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(54) **RESORBABLE, MACRO-POROUS NON-COLLAPSING AND FLEXIBLE MEMBRANE BARRIER FOR SKELETAL REPAIR AND REGENERATION**

(75) Inventors: **Stefan M. Lemperle**, La Jolla, CA (US); **Christopher J. Calhoun**, San Diego, CA (US)

(73) Assignee: **MacroPore Biosurgery, Inc.**, San Diego, CA (US)

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This patent is subject to a terminal disclaimer.

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(58) **Field of Search** 623/16.11, 11.1; 606/69–71, 74, 151, 154

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Primary Examiner—Julian W. Woo
(74) *Attorney, Agent, or Firm*—Stout, Uxa, Buyan & Mullins LLP

(57) **ABSTRACT**

A resorbable, flexible implant in the form of a continuous macro-porous sheet is disclosed. The implant is adapted to protect biological tissue defects, especially bone defects in the mammalian skeletal system, from the interposition of adjacent soft tissues during in vivo repair. The membrane has pores with diameters from 20 microns to 3000 microns. This porosity is such that vasculature and connective tissue cells derived from the adjacent soft tissues including the periosteum can proliferate through the membrane into the bone defect. The thickness of the sheet is such that the sheet has both sufficient flexibility to allow the sheet to be shaped to conform to the configuration of a skeletal region to be repaired, and sufficient tensile strength to allow the sheet to be so shaped without damage to the sheet. The sheet provides enough inherent mechanical strength to withstand pressure from adjacent musculature and does not collapse.

156 Claims, 23 Drawing Sheets