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BRING SCIENCE AND MATHEMATICS PROFESSIONALS INTO YOUR CLASSROOM!

Thanks to a grant from the Missouri Coordinating Board for Higher Education, last year's MPI students were visited at the Truman Campus by an astronaut, Navy Commander Michael McCulley, and this year's students watched a special presentation by world-renowned physicist Donald Huffman.

The Institute staff was responsible in turn for having the presentations video-taped and then making them available on loan to any Missouri high school. In all 8 videotape presentations have been made, including one by Peter Hilton, an internationally-known mathematician.

In addition, the staff, with the help of an advisory board, identified 33 professionals willing to give presentations to high school science or mathematics classes in the Kansas City metropolitan area. Information about the presentations and how to contact the presenters has been published in a booklet entitled SCIENCE AND MATHEMATICS PROFESSIONALS: SPEAKERS BUREAU FOR SECONDARY SCHOOL CLASSES. Many of the more than 53 presentations listed have been evaluated and approved by the students of the MPI, a tough group of critics. (To receive a booklet or for more information, contact the MPI at (816) 276-1272.)

Teddy Lambson

OUR HIGH SCHOOL TEACHERS 1986-87

CHARLIE WATTS comes to us, in his first year at the MPI, from Raytown High School where he has taught for the last 23 years and currently teaches both the Raytown calculus class and the Advanced Mathematics Topics class, putting to good use his MA in mathematics from Central Missouri State University. But his interests are not only mathematical: He has spoken at conferences and written papers for credit at UMKC on teaching computer languages to high school students, and apart from these academic pursuits is an experienced spelunker, having visited caves and pits all over the US and Mexico. He has even been to the bottom of the second deepest pit in the world, lowering himself (and then pulling himself back up) by rope through a 1,098 ft. free rappel!

In 1979 Charlie took on an unusual responsibility when he became a foster parent to a black high school boy whom he found living in a house without utilities (!) in January. The boy moved in with him for three years, graduated from Raytown high school, and is now working with Congressman Alan Wheat in Washington.

A final curious note to this depiction of a most singular mathematics teacher is that he lives in the oldest continuously occupied house in Jackson County, built in 1830. (For those who are wondering, it DOES have indoor plumbing!)

Our students have had this to say about Charlie in recent evaluations:

"...makes learning enjoyable so you want to learn."

"Excellent!! Makes things funny and interesting and he laughs with us on dumb mistakes."

"This is probably the best class I have ever had."

We hope that Charlie has found the MPI as interesting as we have found him, and we look forward again next year to his serious attitude and genuine love of mathematics and teaching.

BLAME IT ON A JOB WELL DONE

Carol Barnett, Fort Osage science fair coordinator, called again this year to request judges for the science projects competition. Only this year, she said that the district specifically requested UMKC students again because last year's MPI teaching assistants did such a fine job. So on March 4, Keith Wilson, Dominic Scardino, and Larry Forrester, the 1986-87 MPI teaching assistants, along with Anthony Lee, a UMKC electrical engineering major, spent their morning poring over student projects.

We are proud that these university students were willing to give their precious time to perform a service for the community. (Or was it perhaps the complimentary coffee, donuts, and cafeteria lunch that lured them?)

Teddy Lambson

ENRICHMENTS

First, we follow up on some of the speakers and TBA dates mentioned in the last newsletter: On Feb. 4, Bill Fields made his 3rd appearance at the MPI, speaking on Radiation Properties, which is his specialty as Director of Radiation Safety for UMKC and Truman Hospital. When Preston Leftwich came from the National Severe Storms Forecast Center on Feb. 18, he brought with him a small enclosure, a fan and some dry ice with which he miraculously created for us a small tornado! Mar. 4 brought us Dr. Bruce Barker, an oral pathologist from the UMKC School of Dentistry, who talked about AIDS and other diseases of the oral cavity --and NO ONE slept through this lecture, especially those MPI students wanting to become dentists. And lastly, our mini-field trips to the KU Medical Center (section by section) included trips to the MRI (Magnetic Resonance Imaging) facility, Occupational Therapy, and Cancer Treatment, all of which were fascinating.

But now to UPCOMING EVENTS: Our plans for launching balloons on Mon. April 6, during National Science and Technology Week, are underway, with the launch time set for 8:30 am. Preston Leftwich will bring us up-to-the-minute wind information that morning, and perhaps the media will drop in. Our preparations will begin with an orientation on Wed. April 1 to wind patterns, properties of helium, permeability, etc., and end with the dramatic release of 250 brightly colored balloons.

On April 29, Roger Carlson of UMKC's Mathematics Dept. will speak on Markov Chains and the Gambler's Ruin problem. Roger visited the Institute in its first

year and his talk then on
Fibonacci Numbers was well-
received.

Sunday May 3 will be the day
of our annual field trip to Worlds
of Fun Amusement Park, where our
students will be analyzing the
physics underlying the Orient
Express, the Finnish Fling, and
other rides, working out physical
descriptions between gulps of soda
and slices of pizza. We'll hope
for good weather this year in
place of the cold and rainy day we
suffered through in 1986.

Finally, on Thursday May 14,
for two hours we'll be visited by
a mathematician from Drexel
University in Philadelphia, who
wears the unusual name of Jet
Wimp. After finishing his graduate
education in Scotland, he worked
at the Midwest Research Institute
in Kansas City. Besides numerous
mathematical papers he has also
published two books of poetry. (A
poet-mathematician is perhaps not
as strange a mix as it may seem!)
Our students will have the
opportunity to explore this unique
personality during his two hour
workshop in the gym on a topic
TBA.

Our last week will include
not only the dreaded Finals in
each course, but also the annual
MPI Picnic Breakfast (what else
would you have at 7:10 in the
morning?) on May 21, which we'll
hold at a small park directly
across Hwy 24 from the Truman
Library. The following day (the
last day of the 1986-87 Institute)
will see the annual MPI Awards
Program, honoring this year's top
ten MPI students, presenting
certificates to all students
receiving college A's or B's in
any of our classes, and having
some last minute fun.

GOODBYE TO 1986-87, YEAR 3

This is the last newsletter
of this year. The next issue will
be dated August 1, and will have a
new audience -- the students
enrolled in Year 4 of the MPI.
Many of you will still receive
these newsletters, but to the
parents of this year's students we
say: Goodbye. We hope these four
issues have kept you in touch with
the program your children were
involved in out here at the Truman
Campus. Please let us know what
you think. It is partially your
grass-roots support that will keep
the MPI program in existence, as
we move inexorably toward the 21st
century in which scientific and
mathematical literacy will be
essential. We wish your children
success in their college careers,
and hope they'll have the time on
occasion to keep in touch with us.

MAA CALCULUS READINESS TESTS

In late April - early May the
MPI Mathematics Coordinator will
travel to each of the eight
participating high schools and
give the Mathematical Association
of America's Calculus Readiness
Test, designed by the Placement
Test Program for advising college
freshmen whether or not to begin
with calculus. He will administer
the test and grade it on the spot,
so that students will know their
status immediately. A score of 12
admits a student to the MPI, and a
score of 18 allows him or her the
option of enrolling in calculus I
and II, at full college pace. Of
course such a test (30 minutes and
25 multiple choice questions) is
not an infallible indicator, so
those who score near 12 may still
be admitted to the MPI, following
submission of their transcript,
two recommendation letters, and a
successful interview with the
Director of the Institute.

Our aim is to find those students best able and best ready to engage in college studies with the best hope of receiving college grades of A or B. These are the talented future scientists and mathematicians of the US, to whom we need to give attention and intense training as early as they are capable of it, if we are to no longer be 'A Nation at Risk'.

learn, you have to work! MPI is by far the most rewarding course of my high school career. I don't even mind getting up at 5:30 am to make it to class."

Kent Lauer
Raytown South High School
Raytown District

SOME LAST QUOTES FROM OUR STUDENTS

" Thanks to the Institute, I now have a good idea of what college will be like and of the attitude that I will need to be successful. The true benefit of this program will shine through my coming years in college."

John Tibbetts
Van Horn High School
Kansas City, MO District

" My experience at the Institute has helped me realize what college life is like. I have learned to cope with new teachers and their techniques, notetaking and studying for college tests. By no means do I regret my choice of working hard my senior year to learn new valuable skills that have helped me in my last year of high school and will continue to help me through college."

Caroline Morgan
William Chrisman High School
Independence District

" MPI is an educational opportunity which adequately challenges students without overwhelming them. Students benefit from this opportunity in myriad ways, but the most prominent benefit of MPI is that students have an excellent advantage in evaluating the educational opportunities open to them when they graduate from high school. I'm very happy that I decided to attend."

Kim Gallagher
Fort Osage High School
Fort Osage District

!NOTICE!

* The August 1 newsletter will report on the MPI's top ten students and on our Awards Presentation, as well as give IMPORTANT INFORMATION for our 1987-88 STUDENTS. Pass it on!

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" The MPI keeps me interested in school and keeps me from succumbing to 'senioritis'. High school has always been easy and really pretty boring; a lot of busywork. At the MPI we don't do busywork, and it isn't easy. To maintain your grades you have to work at the Institute and at home -- you can't just listen and

The MPI Newsletter is published on the first of the month during the months of August, October, December, February, and April at The Mathematics and Physics Institute, 600 W. Mechanic, Independence, Mo. 64050, phone (816) 276-1272. Please address all letters concerning this newsletter to 'Newsletter'.