Closing Ceremony Speech at MathPath 2011
Mr M (Prof Stephen B Maurer), Academic Director

Parents and Students,

At the opening session, I told the students what I hoped they would experience at MathPath. They did. Let me review that, and extend it.

MathPath was the first national camp exclusively about mathematics and exclusively for middle-school aged students. It was founded by George Thomas, after he had already founded a high school age math camp.

Now there are competing camps – other national camps exclusively for math that accept middle-school age kids. But MathPath remains unique, not just because it only accepts middle school aged kids, but also because of the variety of mathematics and the amount of fun.

Some of you are very interested in math competitions. That's a good way to get hooked into mathematics, and the competing camps that accept middle school age kids emphasize competition preparation. But professional mathematicians don't do competitions. Instead they can get prizes for research, and sometimes for teaching and for writing mathematics. So bringing you into the real world of mathematics must take you beyond competitions.

We do have competition practice here, this year Ms C's and Mr L's MATHCOUNTS courses, and Mrs Nal's AMC, AIME and Olympiad Geometry courses. But MathPath does much more.

We have foundation courses – courses on basic mathematical concepts that aren't much part of the North American school curriculum, such as number theory and induction. We have more advanced special topics courses, such as Dr V's Geometric Inequalities course and Glen's Spherical Trigonometry course. We have exciting courses that build mathematical ideas based on recreation, as when Prof Watkins taught Gaussian Integers through KenKen and Coach D taught ideas of provability through logic puzzles. And we have courses where you see active mathematicians at work, for instance, John Conway explaining some of his many original ideas and Prof Su explaining his work on fair division.

Add to that our month long courses on history of mathematics and on writing mathematics and you get a very broad view of the mathematical enterprise.

And that is not all. Let me mention the Problems of the Day, run by Mr L. These are thinking out of the box problems. They are rarely solved by traditional mathematical techniques; they usually need some sort of clever special idea. But many problems in life as well as mathematics need clever special ideas, so practice in looking for them is very valuable – as well as great fun.

So that's an overview of what we do in the official academic program of the camp. I want to go on to the unofficial part, but I want to say one more thing first, prompted by a

comment on this year's mid-camp survey. One of you wrote: This is the first time I have felt mediocre.

I want to turn that statement around. While the *density* of math-smart people in the world is low, in *absolute numbers* we are actually quite large. What that camper was saying was: heretofore I noticed only the density and felt special; at MathPath I suddenly saw the absolute numbers.

But this is a good thing. There is a vibrant worldwide community of math people; together we accomplish a lot and there is a place for us all. At MathPath you began to see the collaborative nature of that community. In all my classes there were many students who made good contributions. There were many winners for the Problems of the Day and the various other contests. We are all in this together, and together we should feel proud and accomplished, not mediocre.

So let me go on to the unofficial part of the program. . The first aspect is: you students talking to each other. Sometimes you talk math to each other, sometimes you teach each other how to solve Rubik's Cube, often you just kid around. But as someone said in the 2008 EndCamp Survey, this is a camp where it is ok to be a geeky math kid because there are lots of geeky math kids. As a result, you do all sorts of things that geeky kids like to do. Among these are all the student run games and tournaments – chess, Go, card games, but also pool, foosball, table tennis, line dancing, soccer, swimming, pickelball. And then there are the great trips – cycling, Pikes Peak, the all-time favorite water event _____(kids say White Water Rafting); and the new outdoor event this year _____(Rock Climbing). Throughout, you have a great sense of humor. I particularly noted the daily dual between Kip trying to get out important information in a timely fashion and you guys, obsessed with wanting to know everything in detail in advance, trying to sink him with questions or tournament announcements or spirit week announcements before he has said 2 words. Perhaps we need a new contest – the really bad questions to Kip contest.

The point is, through your geeky natures bouncing off each other, you create a unique spirit and have a lot of fun. You have enough free time that you can try all these ideas out.

You've made a lot of new friends, from around the country and the world. And today, with email, instant messaging, cell phones, and online MathPath forums at Google Groups and the Art of Problem Solving, you can easily keep up with them until you see them again – at this camp next year, or other camps, at national competitions, at college, or later in life.

So keep thinking back on what happened here. A few years from now, even things that that didn't seem so important here may stand out in ways you can't foresee.

I've enjoyed being here with you, and I'm proud to have played a role in making it happen. Thank you.