

Accepted Manuscript

A Computational model for the joint onset and development

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PII: S0022-5193(18)30176-0
DOI: [10.1016/j.jtbi.2018.04.015](https://doi.org/10.1016/j.jtbi.2018.04.015)
Reference: YJTBI 9430



To appear in: *Journal of Theoretical Biology*

Received date: 26 September 2017
Revised date: 5 April 2018
Accepted date: 9 April 2018

Please cite this article as: Kalenia M. Márquez-Flórez , James R. Monaghan , Sandra J. Shefelbine , Angélica Ramirez-Martínez , Diego A. Garzón-Alvarado , A Computational model for the joint onset and development, *Journal of Theoretical Biology* (2018), doi: [10.1016/j.jtbi.2018.04.015](https://doi.org/10.1016/j.jtbi.2018.04.015)

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HIGHLIGHTS

- We developed a mathematical model for Turing patterns that predicts joint cleavage sites
- Our prediction of the gene expression during development agrees with molecular expression profiles of joint development reported in literature
- From a mesenchymal ‘bud’ of a phalange, the model predicts growth, joint cleavage, joint morphology, and articular cartilage formation
- We proposed a simplified mathematical model of the regulatory mechanisms that influence the formation of joint

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