases within specific wellfield protection areas. Due to the highly scientific and technical nature of the matters that the EQCB reviews, the members of the EQCB are required to have advanced scientific or engineering qualifications as follows:

- a) Two members shall be scientists possessing a master's or Ph.D. degree in biology or marine biology.
- b) One member shall be a scientist possessing a master's or Ph.D. degree in biochemistry or chemistry.
- c) Two members shall be licensed professional engineers in the field of chemical, civil, or environmental engineering or in lieu of one licensed professional engineer, one member may have a Ph.D. degree in chemical, civil or environmental engineering or one member may be a licensed professional geologist with certain qualifications, including a Ph.D. degree.
- d) Two members shall qualify as one of the following: a scientist possessing a master's or Ph.D. degree in biology, marine biology, biochemistry, or chemistry; or a licensed professional engineer in the field of chemical, civil, or environmental engineering.

Of the five current members, the EQCB has two members with a Ph.D. in biology, one member with a Ph.D. in biochemistry, one member is a Professional Engineer with a valid license issued by the Professional Board of Engineers in the State of Florida, and one member has a Ph.D. in civil engineering.

Dr. Savabi has a Ph.D. in Hydrology with extensive experience in surface and subsurface hydrology including evapotranspiration, flood control, irrigation methods, soil erosion, water balance, water quality and quantity, and use of statistical modeling, meets the qualifications to serve on the EQCB and is recommended for appointment. Due to the high volume of cases heard by the EQCB, the appointment of Mr. Savabi is necessary to avoid possible delays.

Attachment: Resume

VITAE

M. REZA SAVABI, Ph D, CH

Senior Research Hydrologist and Watershed System Modeler

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Cell 305-458-1756

Emails: rezasavabi@hotmail.com or akhosro1977@gmail.com

FEMA: reza.savabi@FEMA.DHS.GOV

U.S Citizen

EDUCATION

Ph.D. Watershed and Hydrology Science, Utah State University, Logan, Utah, GPA, 3.8/4.0

Thesis title: “Modification of the Universal Soil Loss Equation Under Simulated Conditions (Rainfall, plant cover, and trampling disturbances) For Use on Per-Storm Basis”.

M. S. Watershed Science, Utah State University, Logan, Utah, GPA, 3.8/4.0

Thesis Title: “Impact of Various Range Improvements on Watershed Protective Cover”.

M. S. Applied Statistics, Department of Applied Statistic and Computer Science. Utah State University, Logan, Utah, Lacking Master Thesis.

B. S. Range Science, Utah State University, Logan, Utah, GPA 3.9/4.0

Summary Accomplishments:

FEMA Work:

As of November 31, 2021, I joined the FEMA – EHP CORE Team. Prior to November 31, 2021, worked for FEMA as EHP-Reservist; As Environmental Protection Specialist, at Federal Emergency Management Agency (FEMA), I conducted several RSM, Site Inspection, and National Environmental Policy Act (NEPA) review concerning various environmental damages such as flooding, Debris, sewage lines, municipal water line, bridge, and roads and culverts. I had completed two deployments with satisfactory rating on all the elements. In addition, I successfully pass all the position required training online and/or classroom that include Executive orders 11988 and 11990: Floodplain Management and Protection of Wetlands (0727) Introduction to Environmental and Historic Preservation compliance (0253). Please see my FEMA-DTS task book and work experience.

Prior to retiring, I was working as a senior Research Hydrologist and System Watershed Modeler for the USDA-Agricultural Service. I have extensive background and publish numerous manuscripts (publications), research notes, project reports, model documentations, and book chapters on variety of subjects such as surface and subsurface hydrology including evapotranspiration, flood control, irrigation methods, soil erosion, water balance, water quality and quantity, and use of statistical modeling. From June 1997 to Sept 2009- I was project leader and Senior research hydrologist at the USDA-ARS, Everglades Agro-Hydrology project in Miami, Florida. I developed the Everglades Agro-Hydrology Computer (EAHM) model. Under a rainfall simulator, determined hydro- physical characteristics, and flooding potential of common soils as needed for application of hydrologic models in south Florida. Studied soil water balance, infiltration, hydraulic conductivity of Karsts Aquifer, and effect of composting on the fate and transport of agrochemicals including herbicides and pesticides and flooding potential under a rainfall simulator. Developed detail elevation, soil and land use for farm fields susceptible to periodic flooding in south Florida. Studied ground water flow, direction and quality near the Everglades National Park. I have been an adjunct professor at Univ. of Miami, Civil and Environmental Engineering Dept, and adjunct professor at the Dept. of Environmental Study and Geology, Florida International University. I am familiar with the Comprehensive Everglades Restoration Plan (CERP) and computer models being used in South Florida Ecosystem such as SFWMD-RSM, MODBRANCH, SFWMD-2X2. From 1986 to 1997, I was a Research Hydrologist and Watershed Modeler at USDA-ARS, West Lafayette, IN.: I developed , verified, and evaluated the USDA-Water Erosion Prediction Project (WEPP) water balance (including, evapotranspiration, percolation, plant water uptake, precipitation interception, infiltration routine, subsurface lateral flow, drain tile flow, soil temperature, and snowmelt routines. Developed a computer model to calculate WEPP needed soil hydrologic parameters using SOIL-5 data base and/or Map Unit Interpretation Record (MUIR). I have been the principal investigator and project leader of several cooperative project with USACE, South Florida Water Management District, South Dade Soil Water Conservation District, and several universities in south Florida.

MDC004

Published sixty-five scientific articles in different scientific journals such as: Water Resources Bulletin, Trans. of Amer. Soc. Agr. Eng., J. of Irrigation and Drainage, J. of Range Science, and proceedings of various technical conferences in the US and abroad. Presented more than hundred scientific oral and/or poster presentations at various scientific conferences in the US and abroad. Cooperated with scientists from several institutes or universities in the US and abroad such as; China, Brazil, Mexico, Austria, Turkey, Uzbekistan, England, Egypt, and Turkmenistan. Invited papers by American Society of Agronomy (ASA) and American Geophysical Union (AGU), and several international conferences. Reviewed more than hundred manuscripts, book chapters and grant proposals for various scientist, societies or domestic and international research institute.

HONORS AND AWARDS:

-University Honor Roll (undergraduate- 4 semesters and 8 quarters, graduate- 7 quarters), Gorgan College of Natural Resources (1973-1976) and Utah State University (1978-1983).

- Certificate of Appreciation by the Everglades Coalition. As a member of the restudy team and for outstanding commitments to restoring the Everglades National Park, April 2002.

- Certificate of Appreciation, USDA-ARS, for the development of USDA-Water Erosion Prediction Project (WEPP) water balance and infiltration components, August 1989.

-Certificate of Appreciation, USDA-ARS, for 14 years of valuable research for the USDA-ARS, National Soil Erosion Research Laboratory, September 1997.

- USDA-ARS-Annual Performance superior **award**, for year 2000.

- USDA-ARS-Annual Performance superior **award**, for year 2001.

- USDA-ARS-Annual Performance superior **award**, for year 2002.

- USDA-ARS- Annual Performance Outstanding **award**, for Year 2003

- USDHS-FEMA- Annual Performance Superior **award** for Year 2022

-Recipient of the prestigious "**Joan Hodges Queneau Palladium Award**" sponsored by the American Association of Engineering Societies, the National Audubon Society, and Florida Audubon Society. The palladium award denotes a significant contribution toward the safeguard of the community or treasured resource (the Everglades). The palladium honoring those that share a conviction that cooperation between engineering professionals and environmentalists encourage innovative solution to environmental problem. I received this award with the other members of Everglades Restudy Team.

- Certified Hydrologist (CH) by the American Institute of Hydrology (AIH).

Teaching Experiences:

2012-2013 – Application of Statistics model in Water Resources Research. Beijing Normal University. Beijing, China

1991-2013 - Advising graduate students in the field of surface hydrology, water quality, GIS and watershed modeling, and global climate change. Agricultural and Biological Engineering Dept. and Agronomy Dept., Purdue University. Florida International University, University of Miami.

Spring 1985 - Taught a watershed modeling course. A graduate level course teaching student to understand the structure, content and application of different watershed computer models, i.e., CREAMS, SWRRB, SPAW, SWAT and EPIC computer models. Forestry Department, Utah State University, Logan, Utah.

9/83-12/83 - Teaching assistant for Non-Balance Analysis of Variance. Professor David Turner. Applied Statistics and Computer Science Department, Utah State University, Logan, Utah.

3/81-9/81; 3/83-9/83 - Applied statistics and computer programming consultant. Aided students with questions and problems about applied statistics and computer programming. Aided graduate students with their study design and data analysis using different statistical programs; SPSS, SAS, IMSL, and MINITAB.
Applied Statistics and Computer Science Department, Utah State University, Logan, Utah.

1/81-3/81; 3/83-6/83 - Teaching assistant for Principles of Watershed Management. Professor Fred Gifford, Watershed Science Dept., Utah State University, Logan, Utah.

WORK EXPERIENCE

2011- Present, President of Water Resources Data Analysis, LLC. Licensed and registered. Conducting Statistical Analysis and Modeling to assess Environmental Quality and Agricultural Production.

May 2019-Nov 30, 2021, Reservist, Environmental Protection Specialist at the Federal Emergency Management Agency (FEMA). Deployments History and Performed Tasks.

NOV 2021-PRESENT, Joined the FEMA–EHP CORE as Environmental and Floodplain Management Specialist, my supervisor on record is Andria Darby, Supervisory Program Manager, Office of Environmental Planning and Historic Preservation | FIMA, Mobile: (256) 405-8362, andria.darby@fema.dhs.gov. Currently working on the Hurricane Ian FEMA recovery projects.

May to August 2022- to present, Deployed ODT meetings, Training and Development, Supervisor Maria Blake, 202-679-9372. Reviewing and revising the FEMA Independent Study courses on floodplain management.

2009-2011, Supervisory Research Hydrologist-Watershed Modeler, USDA-ARS-Southeast Watershed Research Unit (SEWRU), Tifton, GA.

My primary research activities are: a) Conducting field experiments such as soil water balance, infiltration, non-point source water pollution in order to assess the fundamental interrelationship of the factors effecting crop growth, regional hydrology and water quality and , b) developing a superior hydrology model that simulates the water balance, crop production, pesticide and nutrient movement within the unsaturated zone to be used by the action agencies. GS 14, Step 10, Salary \$132,000. Supervisor: Dr. Tim Strickland, Phone: 229-386-3664.

1997 –2009, Project Leader- Lead Scientist (Research Hydrologist-Watershed Modeler), USDA-ARS, SHRS, Everglades Agricultural Hydrology Research Project, Florida. My primary research activity is to lead a new USDA-ARS-hydrology program in south Florida. The mission of the project is to provide agro-hydrology science and technology to sustain agricultural production and environmental quality in region with shallow ground water, extensive drainage canals, and non-stationary hydrologic regimes. This research includes: 1) conducting field experiments such as soil water balance, infiltration, non-point source water pollution in order to assess the fundamental interrelationship of the factors effecting the regional hydrology and water quality, 2) developing a farm scale computer model called USDA Everglades Agro-Hydrology Model (EAHM) that will simulate the water balance, crop production, pesticide and nutrient movement within the unsaturated zone to be used by the action agencies, and 3) linking the farm scale model with the regional computer model (SFWMD-RSM and MODBRANCH model) in order to evaluate the effect of alternative designs and operational changes in the water management system on the sustain ability of agricultural production and environmental quality in south Florida. GS 14, Step 10 Salary \$132,000, Supervisor: Mr. Bob Heath, Phone: 305-254-3643.

1987 – 1997 - Research Hydrologist-Watershed Modeler, Agricultural and Biological Engineering Department, Purdue University, was stationed at the USDA-ARS National Soil Erosion Research Laboratory, West Lafayette, IN. My primary research activities included: 1) developing and evaluating soil water balance, subsurface hydrology, soil data base, and winter hydrology for the USDA-Water Erosion Predication Project (WEPP) model; 2) developing and evaluating surface and subsurface hydrology and soil temperature for AnnAGNPS computer model; 3) incorporating pesticide and nutrients movement into the WEPP model; 4) using GIS to parameterize the WEPP model; 5) modeling the effect of global climate change and increased CO2 on hydrology and erosion; 6) conducting field research on the effect of macro

porosity and surface crusting on infiltration and storm runoff; and 7) monitoring and modeling runoff of pesticides from small plots and watersheds. Salary \$56,000. Supervisor Dr. Darrell Norton, Phone: 765-494-8682

In addition, I was an **associate consultant** with an environmental management company called Ecologistics Limited LLC. Within the company, I worked on the area of watershed management and planning, erosion control, GIS application, and monitoring and modeling water quantity and quality.

INTERNATIONAL EXPERIENCE AND INVITATION

9/ 2001- Invited and visited Beijing Normal University, Beijing, China. Assisted soil and water conservation projects and gave lecture at the university on application hydrologic modeling.

3/2001- Invited and visited University of Chekura, Adana, Turkey and Ankara University, Ankara, Turkey. Worked with the faculty of the soil and water Dept. at both universities on hydrologic modeling and the movement of agrochemical using a rainfall simulator.

8/1995-9/1995 - Selected by the U. S. National Academy of Sciences to travel to Uzbekistan. The purpose of this trip was to initiate a cooperative research program with the scientists from Uzbekistan's Institute of Irrigation, Soil, and Hydro- meteorological. The main objective of the proposal is to increase the water use efficiency of cotton fields under furrow irrigation and improve water quality. The proposal is being considered for funding by the USDA Office of Foreign Agriculture and the World Bank.

8/1994-9/1994 - Selected by the U. S. National Academy of Sciences to evaluate the water resources problem in the Aral Sea Basin. Traveled to Uzbekistan and Turkmenistan to conduct a workshop on the use of hydrologic models for evaluating the water balance of a large basin such as the Aral and Caspian Sea basins. In addition, along with nine other scientists from the U. S., we were to evaluate all aspects of the water resource problems including water quality in Central Asia.

6/1994-7/1994 - Invited and worked with the University of Agriculture, Institute of Hydraulics and Water Resources, Vienna, Austria. Designed an experiment to study the effect of different farming practices on hydrology and soil erosion in Austria. Designed a rainfall simulator to study hydrology (rainfall-runoff relations) and water induced soil erosion in Austria.

11/1993-12/1993- Invited and worked with the Mexican Department of Agriculture, Soil and Water Research Unit, Yukotan, Mexico, on adopting the USDA-Water Erosion Prediction Project computer model to Mexican watersheds. Developed a computer model to simulate the water balance of the soils with shrinkage cracks.

11/1991-12/1992 - Consulting for the United Nations-Food and Agricultural Organization (UN-FAO) watershed management project in Morocco. The consulting mission focused on the water resources problem in Morocco. More specifically, the mission included training Morocco's watershed management technical staff to conduct field research and apply watershed models to evaluate the feasibility of various soil and water conservation techniques, evaluating watershed conditions in Morocco.

MEMBERSHIPS, ACTIVITIES, AND PERSONAL DATA

Member of USDA-ARS, Water Erosion Prediction Project team and Annualized Agricultural Non-Point Source pollution (AnnAGNPS) computer model developing team.

Member of the South Dade Soil and Water Conservation district and Everglades Comprehensive Restudy Plan Team

Member of American Water Resources Association (AWRA) surface hydrology, agricultural and wild land hydrology, hydrologic modeling, and international hydrology working groups.

Member of American Society of Agricultural and Biological Engineering (ASABE), Soil and Water Section

Member of several environmental groups in south Florida, namely SERA, Water Quality Modeling, others.

Member of Phi Kappa Phi honor society (6/79-present), Who's Who in Science and Engineering.

I have an extensive background in use of Statistical Computer Program such as IMSL, MINITAB, and SAS statistical programs.

Watershed Modeling: Computer programming using FORTRAN, PASCAL, BASIC. Worked with physically based, deterministic hydrologic models such as WEPP, CREAMS, GLEAMS, EPIC, SWRRB, PRZM, RZWQM, SPUR, SPAW, SWAT, RSM and AGNPS. Worked with Geographic Information System (GIS), ArcGIS, ArcINFO layering.

Worked with the people who are involved from South Florida Management Water District, U. S. Army Corps of Engineers, University of Florida, USGS, ENP, and other organizations.

Attended a workshop on surface water loading model (PRZM) and exposure model (EXAMS II), Oct. 2-6, 1989.
Attended a workshop on SAS statistical programs, June 1988.

Able to speak, read and write in English, Farsi (Persian), some French, Russian

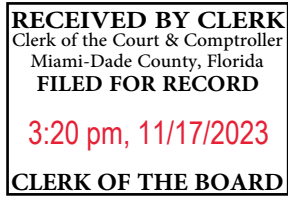
Publication List

M. R. Savabi, Ph. D. (Senior Research Hydrologist, Watershed System Modeler)

- Savabi, M. R.** 1981. Impact of Various Range Improvements on Watershed Protective Cover. MS Thesis, Utah State University, Logan, Utah. pp. 96.
- Johnson, C., **M. R. Savabi**, and S. Lomis. 1984. Rangeland Erosion Measurements for the USLE. Transactions of the Amer. Soc. Agric. Eng. 27:1313-1320. (Peer-reviewed)
- Savabi, M. R.** 1986. Modification of the Universal Soil Loss Equation Under Simulated Conditions (Rainfall, plant cover, and trampling disturbances) For Use on Per-Storm Basis. Ph.D. Dissertation, Utah State University, Logan, UT. pp. 214.
- Savabi, M. R.** and G. F. Gifford. 1988. Application of Soil Loss Equation to Trampled Soil Conditions. Water Resources Bulletin, 23: 709-716. (Peer-reviewed)
- Savabi, M. R.**, J. G. Arnold, and C. W. Richardson. 1988. Application of SWRRB Model on Rangeland Watershed. In: Proceedings of the 1988 International Symposium on Modeling Agricultural Forest and Rangeland Hydrology. Amer. Soc. Agric. Eng. pp. 219-232.(Peer-reviewed).
- Savabi, M. R.** and G. F. Gifford. 1989. Effects of Simulated Canopy Cover and Trampling Disturbances on Rill and/or Interrill erosion. Water Resources Bulletin 25: 783-789. (Peer-reviewed).
- Savabi, M. R.**, J. G. Arnold, C. W. Richardson, and J. H. Krishna. 1989. Modeling the Effect of Brush Control on Rangeland Water Yield. Water Resources Bulletin. 25: 855-865. (Peer-reviewed).
- Savabi, M. R.**, E. T. Engman, W. P. Kustas, W. J. Rawls, and E. T. Kanemasu. 1989. Evaluation of WEPP Water Balance Model for Watershed 1D in the Konza Prairie, Kansas. In: The Proceeding of 19th Conference, Agricultural and Forest Meteorology and Ninth Conference, Biometeorology and Aerobiology. Charleston, SC. March 7-10. pp. 147-150. (Peer-reviewed).
- Savabi, M. R.**, W. J. Rawls, A. D. Nicks, and J. P. Williams. 1989. Water Erosion Prediction Project (WEPP) Water Balance. Chapter 7, WEPP Documentation. USDA-ARS, National Soil Erosion Research Laboratory, Publication No. 2. (Peer-reviewed).
- Savabi, M. R.**, W. J. Rawls, A. D. Nicks, and J. P. Williams. 1989. Water Erosion Prediction Project (WEPP) Water Balance Model. Am. Soc. Ag. Eng., St. Joseph, MI. Paper No. 89-2510. (Peer-reviewed).
- Rawls, W. J., D. L. Brakensiek, and **M. R. Savabi**. 1989. Infiltration Parameters for Rangeland Soils. Journal of Range Management. 42: 139-142. (Peer-reviewed).
- Savabi, M. R.**, W. J. Rawls, and J. R. Simanton. 1990. Rangeland Evaluation of WEPP Hydrology. In the proceedings of IR Conference - Watershed Management Symposium , IR Div., ASCE-Durango, CO/July 9-13, 1990. pp. 77-87. (Peer-reviewed).
- Savabi, M. R.** and J. D. Istok. 1991. Modeling the Effect of Subsurface Drainage on Storm Runoff -WEPP Approach. In: 27th Conference "Water Management of River Systems" and Symposium "Resource Development of the Lower Mississippi River." New Orleans, LA, September 8-13, 1991. pp. 391-393. (Peer-reviewed).
- Drungil C. and **M. R. Savabi**. 1991. Cropland Evaluation of WEPP Hydrology. Am. Soc. Ag. Eng., St. Joseph, MI. Paper No. 91-255.
- Arnold, J. G., L. A. Deer-Ascough, and **M. R. Savabi**. 1991. Validation of the WEPP Crop Growth Component. Am. Soc. of Ag. Eng., St. Joseph, MI. Paper No. 91-2554.
- Savabi, M. R.** and C. Drungil. 1991. Validation Criteria for Evaluating Watershed Models. Am. Soc. Ag. Eng., St. Joseph, MI. Paper No. 91-2510.
- Savabi, M. R.** and D. E. Stott, 1992. Effect of Rainfall Interception by Plant Residue on Soil Water Balance. Am. Soc. Ag. Eng., St. Joseph, MI. Paper No. 92-2634.
- Savabi, M. R.**, and J. M. Laflen. 1992. Water Erosion Prediction Project (WEPP) hillslope model. In Proceedings of the American Water Resources Association- 28th Annual Conference, R. Herman (ed.), pp. 267-268.
- Risse, L. M., **M. R. Savabi**, and M. A. Nearing. 1992. An Evaluation of Hydraulic Conductivity Prediction Routines for WEPP Using Natural Runoff Plot Data. Am. Soc. Ag. Eng., St. Joseph, MI, Paper No. 92-2142. (Peer-reviewed).
- Risse, L. M., M. A. Nearing, and **M. R. Savabi**. 1993. Optimization of Saturated Hydraulic Conductivities for WEPP. Paper No. 93-2028, Am. Soc. Ag. Eng., St. Joseph, MI.
- Savabi, M. R.**, R. W. Skaggs, and J. D. Istok. 1993. Water Erosion Prediction Project (WEPP) Chapter 8. Subsurface Drainage Component. WEPP documentation, National Soil Erosion Research Laboratory, Publication No. 3. (Software documentation).

- Savabi, M. R.** 1993. Modeling Subsurface Drainage and Surface Runoff with WEPP. *Journal of Irrigation and Drainage Engineering*, 119: 801-813 (Peer-reviewed).
- Savabi, M. R.** 1993. Water Erosion Prediction Project Hydrology Submodel, 1993. In: Proceedings of the Federal Interagency Workshop, Hydrologic Modeling Demand for the 90's. Fort Collins, CO, June 6-9, 1993, Ch. 5, pp. 8-16. (Peer-reviewed).
- Savabi, M. R., J. G. Arnold, and A. D. Nicks,** 1993. Impact of Global Climate Change on Hydrology and Soil Erosion: A Modeling Approach. In: Proceedings of the Industrial and Agricultural Impacts on the Hydrologic Environment, the second USA-CIS joint conference in Environmental Hydrology and Hydrogeology, Washington D.C., May, 1993. pp 3-18. (Peer-reviewed).
- Savabi, M. R., and C. W. Richardson.** 1994. Application of Water Erosion Prediction Project (WEPP) Hydrology Model to Watersheds with Vertisols. In: Proceedings of the Second Annual Conference of Grupo De Conservacion Del Suelo Y Agua, Merida, Mexico. pp 51-63. (peer-reviewed).
- Savabi, M. R., W. J. Rawls, J. M. Laflen, and J. R. Simanton.** 1994. Predicting Parameters for the Green and Ampt Infiltration Equation. *Am. Soc. Ag. Eng., St. Joseph, MI. Paper No. 94-2510.*
- Savabi, M. R. and D. E. Stott.** 1994. Plant Residue Impact on Rainfall Interception. *Trans. Amer. Soc. Agric. Eng. 37:1093-1098.* (Peer-reviewed).
- Risse, L. M., M. A. Nearing, and **M. R. Savabi.** 1994. Determining the Green-Ampt Effective Hydraulic Conductivity from Rainfall-Runoff Data for the WEPP Model. *Trans. Amer Soc. Agric. Eng. 37:411-418.* (Peer-reviewed).
- Kladivko, E. J., N. Akhouri, G. Willoughby, **M. R. Savabi,** and M. Golobi. 1994. Infiltration Rates and Earthworm Populations Under No-Till and Conventional Tillage in Indiana. In: Proceedings of the 13th International Conference on Soil Tillage for Crop Production and Protection of the Environment, Soil Tillage Research Organization. pp:447-451
- Savabi, M. R., D. C. Flanagan, B. A. Engel, M. A. Nearing, and B. Hebel.** 1995. Application of WEPP and GIS to Predict Storm Runoff. In: Proceeding of The International Symposium on Water Quality Modeling, Kissimmee, Florida, April 2-5, 1995. pp. 348-357.
- Savabi, M. R., W. J. Rawls, and R. W. Knight.** 1995. Water Erosion Prediction Project (WEPP) Rangeland Hydrology Component. Accepted for Publication by USDA-ARS. In: Proceedings of Rangeland Watershed Modeling, (Peer-reviewed). In press.
- Savabi, M. R., W. J. Rawls, and R. W. Knight.** 1995. Application of Water Erosion Prediction Project (WEPP) Rangeland Hydrology to a Texas Range Site. *J. of Range Management*, Vol. 48(6), pp. 530-536.
- Savabi, M. R., D. C. Flanagan, B. Hebel and B. A. Engel.** 1995. Application of WEPP and GIS to small watershed. *J. Soil Water Cons.* 50: 477-483. (Peer-reviewed).
- Klik, A, **M. R. Savabi,** L. D. Norton, and O. Baumer. 1995. Application of WEPP hillslope Model In Austria. In: Proceeding of American Water Resources Association Conference, Nov. 5-9, 1995, in Houston, TX., pp. 313-322, (Peer-reviewed).
- Savabi, M. R., W., R. Wight., and J. Bonta.** 1995. Water Balance Submodel: Model Description and Evaluation, *Am. Soc. Ag. Eng., St. Joseph, MI., Paper No. 95-2387,* (Peer-reviewed).
- Savabi, M. R., B. Young, G. R. Benoit, J. Witte, and D. Flanagan.** 1995. Winter Hydrology, Chapter 3. USDA-ARS, National Soil Erosion Research Laboratory Publication. WEPP model documentation. pp 14.
- Savabi, M. R., and J. R. Williams.** 1995. Water balance and Percolation. Chapter 5, USDA-ARS National Soil Erosion Research Laboratory Publication. WEPP Model Documentation. pp 14
- Savabi, M. R., R. W. Skaggs, and C. A. Onstad.** 1995. Subsurface Hydrology. Chapter 6. USDA-ARS, National Soil Erosion Research Laboratory Publication. WEPP model documentation. pp 12
- Savabi, M. R., D. Smith, P. P. Micklin, and O. Shamiliyeva.** 1995. Possible Effect of Climate Change on Aral Sea-Level Fluctuation. In: The Proceeding of the Global Changes and Geography, Conference of the International Geographical Union, August 14-18, 1995, Moscow, RUSSIA. (Peer-reviewed, In press).
- Savabi, M. R., A. Klik, and L. D. Norton.** 1996. Assessing Soil Erosion of Austrian Farmlands With WEPP Model. In: The Proceedings of Sixth Federal Interagency Sedimentation Conference, March 10-14, Las Vegas, NV. pp IX-98-106. (Peer-reviewed).
- Savabi, M. R., A. Klik, , K. Grulich, J.K. Mitchell, and M. A. Nearing.** 1996. Application of WEPP and GIS on Small Watersheds in the U.S. and Austria. In the Proceeding of the "HydroGIS 96", an International Conference on Application of Geographic Information Systems in Hydrology and Water Resources Management. April 16-19, 1996, Vienna, Austria. pp 469-476.
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- D. Shinde, **M. R. Savabi**, K. Konomi, P. Nkedi-Kizza, S. Reed, and K. Jayachandran. , 2008, Influence of Composting on Leaching of Phosphorus in a Calcareous Soil. *International agricultural Engineering journal*.2009,18(3-4):35-41.
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- Price, R., **M. R. Savabi**, J.L. Jolicoeur, and R. Srikumar R. 2009 Adsorption and desorption of phosphorus on Key Largo Limestone in deionized water and seawater. *Applied Geochemistry* 25 (2010) 1085–1091
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- Savabi, M.R.**, Scully, B.T., Strickland, T.C., Sullivan, D.G., Hubbard, R.K. 2013. Use of statistical and conceptual path models to predict corn yields across management-zones on the Southeast coastal plain. *Journal of Agricultural Science*. 1(2):32-51.



Memorandum



Date:

To: Juan Fernandez-Barquin
Clerk of the Courts and Comptroller

From: Daniella Levine Cava
Mayor *Daniella Levine Cava*

Subject: Appointment to the Environmental Quality Control Board by the Board of County Commissioners

Please find attached the resume of Mr. Daniel Flagler, Ph.D. for consideration by the Board of County Commissioners (Board) for appointment to the Miami-Dade County Environmental Quality Control Board (EQCB). Members of the EQCB are appointed by the Board pursuant to Sec. 24-8 of the Code of Miami-Dade County (Code).

The EQCB is a quasi-judicial board created by Ordinance No. 69-30 that convenes monthly to hear cases for variances from, or time extensions to comply with, the requirements of the Environmental Protection Ordinance (Chapter 24 of the Code of Miami-Dade County) and appeals from decisions of the Director of the Division of Environmental Resources Management in the Department of Regulatory and Economic Resources. The membership, terms of office, organization, duties and powers, and procedures which govern the EQCB are set forth in Chapter 24 of the Code.

The membership of the EQCB was recently amended by Ordinance No. 21-125, increasing the number of members of EQCB from five to seven. Dr. Flagler's appointment will fill a vacancy created by this ordinance.

The EQCB is composed of seven members appointed by the Board. Members serve staggered three-year terms. Quorum requires a majority of members duly appointed to the EQCB, and four votes are required for certain types of cases within specific wellfield protection areas. Due to the highly scientific and technical nature of the matters that the EQCB reviews, the members of the EQCB are required to have advanced scientific or engineering qualifications as follows:

- a) Two members shall be scientists possessing a master's or Ph.D. degree in biology or marine biology.
- b) One member shall be a scientist possessing a master's or Ph.D. degree in biochemistry or chemistry.
- c) Two members shall be licensed professional engineers in the field of chemical, civil, or environmental engineering or in lieu of one licensed professional engineer, one member may have a Ph.D. degree in chemical, civil or environmental engineering or one member may be a licensed professional geologist with certain qualifications, including a Ph.D. degree.
- d) Two members shall qualify as one of the following: a scientist possessing a master's or Ph.D. degree in biology, marine biology, biochemistry, or chemistry; or a licensed professional engineer in the field of chemical, civil, or environmental engineering.

Of the five current members, the EQCB has two members with a Ph.D. in biology, one member with a Ph.D. in biochemistry, one member is a Professional Engineer with a valid license issued by the Professional Board of Engineers in the State of Florida, and one member has a Ph.D. in civil engineering.

Dr. Flagler has a Ph.D. in biomedical engineering with extensive experience in microbiology, industrial chemistry, and biological applications, meets the qualifications to serve on the EQCB and is recommended for appointment. Due to the high volume of cases heard by the EQCB, the appointment of Mr. Flagler is necessary to avoid possible delays.

Attachment

DANIEL FLAGLER, PhD, MBA

7226 SW 112 Place Circle
Miami, FL 33173

(305) 951-4855
flaglerdan@gmail.com

SCIENTIST / BIOMEDICAL ENGINEER

Microbiology and Cell Science... Biomedical Engineering... Program and Technical Management

- ◆ OBJECTIVE: To help the community as an Environmental Quality Control Board volunteer member
 - Ph. D. (and master's degree) in biomedical engineering with extensive experience in industrial chemistry and biological applications
 - Bachelor's degree and master's credits (18 graduate hours) in Microbiology and Cell Science
 - M.B.A. business leader with wide-ranging history of managing complex research and development projects in the medical In Vitro Diagnostic industry.
 - Extensive college and graduate level teaching experience in Environmental Science, General Biology and Biomedical Engineering courses.
-

PROFESSIONAL EXPERIENCE:

Beckman Coulter / Danaher- Miami, FL

- ◆ Beckman Coulter is a manufacturer of biomedical testing instrument systems with a top 5 market share in blood testing, blood clotting, immunoassay, chemistry testing, and lab automation markets. It is the world's largest company devoted solely to biomedical testing, and has a wide variety of customers including hospitals, physician's offices, and reference labs.

Lead Systems Engineer- Life Sciences Flow Cytometry - Miami Site (2013 - present)

Systems integration lead in research and development of FDA submitted In Vitro Diagnostic flow cytometry systems. Key contributions include:

- Manages System Integration / Verification group for all system-level (hardware, software, and chemistry applications) design requirements and test programs for new clinical devices.
- Leads system environmental compliance and design reliability efforts for new product platforms.
- Leads system engineering and product risk management efforts for new product platforms.
- Develops system architecture for major flow cytometry platforms addressing performance, environmental impact, and reliability along with inputs from major internal stakeholders such as regulatory, field service, clinical evaluations, and manufacturing.

Systems Engineering Manager- Life Sciences - Miami Site (2007-2013)

Project manager leading multiple engineering teams in research and development of FDA approved In Vitro Diagnostic flow cytometry systems and particle characterization instrumentation. Key contributions include:

- Managed System Engineering functional group that is responsible for all system-level (hardware, software, and chemistry application) design and development activities for new instruments including Navios / Gallios flow cytometers, Multisizer and LS product lines.
- Performed system change impact analyses and risk assessments leading into regression testing planning and execution.
- Developed statistical system integration and verification test plans and procedures in conjunction with design engineers and application specialists.
- Managed project CAPA system to ensure closed-loop resolution of product complaints including change order requests and system action reports.

Staff Development Scientist (1999-2006)

Project manager leading team research and development of FDA approved In Vitro Diagnostic reagents for blood cell analysis by flow cytometry.

- Development of new assay controls for cytometry applications including Immuno-Trol Low Cells Kit, a second level whole blood process control for flow cytometry and LeukoSure White Blood Cell Enumeration Kit and associated RBC and PLT Controls
- Verified and validated product performance, manufacturing processes and chemical stability claims. Developed novel ELISA assays for soluble and cellular analytes.
- Provided technical sections of U.S. FDA/CBER 510(k), patent applications, French AFFSAPS and other international regulatory submissions

Scientist (1997-1999)

Project leader involved in process optimization and developing novel chemical production procedures for the achievement of stable cell controls with natural antigen levels used in flow cytometry.

Associate Scientist (1995-1997)

Project leader involved in the development of new Research Use Only reagents for flow cytometry which include fluorochrome-labeled monoclonal antibodies Cytokeratin-FITC, CD28-RD1, CD28-FITC, and Glycophorin A-RD1.

Research Associate (1994-1995)

Involved in production and process scale-up of purification procedures for biopharmaceuticals, namely, Coulter Pharmaceutical's B1 antibody (Bexxar), for use in human clinical trials.

Biotech Manufacturing Specialist II (1993-1994)

Responsible for the research and development of purification and fluorochrome conjugation for monoclonal antibodies from ascites fluid and conditioned media. Developed and performed final product and in-process assays such as SDS PAGE and liquid chromatography.

RESEARCH EXPERIENCE:

University of Miami School of Medicine..... 1985 - 1993

E.M. Papper Laboratory of Clinical Immunology - FDA trial of immunotherapeutic infusion of autologous ex vivo activated and expanded lymphocytes in AIDS patients with Kaposi's sarcoma.

Diabetes Research Institute - Clinical transplantation studies of pancreatic islets of Langerhans as a cell-based therapy for control of insulin-dependent diabetes.

Department of Neurological Surgery (Miami Project to Cure Paralysis) - Study of spinal cord injury and the development of molecular neurobiological models that evaluate restoration of function.

Department of Microbiology and Immunology - Investigation of cell-based mechanisms of mRNA modification and splicing.

Department of Anatomy and Cell Biology - Laboratory characterization of cytoskeleton-associated glycoproteins in ascites tumor cells.

Additional Experience:

University of Miami

LECTURER -

2011 - Present

Department of Biomedical Engineering

Courses include: Introduction to Biomedical Engineering, Biomedical Systems Engineering and Cellular Analysis and Instrumentation

Miami-Dade College

ADJUNCT PROFESSOR -

2007 - 2013

Department of Biology, Health and Wellness

Courses include: General Biology and Environmental Science

Memberships - INCOSE (International Council of Systems Engineering); RAPS (Regulatory Affairs Professional Society); ASQ (American Society for Quality) - Certified Reliability Engineer

EDUCATION

Master of Science Program in Microbiology and Cell Science (2021) -University of Florida

- Completed 18 graduate credits
 - Environmental Microbiology
 - Prokaryotic Diversity
 - Virology
 - Microbiology of Human Pathogens

Master of Business Administration (2011) - Colorado State University, School of Business

Ph. D. in Biomedical Engineering (2007)- University of Miami, College of Engineering

Master of Science in Biomedical Engineering (1994) - University of Miami, College of Engineering

Bachelor of Science in Microbiology and Cell Science (1985) -University of Florida, College of Liberal Arts and Sciences

Associate of Arts (1982) - Miami-Dade College

Abstracts, Posters and Presentations:

1986 American Society for Bone and Mineral Research: A Factor Chemotactic for Endothelial Cells in Hypertrophic Cell Zone (HCZ) Growth Cartilage; M.R. Carreno, O.E. Muniz, D.D. Dean, D. Flagler, U. Ryan and D.S. Howell

1996 Clinical Applications of Cytometry Annual Meeting, Charleston, SC: CD34+ cell controls for use in the enumeration of CD34+ stem cells; Maples, J., Hall, J., Flagler, D., Baker, J., Munoz-Antoni, I., Timmons, R. and R. Mills.

1997 Clinical Applications of Cytometry Annual Meeting, Charleston, SC: Absolute count values for CD34+ cells in normal peripheral whole blood specimens; Chinnners, J.E., Maples, J., Flagler, D., Munoz-Antoni, I., Timmons, R. and R.A. Mills.

1998 International Society for Applied Cytometry, Annual Meeting, Colorado Springs, CO: Evaluation of a biological standard for the identification and enumeration of CD34+ hematopoietic stem cells; Daley, J.F., Lazo-Kallanian, S., Mills, R., Maples, J., Baker, J., Chinnners, J., Flagler, D., Munoz-Antoni, I., Timmons, R. and I.J. Webb.

1998 meeting of the Clinical Cytometry Society in Charleston, SC: Immuno-Trol: Whole Blood Process Control; D. Flagler, J. Baker, I. Munoz-Antoni and R.A. Mills

2000 meeting of the Clinical Cytometry Society in Austin, TX: Performance of an Immunoplatelet Count Method; LA Charie, D. Flagler, C.U. Smith, J.R. Cobb and R.H. Raynor

2001 meeting of the Clinical Cytometry Society in Orlando, FL: Whole Blood Process Control for Low Level CD4 Cell Enumeration; D. Flagler, J. Baker and I. Munoz-Antoni

2002 meeting of the Orthopedic Research Society in Dallas, TX: Effect of Hydration on Conductivity of Normal and Trypsin Treated Annulus Fibrosus; M. Justiz, H. Yao, D. Flagler, WY Gu

2002 meeting of the Orthopedic Research Society in Dallas, TX: The Dynamic Mechanical Behavior of Normal and Trypsin Treated Annulus Fibrosus in Compression; H. Yao, M. Justiz, D. Flagler, WY Gu

2003 meeting of the Clinical Cytometry Society in Washington D.C. to discuss Fluorescence Quantitation Standardization. Presented information on Beckman Coulter reagents and control cells to be used as part of a study for establishing an independent consensus process.

2004 meeting of the International Society for Analytical Cytology in Montpellier, France: Quantitative CD20 Assay Development for Monoclonal Therapy Monitoring and Evaluation in Treatment of Non-Hodgkin's Lymphoma; Norman Purvis, Keith Shults, Daniel Flagler and Jorge Quintana.

2005 American Association for Clinical Chemistry in Orlando, FL: CD20 ImmunoPlex: Simultaneous Immunophenotyping and Immunoassay; R.A. Mills, D. Flagler, I. Munoz-Antoni, J. Knapp, E. Musibay, R. Timmons, Paul Scibelli and J. Baker

Invited speaker at 2005 Third International Meeting on the Diagnostic and Biotech Applications of Magnetic Microspheres in San Diego CA: Use of Para-Magnetic Microspheres in Manufacturing of In Vitro Diagnostic (IVD) Cell-Based Quality Control Products

2007 Meeting of the Orthopedic Research Society in San Diego, CA: A New Approach for Monitoring Phenotypic Change in Cultured Intervertebral Disc Cells: Intracellular Collagen Detection by Flow Cytometry; Flagler, DJ; Huang CY; Yuan, T; Li, X; Laquian, L; Cheung, HS; Gu, WY

2009 Meeting of the Orthopedic Research Society in Las Vegas, NV: Levels of Extracellular Matrix Components in Flow Cytometric Measurement of Cultured Porcine Intervertebral Disc Cells; Flagler, DJ;

Huang CY; Yuan, T; Li, X; Laquian, L; Cheung, HS; Gu, WY

2010, University of Miami, Biomedical Engineering Graduation, Keynote Speaker

2016, BioFlorida Saturday Exchange, Keynote Speaker

2017, International Society for Applied Cytology, abstract: AQUIOS Designer Software for Flow Cytometry

Scientific Papers:

Annals of Biomedical Engineering 2003: Effects of Swelling Pressure and Hydraulic Permeability on Dynamic Compressive Behavior of Lumbar Annulus Fibrosus; Hai Yao, Marc-Antoine Justiz, Daniel Flagler, and Wei Yong Gu

Annals of Biomedical Engineering 2004: Diffusion of ions in Agarose gels and Intervertebral disc: effect of porosity; Gu WY, Yao H, Vega AL and Flagler D.

2004 Journal of Clinical Laboratory Analysis: Determining Shelf Life by Comparing Degradations at Elevated Temperatures; Magari RT, Munoz-Antoni I, Baker J, Flagler DJ.

Cytometry: Part B - Clinical Cytometry 2007: Quantifying CD4 Expression on T Lymphocytes Using Fluorescein Conjugates in Comparison with Unimolar CD4-Phycoerythrin Conjugates; Lili Wang, Fatima Abbasi, Adolfas Gaigalas, Robert Hoffman, Dan Flagler and Gerald Marti.

Cellular and Molecular Bioengineering (2009): Intracellular Flow Cytometric Measurement of Extracellular Matrix Components in Porcine Intervertebral Disc Cells; Daniel J. Flagler, Chun-Yuh Huang, Tai-Yi Yuan, Zhongmin Lu, Herman S. Cheung, and Wei Yong Gu.

Patents:

United States Patent 6,913,932 granted July 5, 2005 "Formaldehyde-Ammonium Salt Complexes for the Stabilization of Blood Cells"

United States Patent Application, July 2005: "Quantitative stabilized cell reference control products and methods"

United States Patent Application, April 2013: "Calibration Kit for Flow Cytometry"

United States Patent Application, July 2020: "Cellular Analysis Instrument with Onboard, Automated Sample Preparation System"