



CMSC 635

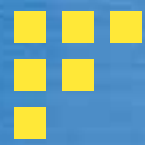
Course Topics



Procedural Shading



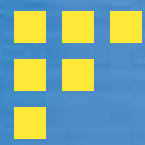
Pixar, Toy Story



GPU Shading



Marc Olano, Modified Noise for Evaluation on Graphics Hardware

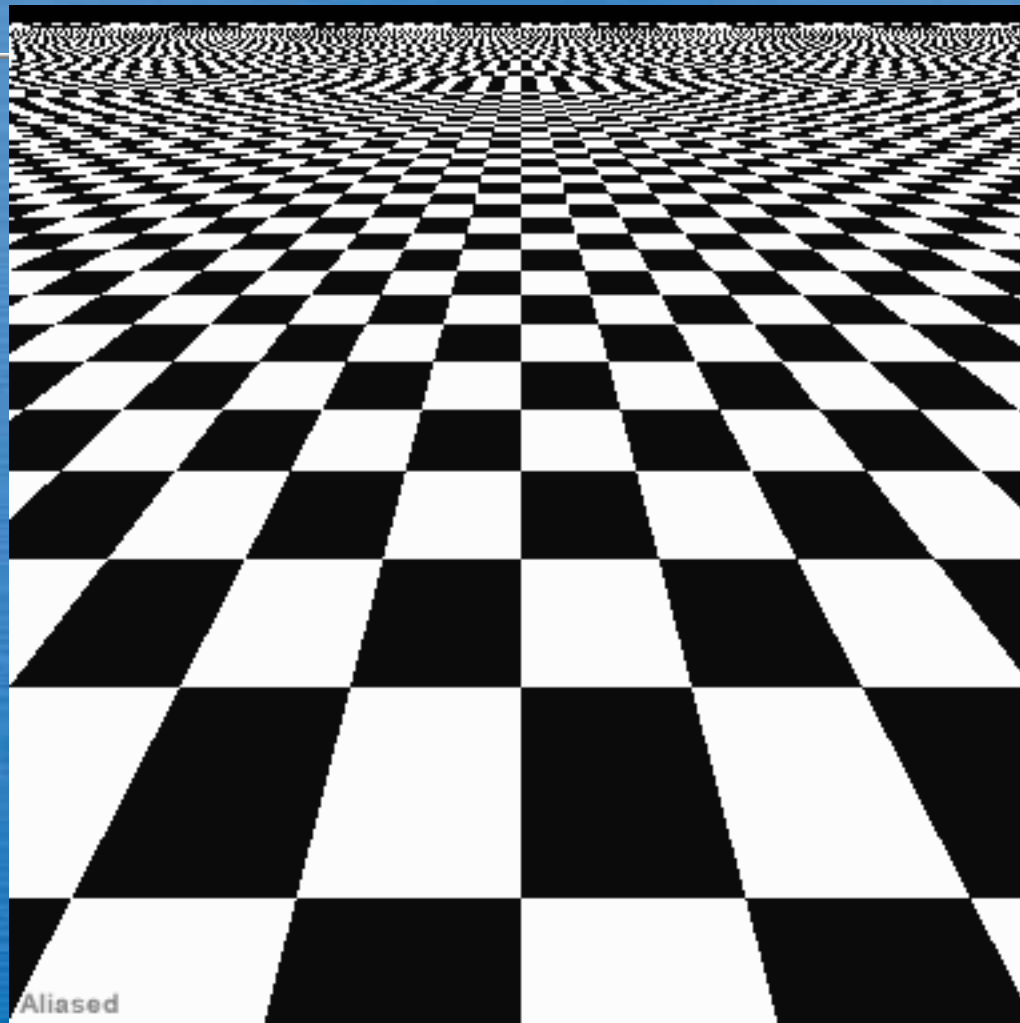


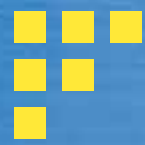
Antialiasing



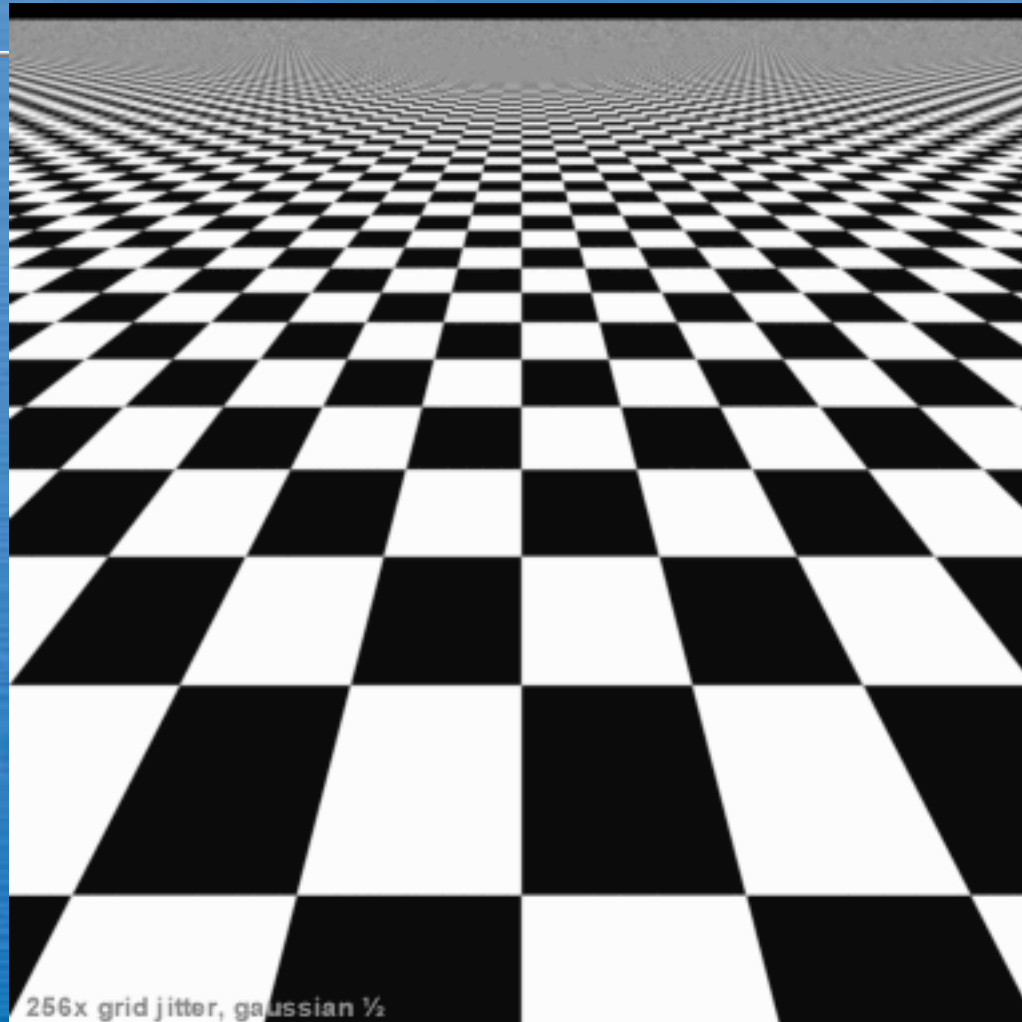


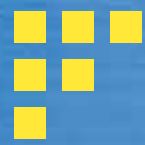
Antialiasing



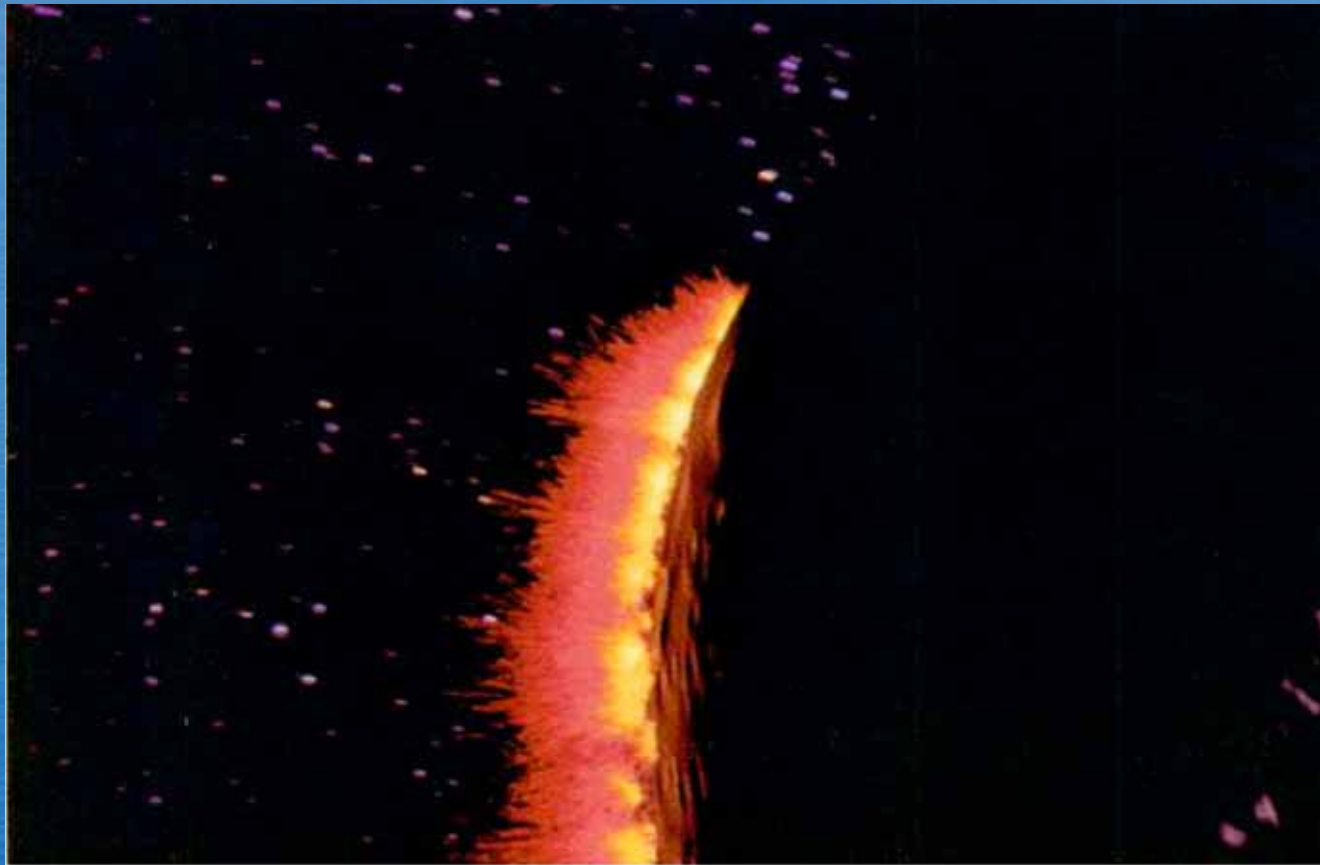


Antialiasing

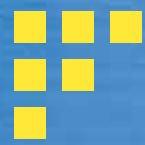




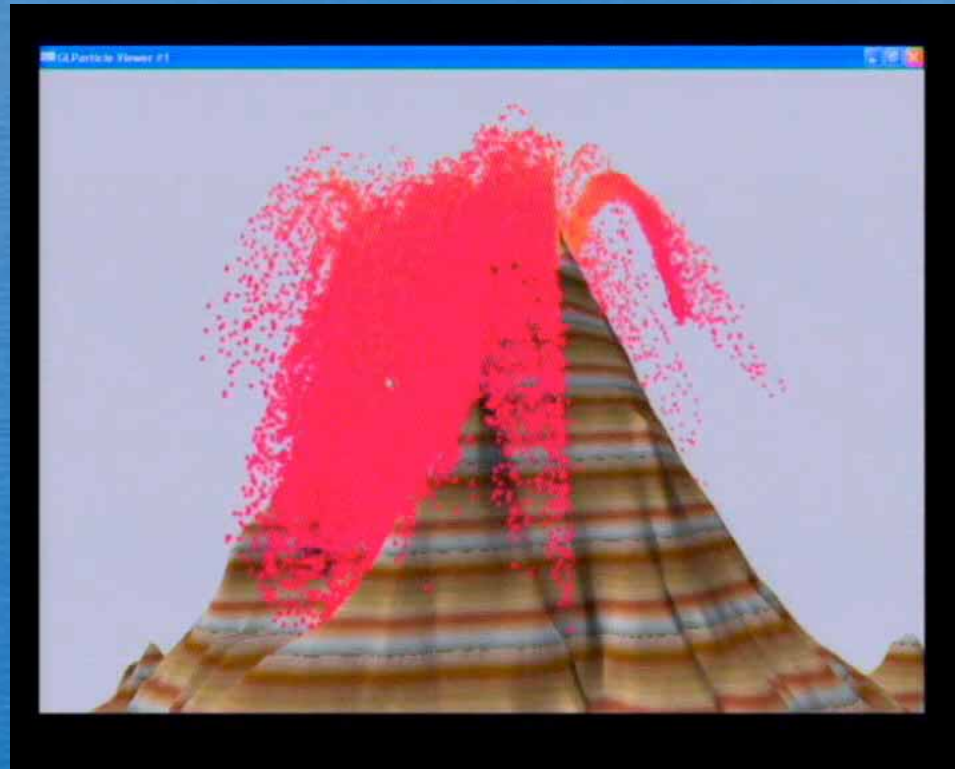
Particle Systems



Reeves, Particle Systems: A Technique for Modeling a Class of Fuzzy Objects



Particle Systems



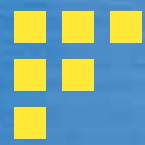
Kipfer et al., UberFlow: A GPU-based particle engine



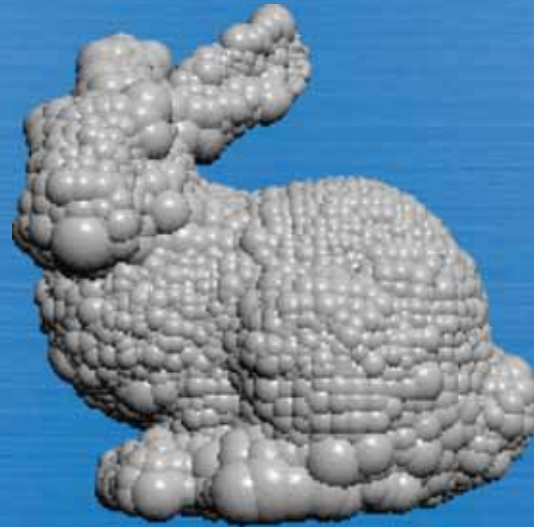
Point-Based Rendering



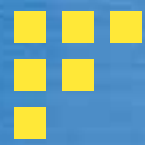
Pfister et al., Surfels: Surface Elements as Rendering Primitives



Point-Based Rendering



Rusinkiewicz and Levoy,
QSplat: A Multiresolution Point Rendering System for Large Meshes



Volume Rendering





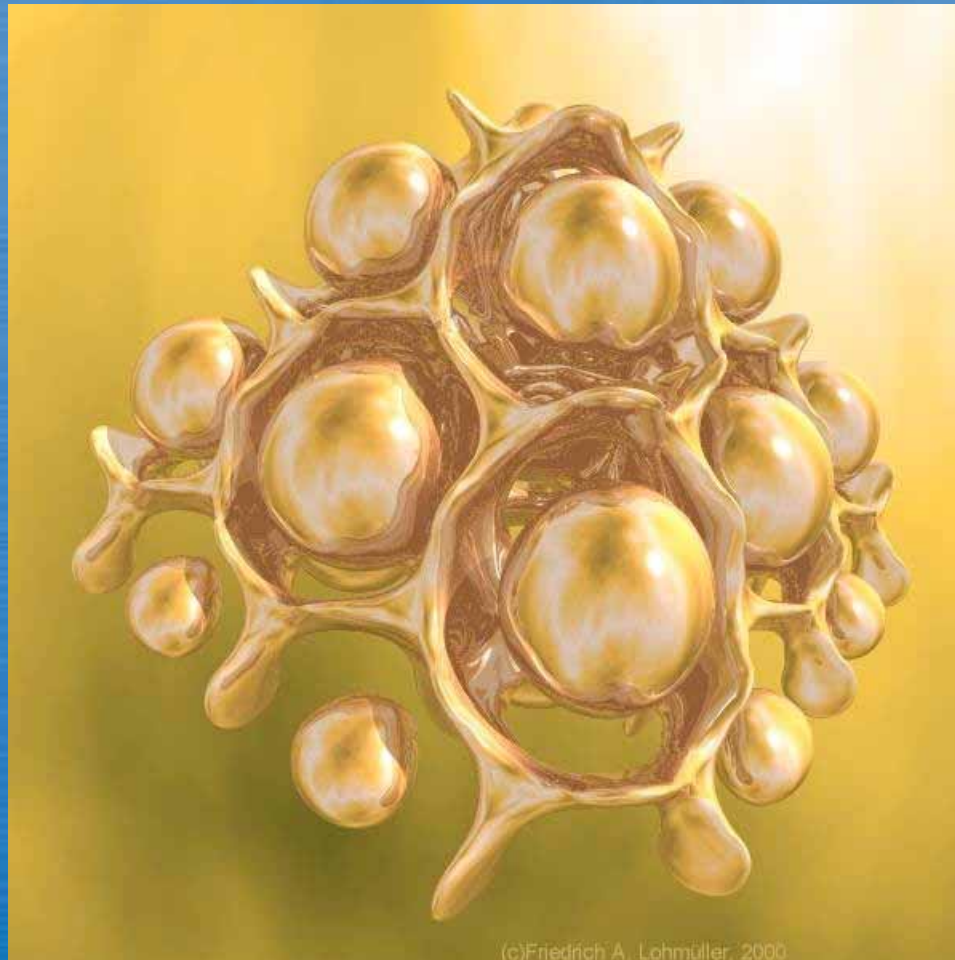
Illumination



Jan Kautz, Interactive Glossy Reflections with Arbitrary BRDFs



Ray Tracing



(c)Friedrich A. Lohmüller, 2000

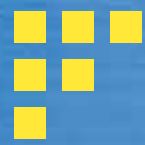
Friedrich A Lohmüller, POV-Ray Hall of Fame Gallery



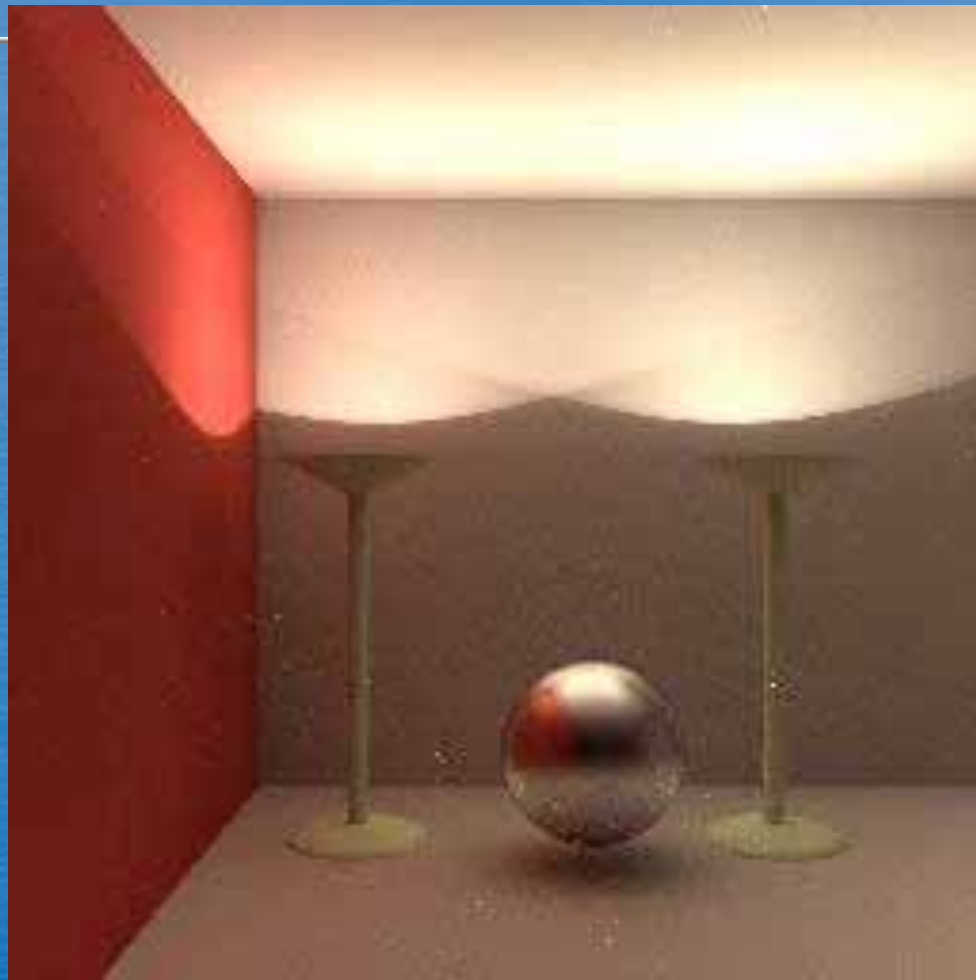
Ray Tracing



Norbert Kern, POV-Ray Hall of Fame Gallery



Global Illumination



Glenn Evans and Michael McCool

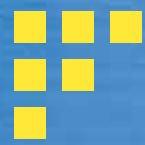


Image Based Rendering



Pat Hanrahan and Marc Levoy, Light Field Rendering

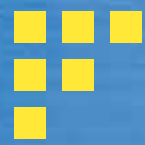
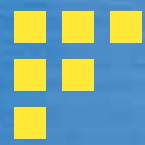


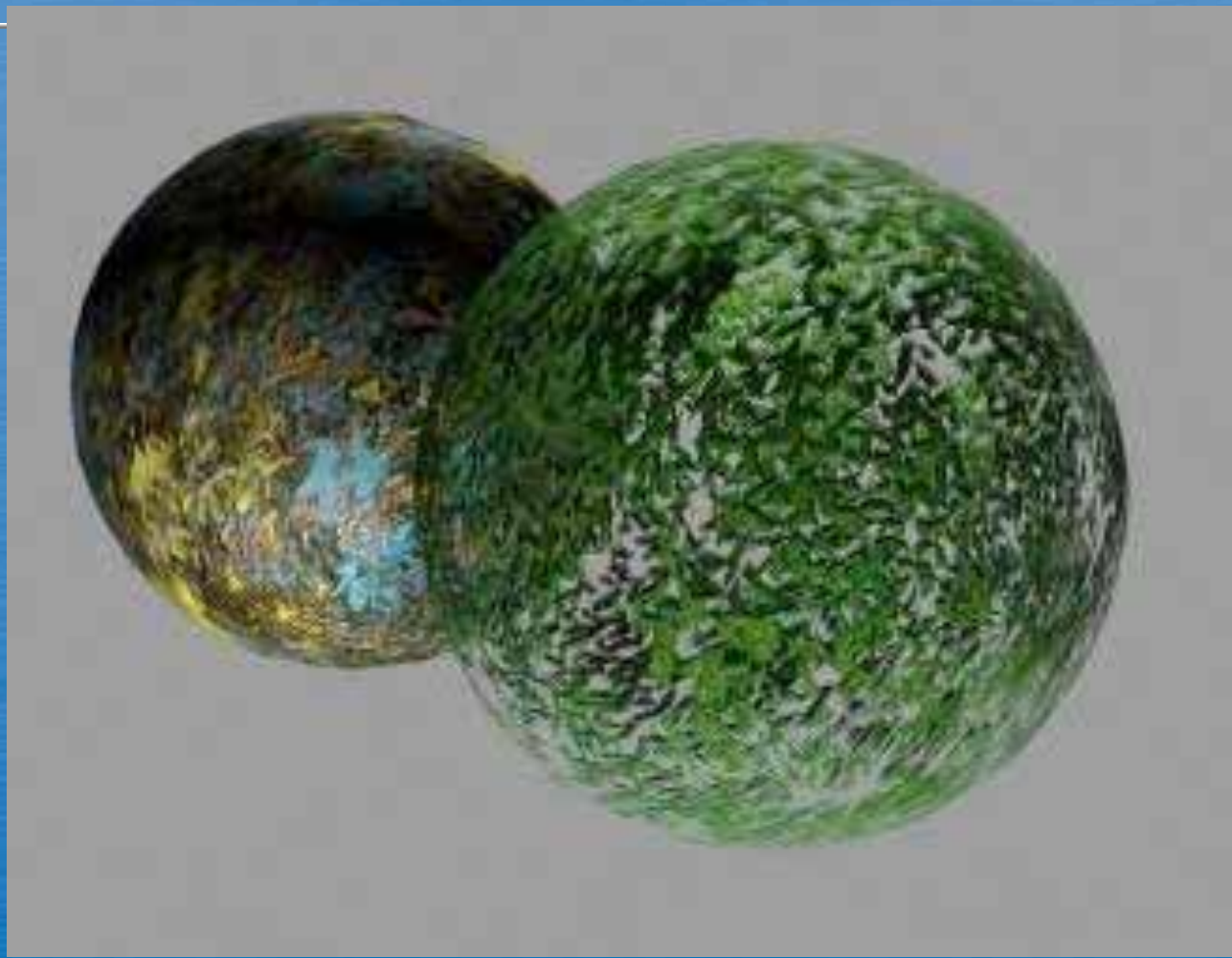
Image Based Rendering

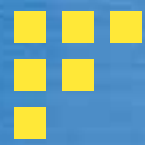


Lumigraph fly by

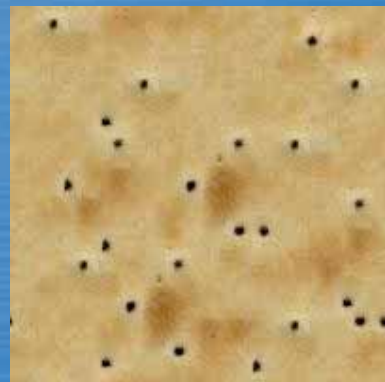


Texturing





Texture Synthesis





Non-Photorealistic Rendering



Bruce and Amy Gooch



Non-Photorealistic Rendering



Pierre-Loup Lesage, Toward Real Time Sketch-Based Exploration of Terrain