**Appendix S3: Temporal Smoothing Procedure**

 A temporal smoothing procedure is included in the model in order to avoid any numerical instability that might occur as a result of rapid changes in material properties. An array of *k* values is defined and initially the properties of granulation tissue are inputted into this array. After the first iteration (*i* = 1), the material property of the predicted tissue phenotype is placed at the end of the array. All existing properties are moved along one position and the *i*th value in the array is deleted. Should this be performed a second time the array would look like:

 (A3)

At the *k*th iteration (*i* = *k)*:

 (A4)

The material properties for each iteration were calculated via:

 (A5)

For this study *k* was taken to be 10. The other material properties are calculated in a similar manner.