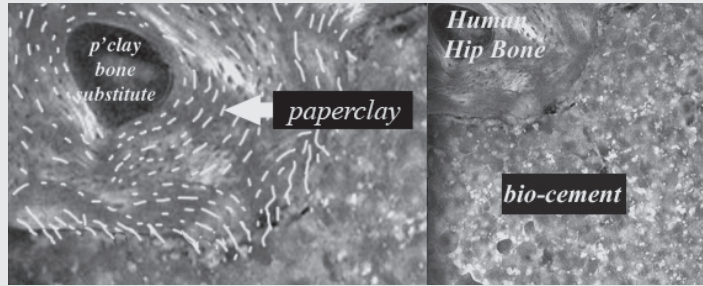


The essence of the research project:

Left: My vision sketch in exaggerated size white marks on a clear overlay over an existing micrograph shows contact between biocement (at lower right of the image) and a ceramic bone prosthesis. It will be constructed by a hybrid of cellulose fiber bearing ceramic technology evolved from both paperclay and the bubble ceramic technology of present).

Right: to compare: unaltered micrograph showing human hip bone and bio-cement join.

Rosette Gault
please contact me for more information.



Artist Vision: Custom Human Bone Prosthesis

In the set of cross section micrographs above, to right is a human bone with a bio-cement that has “adhesion problems.” Adhesion, long term, is also an issue with a metal prosthesis. To left is a close up of the same micrograph with an overlay sketch of white lines to suggest how cellulose pores might show on a micrograph had the prosthesis had been made in part of paperclay ceramic. The bio-cement could then seep a bit into the pores of the prosthesis for a better grip. To create a prosthesis bone, the process will involve aligning cellulose fiber in successive layers over top of a pre-cast hollow form of the “bubble porous” form of ceramic (detail is available). The manufacture method simulates the natural growth patterns in human bone with precision variations in density, composition, structure, contour along the way. In addition, the base ceramic material would mimic composition of human bone. For weight bearing ball and socket joints, points of bone contact need be a very hard polished smooth paperclay surface. The alignment, orientation and density of clay particles for this special purpose in paperclay can be adapted for this.