

# SUBTRACTING FEAR & ADDING FUN

A NEW APPROACH  
TO MATHEMATICS

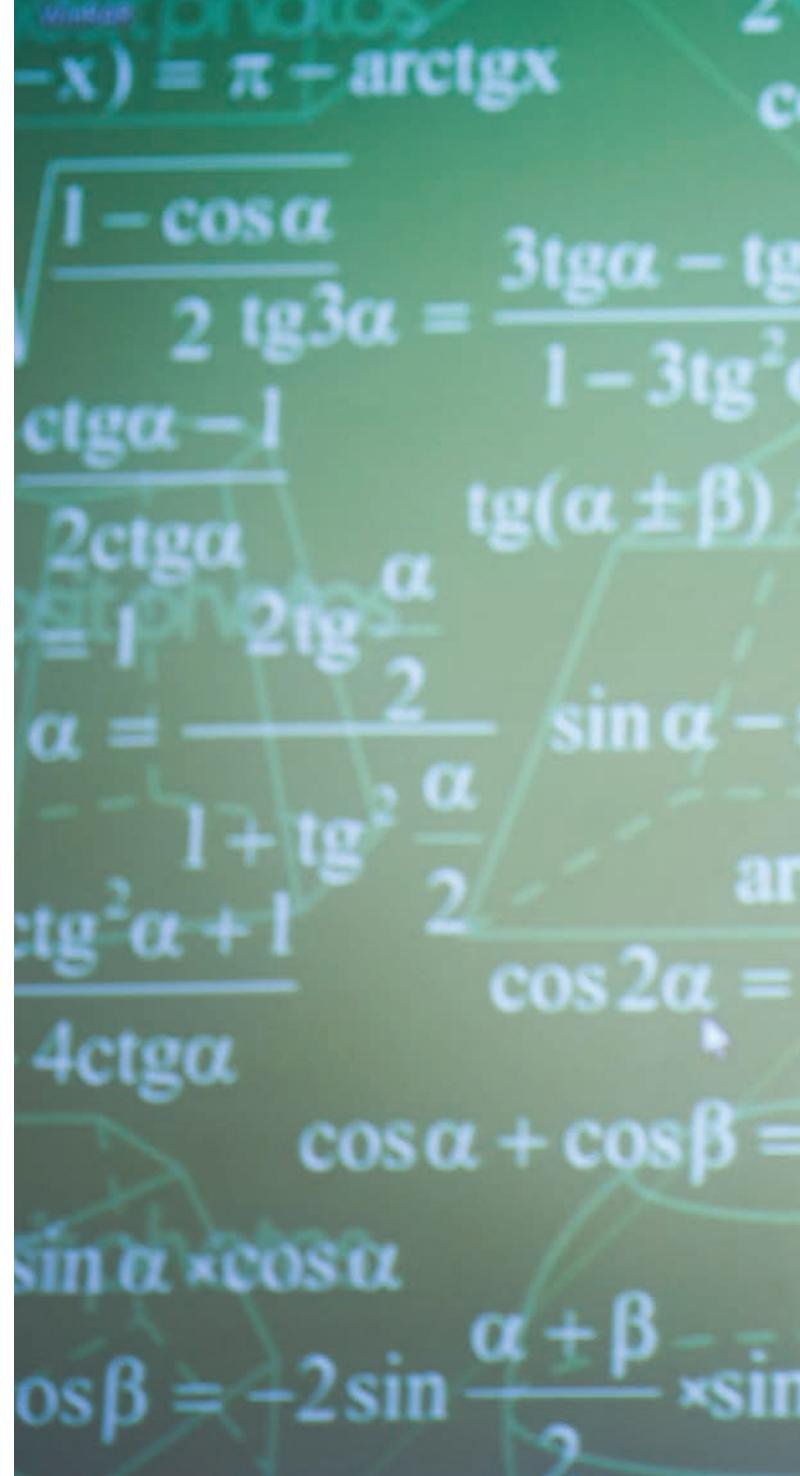
BY PETER DODENHOFF

To many a college student, math is a four-letter word, something to be dreaded and resisted, to be endured rather than enjoyed. That's something Associate Professor Dante Tawfeeq intends to change, and is changing.

Tawfeeq was hired just last year to lead the new Math Foundations and Quantitative Reasoning program, a group of eight full- and part-time instructors focused on student success in Math 104, and he takes an almost evangelistic approach to getting students to overcome their anxiety or resistance to learning math. "I learned early on that I could communicate mathematical ideas to students, and I'll use any tool at my disposal to help them get there," he says.

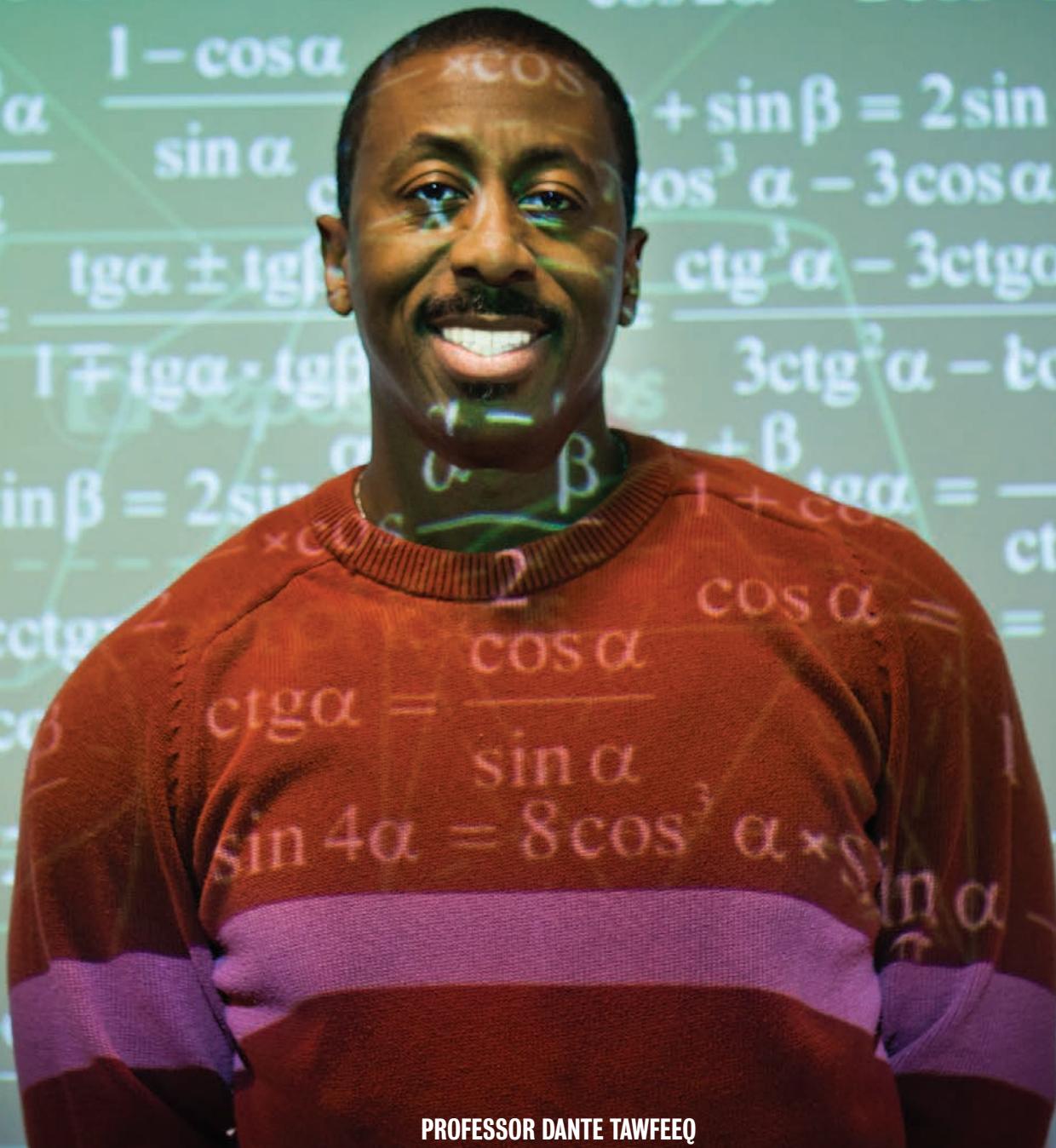
According to the Office of Undergraduate Studies, success in basic math correlates with increased retention, credit earning and degree completion, and after just one semester, Tawfeeq and his team have produced enviable numbers. The Math 104 pass rate for fall 2012 topped 77 percent, an increase of six percentage points over the previous year. "It's a stunning outcome, and our math faculty have made a remarkable difference by focusing on curriculum, adjunct hiring and delivery models," said Dean of Undergraduate Studies Anne Lopes.

Tawfeeq was recruited to John Jay from a post as professor of mathematics education at Adelphi University. "One reason that the position here at John Jay College was interesting is that it provided me with the opportunity to combine two areas of



research interest for me, namely mathematics education at the secondary and undergraduate levels," he said. "It also allowed me to serve minority and mathematically challenged students in a new and refreshing way."

Charged with improving the Math 104 pass rate as well as "putting 104 to bed," since the required Math and Quantitative Reasoning course is about to undergo a dramatic makeover next fall with the introduction of the new GenEd curriculum, Tawfeeq sees his job as one of management. "Managing the curriculum, managing those who are instructing the curriculum, and then managing ideas so that everyone's ideas can help advance the curriculum. Along with [lecturers] Alvin Estrada and Rita



PROFESSOR DANTE TAWFEEQ

Shamuilova, we're trying to create an atmosphere where everyone sees this as a think tank. I want to have a shared philosophy, but not educational drones."

After majoring in mathematics as an undergraduate, Tawfeeq found himself faced with the choice of becoming a pure mathematician or a math teacher. Two factors drove the decision, he recalled. "Teaching math is therapeutic for me," he said, "and I like to communicate." Communication helps create a comfort zone in the classroom, he believes. "My job is to help people be a little more comfortable in studying and learning mathematics," he says. "If I can do that, then I know that what I've done is not a marginal gain, but an exponential one."

Part of his approach can be considered fear abatement. "I tell each student walking into class that the only difference between me and you is that I've become comfortable in being wrong in trying to solve a math task, and you haven't," he says. It's all about learning outcomes, which is why Tawfeeq resists testing that comes off as punitive, and testing that does not build cumulatively on previous learning.

"Whenever I walk into a classroom, I'm thinking, 'How can I outdo myself? Can I get these students to outdo themselves? How do I facilitate thinking?' I'm very happy that the people we have in our program, and the ones we are hiring, realize that they're there to facilitate learning." **JJ**