3941 –Richard Becker

Name of person submitting nomination: Marco Ciavolino

Richard Becker has worked with FRC3941 since its inception. Rich is an Army researcher and works in theoretical simulation of collisions and related actions. His background includes manufacturing (Alcoa), research (, and development.

Rich has worked with youth for years through his church and Big Brothers. He is extremely effective at challenging students to come to their own conclusions with a minimum of guidance. When needed, he will bring his full skills to bear to motivate students to see further and larger and deeper than their current level of understanding which has motivated nearly all our students to push their limits.

Rich is extremely engaged, especially with new students. He works steadily to help them learn more in many key areas, particularly in our machine shop. He will engage students in a step-by-step sequence to learn to use our drills, cutting equipment, CNC, and others.

At events, Rich will staff the pits for the students all day. Calming them down in crisis and guiding them to solutions. His assistance has given us three years of not missing a single match and always getting the 'bot back on the floor.' Similarly, he has guided our students in assisting other teams with our resources and knowledge.

He is good at using his extended experience in industry, research, and physics, to help our students discover solutions they would otherwise have not found, but without solving it himself.

This work with FRC3941 has been extended to multiple student internships with the Army Research Lab. This has given a number of our students exposure to supercomputing and some of the most advanced labs in the world. He has also agreed to be a mentor/advisor for the capstone projects of many of our students who attend the Science and Math Academy, and advanced local high school.

Lastly, Rich has spent many hours making sure our facility is properly setup and safe for our programs.

BIOGRAPHY

Richard Becker received a B.S. and M.S. in mechanical engineering from the University of Pittsburgh. His M.S. thesis work on micromechanical modeling of ductile void growth at the U.S. Steel Research Laboratory was continued with modeling and experimental work on ductile fracture at Brown University, where he received his Ph.D. in engineering. Following Brown, he was at the Alcoa Technical Center for 12 years pursuing micro-mechanical modeling of crystallographic texture evolution and anisotropy, thermo-mechanical process modeling, and constitutive model development and implementation. Dr. Becker went to Lawrence Livermore National Laboratory in 1999, where he worked on both the Integrated Codes and the Physics and Engineering Materials aspects of the Advanced Supercomputing Initiative. These efforts involved algorithm and code development, and multi-scale model development and validation for strength and fracture models. Dr. Becker joined ARL in 2009, where he has continued research on material behavior at multiple length scales, and development and implementation of constitutive models in large-scale hydrocodes. Dr. Becker was selected as an ARL Fellow in 2013.