

Go With the Flow

New Mexico

Supercomputing Challenge

Final Report

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Team 5

Alamogordo High School

Team Members

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Teachers

Mr. Simon

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Project Mentor

Bob Robey

Our project is on the study of floods and flood paths. We decide to try to figure out if it was at all possible to predict and later prevent the massive unpredictable destruction of possible flood areas. By using the compiler Microsoft Visual Studios with the Computer Language C#, we designed a customizable simulator that simulated possible scenarios. Furthermore we used a physics engine that can be found on Codeplex and is called JibLibX. We also started implementing a networking system using the library Lidgren. To get started on smooth-particle hydrodynamics (SPH) model we used a paper from Stefan Auer. We used Metasequoia and Blender to model the spheres for our water as well as creating a floor and buildings. The original achievement that Pascal and myself reached was, to our knowledge, the first to try something of this nature and almost succeed in doing so. The conclusion that was reached by our team was that it is possible to predict flooding and damage caused by it. We give special thanks to Dr. Robert Robey for always being willing to share his vast amount of knowledge on water dynamics.