Engaging Young Mathematicians

An NSF workshop on majors and the transition to graduate work

Increasing the number of undergraduate mathematics majors

by

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This powerpoint will appear on my website

- url: http://www.math.arizona.edu/~velez
- Details about some aspects of this presentation can be found on my website under the James Leitzel Lecture.
- A story about a student that I met, Jenn.
- A tale of three Chicano mathematicians.

Moral of the story

- There are amazing students arriving at our universities and we are not paying attention to them.
- If students are majoring in X, then by adding mathematics as another major, X becomes more flavorful.
- Providing timely advice is critical.
- Good students need attention and advice.
- We, as mathematicians, need to take the initiative to communicate the necessity of studying mathematics.

My charge was to present ideas on attracting under-represented groups

- Anything that works with minority students works with all students.
- A brief description of my Calculus Advising Program for Minority Students
- The change that this brought about in me.

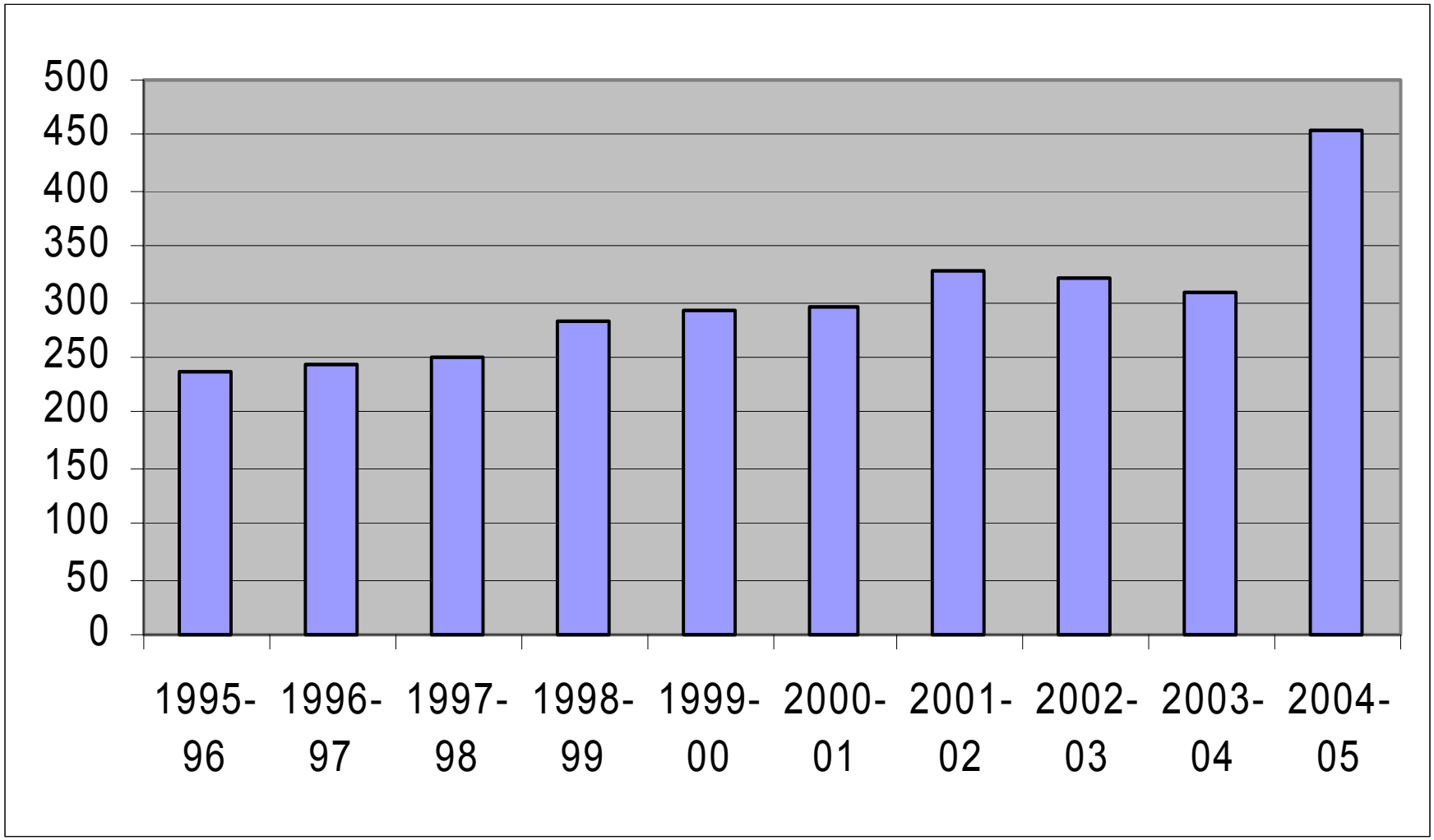
My own philosophy

- I tell my students that the purpose of this mathematics course is not to teach them the material.
- I tell them that the purpose of the course is to convince each and every one of them to change their major to mathematics or to add mathematics as another major.
- And it is not I that will do it. They will find the material so compelling, so interesting, so germane to their studies that they will come to me to help them become mathematics majors.

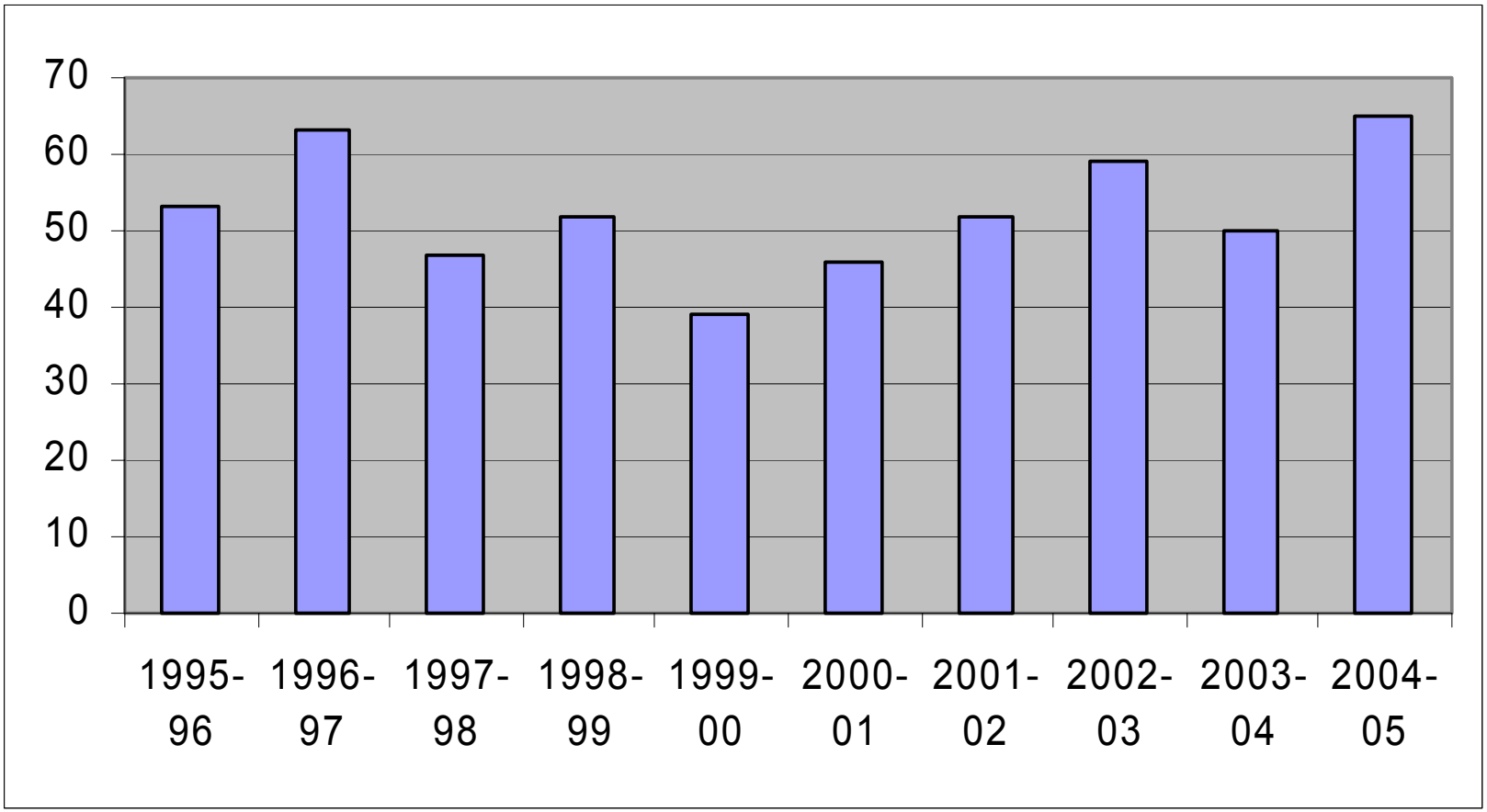
My new charge

- It is now my responsibility to work with all students. I am using the ideas that I developed to increase minority participation to work with all students.
- Results

Number of math majors



Number of Bachelor's degrees



How do we increase the number of mathematics majors

- Outreach
- An even more important activity than Outreach is:
- Inreach

Our mathematics classes

- Thousands of students pass through our mathematics classrooms yet very few of them go on to become mathematics majors.
- In particular, we should use our calculus classes to entice students into the continued study of mathematics.

Suggestions for university faculty

- Use your mathematics classes to recruit students into the continued study of mathematics. Suggest follow up courses to your students.
- Link up with any Outreach activities in your college.
- Inreach
- Attend the career fairs on campus to meet with recruiters to find out about employment opportunities for graduating mathematics majors and for internship opportunities.
- If you have a minority student who is a mathematics major, find out about summer internship opportunities for minority students. Example: RUSIS
- Attend a SACNAS conference: www.sacnas.org.