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their folded paper. Giggles bounced around the room as the teens

No questions allowed. The students then snipped off one corner of
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of flu, she adds. Ninfa Matiase, a biol-

ogy teacher at Normandy High School,
has helped develop and revise the MiM
curriculum, and she uses the units in her
classroom. The 2010 institute inspired
her to design a lesson on how disease
spreads. Matiase will tell students that

a dead bird was found near the school.
Students will then use Google Maps to
look at their own community to see
how avian influenza could spread across
town. Matiase has already used the blue
flu unit to teach how viruses work. In that

lesson, students infect bacterial cultures
with the harmless virus. Then, they do a

protein assay to see if the bacteria are
infected. Next, they amplify DNA and

examine the results for particular genetic
patterns. The exercise gives her students

a taste of bench science. “This is what I
like best,” she says. “Giving students an
experience they would otherwise not have
in high school.” —J.E.

and a leader in the HHMI-supported program. “I had hoped for a
really good experience. I think they had a really great experience.”

Jack Short, one of four second-year medical students who

served as program counselors, used the same lymphoma scenario
to demonstrate the variety of career choices available in medicine.

He started with the medical receptionist, who is the first person a
patient contacts, and covered everyone from medical technolo-
gists to specialized nurses, physicians, and phlebotomists. Students

learned about the relationship between years of education and
potential salary as well as the importance of every member of the
health care team, says Ailor.

During a session on college preparation, students were asked to
close their eyes and make successive folds in a pink piece of paper,
following deliberately vague instructions given by the moderator.
No questions allowed. The students then snipped off one corner of
their folded paper. Giggles bounced around the room as the teens
unfolded their handiwork and discovered very different results from
paper to paper. The task drove home that working in the dark with-
out proper information is a bad way to prepare for college.

That evening, students attended a college fair where they
met college advisors from institutions ranging from small private
colleges to large public universities. “We wanted them to feel
recruited,” says Ailor.

On the last day of camp, Ailor reflected on the students’ experi-
ences. “It was amazing to me that they found their strengths and
used them in different ways during the week. We’d love to turn
them all on to science,” she says. “If we can get them thinking about
science, it’s huge.” —JEANNE ERDMANN

ZEBRAFISH TO GO

TEACHER JONI BRAILSFORD HAS FOUR BREEDING
pairs of zebrafish in her AP biology class-
room at Blue Springs South High School.
Her students watch each pair, noting
mating behavior and eagerly awaiting
the outcome. If all goes well, the students
will capture the eggs and then watch the
transparent embryos develop through
the lens of a microscope. ¶ “Kids love to
watch real life happen,” says Brailsford,
who prefers this method of teaching
versus lectures alone. ¶ Teachers like to
watch real life happen as well. Brailsford
was introduced to her first batch of zebra-
fish embryos during the 2010 Maps in
Medicine (MiM) Summer Institute at the
University of Missouri. ¶ During the week-
long session, 20 high school teachers
peered at zebrafish embryos through a
microscope and used Play-Doh to build
embryo models. They amplified DNA and
infected bacterial cultures with the “blue
flu,” a model of influenza virus. The exer-
cises introduced teachers to the main
themes of MiM: mapping cell fate and
mapping the spread and transmission
of influenza. Teachers spent the week
becoming familiar with each of the theme’s
multiple elements. They also met teach-
ers already skilled in teaching the themes.
MiM provides resources, equipment, and
reagents that the teachers take back to
their classrooms. ¶ “The curriculum can be
used at varying levels. Teachers can use
the entry-level sections or they can add
layers for an AP course,” says Susan Ailor,
a program leader in the HHMI-supported
program. And it doesn’t have to be limited
to science classes. Teachers can use the
materials to discuss the economic impact
of flu, she adds. ¶ Ninfa Matiase, a biol-

ogy teacher at Normandy High School,

has helped develop and revise the MiM
curriculum, and she uses the units in her
classroom. The 2010 Institute inspired
her to design a lesson on how disease
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2010 HOLIDAY LECTURES ON SCIENCE

VIRAL OUTBREAK: THE SCIENCE OF
EMERGING DISEASE

Today, people can travel from country to country
with ease. The result is a more global community.
But all that international travel coupled with the
planet’s warming trends means more outbreaks
of infectious diseases. Learn how viruses are
thriving—and how scientists are working to fight
them—at HHMI’s 2010 Holiday Lectures on Science.
Joe DeRisi and Eva Harris will talk about their virus
research and the technologies they are using to
detect and classify new viruses. DeRisi, an HHMI
investigator at the University of California, San
Francisco, will describe how he has used micro-
array technology to identify a number of new
viruses, including some that are killing parrots
and bees and infecting people in Nicaragua. Harris,
a University of California, Berkeley, professor of
public health, will talk about her research and com-

munity outreach in Central America, where she
is studying the rapid spread of dengue fever. The
Holiday Lectures will be available live by webcast

November 2010 | HHMI BULLETIN 39