Table of Content

1	Introduction	1
2	Biological background	1
3	Allen-Cahn equation 3.1 Introduction and notations	
4	The model for apple chimeras 4.1 Justifying the model: genetic potential	
5	Looking for geometrical solutions: mean curvature flow 5.1 Calculus for finding the mean curvature flow equation from Allen-Cahn equation on \mathbb{R}^2 6.2 Adapting to other 2-manifolds	8 8 11
6	Stationary solutions on other closed non-self-intersecting surfaces 6.1 Existence of a geodesic: the theorem of the three geodesics	
7	Conclusion	15
8	Acknowledgements	15
9	Bibliography	16