

Miami RISE USP Advisory Committee Meeting

January 29, 2004

1:30 p.m. to 4:00 p.m.

MINUTES

**Division of Mathematics and Science Education
Miami, Florida**

MINUTES

**Miami RISE USP Advisory Committee Meeting
School Board Administration Building
1450 Northeast Second Avenue, Room 916**

**January 29, 2004
1:30 P.M – 4:00 P.M.**

MEMBERS IN ATTENDANCE

Mr. Marcus Anglin, M-DCPS Title I Administration
Dr. Judy Brown, Miami Museum of Science
Dr. Linda Brown, M-DCPS Bureau of Community and Hospitality Services
Dr. Raymond Cain, Jr., Florida Memorial College
Dr. Keith Collins, Phytrust Corporation
Mrs. Maria Teresa Diaz-Gonzalez, M-DCPS Division of Mathematics and Science Education
Mrs. Cyd Heyliger-Browne, Miami Dade College
Mrs. Mona Jackson, Richmond Heights Middle School, M-DCPS
Dr. Wafa Khalil, MAST Academy, M-DCPS
Dr. George Koonce, Jr., M-DCPS Instructional Operations
Dr. Ohkee Lee, University of Miami
Dr. Ana Maria Lopez-Ochoa, M-DCPS Curriculum Support Services
Ms. Valda McKinney, United Teachers of Dade
Ms. Dannie McMillon, Miami-Dade County Council PTA/PTSA
Ms. Deborah Montilla, M-DCPS Division of Student/Career Services
Dr. Marilyn Neff, University of Miami
Dr. Lourdes Rovira, M-DCPS Curriculum and Instruction
Mrs. Mercedes Toural, M-DCPS Deputy Superintendent of Schools & Chief Education Officer
Dr. Joanne Urrutia, M-DCPS Division of Bilingual Education and World Languages

DESIGNEES REPRESENTING ABSENT COMMITTEE MEMBERS

Mr. Richard Benvenuti, M-DCPS Division of Instructional Technology & Media Support Services (representing Ms. Christine Master)
Ms. Rose Canal, M-DCPS Office of Adult/Vocational, Alternative and Community Education (representing Ms. Carol Renick)
Mr. Tarek Chebbi, M-DCPS Office of Performance Improvement (representing Dr. Eduardo Rivas)
Ms. Patricia Grimsley, M-DCPS District ACCESS Operations (representing Ms. Willa Young)
Ms. Laura Lisowski, M-DCPS Title II Teacher Quality Programs (representing Dr. Gabriel Quintero)
Dr. Ruby Poitier, M-DCPS Division of Exceptional Student Education (representing Ms. Brucie Ball)
Mr. Dan Wilson, M-DCPS Public Information (representing Mr. Mayco Villafaña)

OTHER PERSONS IN ATTENDANCE

Dr. Gladys Barrio, M-DCPS Division of Mathematics and Science Education
Ms. Kathy Carr-Leroy, M-DCPS Division of Mathematics and Science Education
Ms. Cheryl Juarez, Miami Museum of Science
Dr. Gustavo Loret-de-Mola, M-DCPS Division of Mathematics and Science Education
Ms. Yuria Orihuela, M-DCPS Division of Mathematics and Science Education
Ms. Sanjie Sanjurjo, M-DCPS Division of Mathematics and Science Education
Ms. Clementine Sherman, M-DCPS Division of Mathematics and Science Education
Dr. Constance Thornton, M-DCPS Division of Mathematics and Science Education
Ms. Karetha Times-Marshall, M-DCPS Division of Mathematics and Science Education
Ms. Michelle Weiner, M-DCPS Division of Mathematics and Science Education
Dr. Yuwadee Wongbundhit, M-DCPS Division of Mathematics and Science Education

OPENING REMARKS

Ms. Clementine Sherman, appointed to be the Meeting Process Facilitator, welcomed those in attendance. She briefly reviewed the agenda and the contents of the packets that were distributed to the participants. Each packet contained a copy of the following: (1) the name of and contact information for each member, (2) the Miami RISE USP Strategic Plan for 2003-04, (3) the Miami RISE USP Benchmarks for 2003-04, (4) the Annual NSF USP Report for 2002-03, (5) a PowerPoint summary of the presentations to be made in the course of the meeting, (6) an update on the Miami-Dade County NASA Science, Engineering, Mathematics and Aerospace Academy (SEMAA) program, and (7) a feedback form for participant groups to fill out and submit to the Division.

Since the day of the meeting was Ms. Sherman's last day of service with the School Board before retirement, Dr. Thornton, the Administrative Director of the Mathematics and Science Division, took the opportunity to publicly acknowledge her years of service as a dedicated worker and critical thinker. She was presented with a bouquet of roses.

INTRODUCTIONS

Welcome — On behalf of Mrs. Mercedes Toural and Dr. George Koonce, **Dr. Lourdes C. Rovira**, Assistant Superintendent of Curriculum and Instruction, welcomed the group and thanked members for participating. She stressed the importance of systemic reform in mathematics and science, reminding those present that this enormous task cannot be addressed by M-DCPS alone. Input from other educational institutions, community agencies, parents, and workers' unions such as we experience through the Advisory Committee, is vital to the success of the Miami RISE USP. The presence here today of seasoned educators exemplifies that commitment.

Given the sophistication of our current society, every segment of our educational system should be subject to scrutiny. We need to determine what should be taught today that was not a requirement five years ago. All of the participants involved—teachers, students, families, institutions, workplaces—play a role in molding that

wsystemic reform. The speed at which we are experiencing change is mind-boggling, making it that much more imperative to collaborate with all persons involved directly and indirectly.

Ms. Mercedes Toural, Chief Education Office and Deputy Superintendent of Schools, also thanked the group for being present at the meeting to assist M-DCPS staffers to close the gaps, especially those participants who represented a university or community agency. Their willingness to share with M-DCPS personnel what they have learned through research and through their university and agency initiatives is greatly appreciated.

OLD AND NEW BUSINESS

Dr. Constance Thornton, Administrative Director of the Division of Mathematics and Science Education, introduced the administrative staff members from her Division who were in attendance at the meeting and complimented them for their expertise and dedication.

Old Business — Dr. Thornton called the group's attention to the following recommendations that were made by the participants at last year's Advisory Committee Meeting on March 5, 2003, and advised them of what follow-up ensued as a result of their input and questions.

- Impact of families' socioeconomic level on student achievement.
Dr. Wongbunhit did a study of low-income schools to note student achievement on the basis of FCAT results. Low-performing schools were not limited to those at or close to the poverty level. Even some of the higher-income schools manifested low student achievement. We continue to be in the process of conferring with the principals of the higher-achieving schools to try to determine the cause of their successful outcomes.
- Availability of computers and Internet access for low-income families.
Ms. Master, from the Division of Instructional Technology and Media Support Services, notified the Division that M-DCPS is making progress in loaning computers to parents for use with their children. This year 1,000 computers with Internet-access were given to low-income schools for the families of their students.
- Assistance to parents who speak Spanish or Haitian-Creole.
This continues to be an ongoing need. Dr. Urrutia, from the Division of Bilingual Education and World Languages, indicated that her Division conducts weekly meetings in various schools throughout the District with non-English-speaking parents in order to actively involve them. The Division of Mathematics and Science Education needs to collaborate with Dr. Urrutia's Division so that native-language messages will be received by the appropriate parents. Dr. Linda Brown, from the Bureau of Community and Hospitality Services, indicated that the District ACCESS Operations office has a parent office headed by Ms. Yvonne Petersen that attempts to address the needs of parents throughout the District.

Dr. Brown recommended that the Mathematics and Science Division also confer with that office to pursue the common goals of both.

- Involvement of mathematics and science on the District Student Data Warehouse Committee.

This is a relatively new initiative. The committee consists of district and school-site administrators who work together to identify student-achievement data that can be used to analyze individual student progress, grade progress, and school progress. On the basis of these findings, teachers are in a better position to focus on those areas of the curriculum where the need is greatest.

- Collaboration with the Bureau of Community and Hospitality Services and its Dade Partners Program.

The Mathematics and Science Education Division continues to work with the Bureau to promote affiliation with Dade Partners by recognizing those companies/agencies that contribute in some fashion to the goals of the Division. These partnerships are honored on a statewide basis as well. Dr. Brown added that the next meeting of the Superintendent with our countywide businesses will focus on mathematics and science. The invitation will be sent to approximately 2000 local businesses. Dr. Brown asked the Division staff to prepare a list of the mathematics and science topics that it would like to include in the upcoming meeting. Additionally, by the spring of 2004, an Intranet database system will have been piloted, giving all M-DCPS schools and work locations access to information about their Dade Partners. The schools will be in a position to update the information as needed.

- Evaluation of Cognitive Tutor Program.

There is currently a software program being used by approximately 15 schools for Algebra 1 and 2 and Geometry. A person has been hired to evaluate this program. He conducted interviews with teachers at the schools that are using the program. So far, the results seem to be very positive. The Division continues to collect data concerning the program's effectiveness.

New Business — Dr. Thornton summarized for the group the following accomplishments that occurred in Year Three (2002-03) of the Miami RISE USP program:

- SEMAA

This program expanded significantly in 2002-03, its inaugural year. The construction of a second Aerospace Education Laboratory in partnership with Florida Memorial College was recently completed. Over 2000 students are being given numerous opportunities to become familiar with technology and to experience hands-on applications of mathematics and science theory. The Miami-Dade program, still in its infancy, has already received a national award for the progress made. A detailed account of SEMAA accomplishments is one of the documents contained in the participant handouts.

- Over 600 FCAT-like science and over 1,000 mathematics assessment items have been produced or reviewed.
The Division has produced assessment items in the past, but its focus of late has been on the use of an online website tool, Assess2Learn, as a mechanism to administer and score the tests. Through the use of this technology, it's become easier for school-site and district personnel to measure progress in the "F" high schools.
- Over 200 parent and family nights for mathematics and science topics.
Parents were invited to attend these events and to bring their children, which they frequently did.
- \$410,166 of NSF funds was allocated to schools.
About half of that amount was spent on substitute funds so that fulltime teachers could participate in professional development activities. The remaining amount was allocated to hourly wages to pay those who tutored students.
- Over 10,000 mathematics and science teachers participated in professional development activities.
- Teachers received over \$303,232 in materials and equipment from NSF funds to contribute to their professional development.
- State Science Lab funds provided another \$500,000 worth of equipment and materials for teachers.
- The Division partnered with over 50 major community entities. Dr. Loret-de-Mola will elaborate on that that topic later in the meeting with a PowerPoint presentation.
- The Division collaborated with a host of M-DCPS district departments since we all share the common goal of increasing student achievement.

Through the Miami RISE USP, the District serves as an effective leader that supports the efforts of schools to become dynamic mathematics and science learning communities. The mission of the Division is to provide curriculum leadership and instructional support to schools for the development of scientific and mathematical literacy that will impact student achievement and promote lifelong learning.

PROGRESS UPDATE

Sanjie Sanjurjo, Executive Director in the Division of Mathematics and Science Education, gave the participants a rundown of student performance from the base year (1999) to the current year (2004). A more detailed analysis of the data will be found in *Progress Update*, a section of the *Advisory Committee Meeting* booklet distributed at the meeting.

By way of summary, some of the highlights of her presentation included the following:

- Grades 8-12 student enrollment in standard mathematical courses has increased 43%. For LEP students, it is 196%; for ESE students, 345%. Grades 8-12 student enrollment in Biology, Chemistry, and Physics has increased 24%. However, Physics enrollment has declined 8% over the years. For LEP students, the increase represents 59%. Dr. Urrutia commented that her Division of Bilingual Education and World Languages needs to further explore the enrollment of LEP students, since the LEP increase in mathematics far surpasses the LEP increase in science.
- One of the five-year benchmarks is to increase the enrollment growth of minority students in seven specific mathematical courses by at least 25% over that of non-minority students. Hispanic students met the benchmark for all seven courses; African-American students met the benchmark for three of the seven. Another five-year benchmark was to increase the enrollment growth of minority students in Chemistry and Physics by at least 25% over that of non-minority students. Out of ten designated courses, African Americans met the benchmark in two cases; Hispanics, in nine.
- Another five-year benchmark is to increase the overall passing rate in Algebra I from 64% to 85%--a 21% growth in achievement. Ms. Sanjurjo expressed concern on the part of the Division staff that this benchmark will not be met in spite of the fact that staff is addressing the issue in various ways. Currently, the overall increase is a mere 4%--up to 68%.
- A five-year benchmark has been established to increase to 80% the percentage of grades 8-12 students earning a "C" or better in Geometry, Algebra II, Pre-Calculus, and Calculus. So far, this benchmark has been met for the Calculus courses, but not for Geometry or Algebra II.
- A similar benchmark has been established for the science courses of Biology, Chemistry, and Physics. In the case of Biology, the percentage has remained at 70% over the three-year period. In the case of AP Chemistry, the percentage has dropped from 95% to 92%. All the other courses have either remained well above the 80% benchmark or have continued to surpass it even more.
- The overall average FCAT SSS Mathematics Scale Scores for grades 5, 8, and 10 increased by 12, 12, and 15 points respectively.
- In terms of students scoring from a range of 3 to 5 in AP mathematics and science courses, Biology, Calculus AB and BC, and Physics C-Mech all showed a decline, the greatest being Calculus BC (-18%).

Comparing the District FCAT SSS mathematical results with the state results, M-DCPS' gain scores exceeded those of the state with the exception of grade 6.

Ms. Sanjurjo indicated that 6th graders are losing ground in mathematics, an anomaly for which the Division has no answer.

Dr. Yuwadee Wongbundhit, Executive Director in the Division of Mathematics and Science Education, reviewed for the group the 2003-04 (Year Four) Miami RISE USP Benchmarks. Ms. Sanjurjo provided a summary of Year Three achievements on the part of our students. The Benchmarks represent the Division's expectations for Year Four. A more detailed account will to be found in the handouts distributed to the participants.

- Goal 1 of the benchmarks deals with increasing student achievement. This achievement is based upon (1) an increased enrollment in both high-level mathematics and science courses; (2) an increased percentage of students earning a grade of C or better in both high-level mathematics and science courses; (3) an increased passing rate in Algebra I [in order to prepare students for higher-level mathematics and science courses]; (4) an increase in scale score points for both mathematics and science as measured by the FCAT SSS, and (5) an increased number of M-DCPS schools whose rate of improvement on the FCAT SSS Mathematics exceeds that of the state.
- Goal 2 deals with reducing the gap in minority/non-minority achievement. Enrollment growth for minority students will exceed that of non-minority students in selected mathematics and science courses. The overall increase in minority student achievement in both mathematics and science will exceed that of non-minority students.
- Goal 3 deals with teachers' use of standards-based mathematics and science curriculum and instruction and their aligning assessment with the standards. It is anticipated that 80% of teachers will use a variety of performance-assessment techniques that measure higher-order thinking skills and provide problem-solving experiences. Additionally, 70 percent of grades K-10 mathematics teachers will use a standards-based assessment and analyze the results as a means of improving instruction.
- Goal 4 deals with the improvement of school environments by Curriculum Support Specialists who currently provide enhanced support to "high-needs" schools, the establishment of a functioning Instructional Improvement Team in each school, and engagement in professional development opportunities on the part of teachers and school administrators.
- Goal 5 incorporates the support of parents, community agencies, and businesses to strengthen mathematics, science, and technology integration that will better prepare students for higher learning and career choices. "Out-of-school" experiences and internships for students will be expanded as a result of this effort.
- Goal 6 aims to increase teacher capacity, especially in the "high-needs" schools by providing a variety of forms of professional development. Schools will continue

to receive funding to support their mathematics and science instructional activities.

- Goal 7 deals with students' and teachers' advanced use of technology integration into their mathematics and science instruction for the purpose of improving academic performance. Enrollment of female and minority students in high-level technology courses will increase by 35% from the base year.

Ms. Kathy Carr-LeRoy, Science Supervisor, and **Ms. Yuria Orihuela**, Mathematics Supervisor, gave a joint presentation to the participants concerning the Division's use of strategies to improve student learning. These strategies fall into two major categories: (1) Professional Development (PD) Models and (2) Curriculum Enhancement.

In terms of PD, the Curriculum Support Specialists (CSSs) have been operating at the district, feeder pattern, and school level to provide services to teachers, school administrators, IIT members, and parents. Priority in this regard has been given to high-needs schools; for example, a mentoring program has been established for beginning teachers at Miami Edison Senior High. However, feeder pattern inservices are also provided to the higher-performing schools. A school that does well at the mathematical level does not necessarily maintain a similar achievement level in science. Therefore, the professional development teams tailor their services to the school's specific needs. The District annually sponsors comprehensive professional development activities in the fall, spring, and summer.

In regard to Curriculum Enhancement, the Division CSSs have expended a large amount of time developing assessment activities. A monthly meeting dealing with assessment takes place at the "F"-designated high schools. Since the introduction of the 10th grade Science FCAT, there is a great deal of concern about covering all pertinent curriculum areas. It is hoped that, in time, the state will change the Science FCAT from Grade 10 to Grade 11. In the area of science, pre- and post-tests have been developed for Biology, Earth/Space Science, and Chemistry. In the meantime, the Division has integrated grade 9 Earth/Space Science and grade 10 Biology with the other benchmarks that will be assessed by the Grade 10 Science FCAT.

During the summer of 2003, the Division worked with a group of teachers to develop a scope and sequence for Earth/Space Science and Biology. This is the first year that students are progressively enrolled in Earth/Space Science, Biology, and Chemistry or Physical Science. The Division has focused on physical science at the elementary school primary and intermediate levels, because that has proven to be the weakest link in science content areas. We are happy to see that more high school students are enrolling in Chemistry as opposed to Physical Science.

By Board Rule, M-DCPS has an Instructional Improvement Team (IIT) at each school—in some cases, under a different name such as *Curriculum Council*. The team represents a variety of skills on the part of teachers, administrators, counselors, ESE staff, etc. To ensure successful outcomes, the District provides

professional development activities for IITs as well. The purpose of the IIT is to formulate and accomplish the school goals, including the addressing of professional development needs. The teams make data-driven decisions that will contribute to curriculum enhancement. Teachers and school administrators are encouraged to download available data on student achievement (such as the SPI) and draw conclusions from it that will contribute to the enhancement of student learning.

From the M-DCPS Education Portal, teachers can obtain a variety of resources and lesson plans. Currently, this website is only for teachers' use.

COMMUNITY SUPPORT

Dr. Gustavo Loret-de-Mola, District Science Supervisor, gave the group an idea of the four types of supporting partnerships that collaborate with the Division in pursuit of its goals: (1) universities/colleges, (2) informal science institutions, (3) community education organizations, and (4) corporate or private businesses with specific contributing programs or sponsorships.

The mutual support between these groups and the Division can involve verbal, written, or staff support as well as financial support through contracts with M-DCPS or through federal/state grant funds. Dr. Loret-de-Mola referred the participants to examples of these partnerships which are described in the Driver IV section of the *Annual Year-Three NSF USP Report*, a copy of which was included in the handouts to the participants.

He elaborated on three examples of such collaboration—the M-DCPS Biscayne Nature for Environmental Education (a triple partnership involving M-DCPS, Miami-Dade County, and the private, non-profit Biscayne Nature Center), the Science Fair (sponsored by M-DCPS, the private, non-profit organization Friends of the Science Fair, and by numerous corporate, public, and private entities), and SECME (a strategic alliance of K-12 schools, universities, industries, and government partners dedicated to increasing the pool of historically under-represented, under-served, and differently-abled students). Dr. Loret-de-Mola called attention to the presence of Dr. Keith Collins, a participant at the meeting, who serves as the Chairperson of the SECME Alliance.

PARTICIPANT FEEDBACK

Following the staff presentations, participants assembled in groups to answer the following two questions posted on the feedback sheet that was contained in the handout folders:

- What new programs have you implemented or are in the process of starting that would impact M-DCPS?
- What are some recommendations for future programs/activities that M-DCPS should consider as potential collaborations?

The following is a summary of responses to the two questions:

Dr. Raymond Cain, Jr., explained to the group how **Florida Memorial College** collaborates with M-DCPS in implementing and expanding upon the SEMAA program. The college is the site of the new Aerospace Education Laboratory. They have been sponsoring the SEMAA summer camps as well as open house and field trips for SECME middle and high school students, giving them an opportunity to mingle with college students. Aviation personnel are invited to the open house as well as the 15 businesses associated with SEMAA and the businesses associated with SECME. The students really seem to enjoy these hands-on activities.

Concerning recommended activities, Dr. Cain is collaborating with Mrs. Karetha Times-Marshall, the SEMAA Director, to promote dual enrollment. High school seniors will be able to earn up to 12 college credits. Some federal funding for this may be available. He also recommended a three-week, summer flight awareness program that will introduce students to aerospace and actual flight experience in a real airplane. Another potential collaboration is a summer-school mathematics/science academy for middle and high school students in which they will be immersed into application-based mathematics and science problems. Dr. Cain indicated that when FMU conducts these open-house events, he would like other colleges in the area to participate so that students have exposure to a broad range of perspectives.

Dr. Keith Collins, who serves as Chairperson of the SECME Alliance, explained how the organization tries to be creative in getting outside companies to contribute in some fashion to SECME. The percentage of students who pursue a college education is greater for those who participate in SECME.

Two new programs that have recently been initiated are the SECME *mATHLETICS* Summer Program and the Robotics Competition. The *mATHLETICS* Program provides students about to enter into 9th grade with a solid mathematics foundation in the form of sports and SECME competitions. The Robotics Competition is currently designed as a display. However, next year SECME will implement it as a robotic hand competition, which will require a combination of engineering and science skills.

Recommendations for future programs/activities include urging corporations to "Adopt a School" by donating time, funds, and/or materials to SECME projects and to allocate employee time for volunteer work in the schools. Other suggestions directly affecting students include providing more resources to them through expanded use of the Internet; establishing third-world links, e.g., "Adopt a Village"; promoting student exchanges; taking measures to empower students more, i.e., by giving them opportunities to assume a teaching role and by placing them in a position where they are giving as opposed to receiving; and having students engage in solar-energy competitions. In regard to the latter, Dr. Collins feels that competitions using the science of biology are something to be considered, since the environment is such an important issue. He cited Dr. Khalil from the MAST Academy as someone who realizes the importance of this by engaging her students in solar-energy projects.

Mrs. Dannie McMillon, President of the **Miami-Dade County PTA/PTSA**, indicated that her organization is actively involved in promoting participation at the Science Fair parent nights. Since they are committed to the success of this activity, the PTA/PTSA is ready and willing to contribute even more than it currently does. Informational seminars involving parents of middle and high school students are extremely useful, since parental involvement wanes as children advance through the grades.

Dr. Ohkee Lee, from the **University of Miami**, is in the course of finishing a four-year NSF grant, which has made it possible for her to provide teacher training in M-DCPS elementary schools. A large number of the students impacted are LEP. Student gains and achievement gaps have been noted.

Ms. Cheryl Juarez, from the **Miami Museum of Science**, indicated that their current theme is "Experience the Real." She cited numerous activities in which the museum is engaged that promote its educational goals, e.g., Space OLE field trips which are enhanced by videoconferencing with NASA scientists; GREAT (a program for middle schools); Upward Board and BioTrac (a program for high school students); ECHOS (Early Childhood Hands-On Science), PETP (the only Palm-certified training agency in Florida), and STEP UP (Use of Palms and Probes by teachers and high school students).

Dr. Gladys Barrio and Dr. Loret-de-Mola added to Ms. Juarez's commentary that M-DCPS teachers can take advantage of the Museum's accommodations at no cost to them.

Dr. Linda Brown, from the M-DCPS Bureau of Community and Hospitality Services, indicated that her Bureau is in the process of searching for a community-based organization that could serve as a co-sponsor for the Mathematics and Science Division by accepting donations on behalf of the Division.

Her recommendations for future programs/activities were as follows: (1) The school system needs to offer businesses and the community more access to our websites. This could possibly be done through individual schools by the use of an access code. (2) The business community could sponsor a mathematics/science, district-awards ceremony for schools, teachers, and students. A possible title would be "The Silver Knights of Math and Science."

CONCLUSION – Ms. Sherman thanked all the participants for their contributions during the course of the meeting and encouraged them to keep in touch with the Mathematics and Science Division staff as the year progresses.

ADJOURNMENT: 4 p.m.