The selection of autologous graft materials is widely accepted as one of the most fundamental mediums for use in most soft-tissue augmentation and reconstruction dilemmas. It provides a very versatile augmentation medium for cosmetic and reconstructive surgeons. Adipose tissue provides a readily available, autologous graft medium for which use in human autotransplantation has been documented for more than a century. The use of autologous fat as a graft medium has been fraught with skepticism by the cosmetic surgery community. This skepticism lies in the relatively inconsistent and unpredictable survival rates of autologous fat grafts to date. These results frequently necessitate the need for overcorrection of soft-tissue volume defects and increase the possibility of multiple procedures to achieve the desired volume of augmentation and symmetry. Because of these unpredictable outcomes, many studies have focused on modifying various parts of this procedure to achieve greater graft survival rates. Several studies have sought to modify and standardize the harvest procedures, whereas others have tried to provide additives that might improve graft survival. Unfortunately, many of these attempts have fallen short of their goals. Over the past decade, a better understanding of the biochemical milieu of the wound-healing process has enhanced the ability to assist healing.

This project is focused on studying the effects of enhancing fat-graft survival by augmenting the bio-