LIVIA ZARNESCU YANEZ

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SUMMARY OF QUALIFICATIONS

Technical

- Recent PhD graduate passionate about in finding meaning in complex data sets
- Extensive programming experience and theoretical background in statistics, machine learning and image processing
- Experienced in working with noisy, real-world data sets and building predictive models of embryo development to improve clinical outcomes

Non-technical

- Experience in teaching programming skills and designing hands-on workshops to other scientists
- Gave invited podium presentations at international conferences and wrote research grants which were successfully funded
- Gathered a diverse team of researchers and clinicians to conduct experiments and co-author publications in high-impact journals
- Mentored undergraduates and rotation students

SKILLS

Programming Proficient in C++, R, Python, Matlab and associated statistics/machine learning toolkits. Experience with Javascript, SQL and Unix shell scripting.

Data analysis Regression, classification, feature selection, clustering, hypothesis testing, signal processing, image processing, data visualization

EDUCATION

9/10 – 9/16 **Stanford University**, Stanford, CA
Ph.D. Bioengineering

Thesis Title: Baby's first hug: understanding the relationship between embryo biomechanical properties and developmental potential

Relevant coursework: Machine Learning, Statistical Signal Processing, Programming Abstractions, Computer Organization and Systems, Image Processing, Decision Making under Uncertainty

8/06 – 5/10 **University of Arizona**, Tucson, AZ
B.S. Optical Sciences and Engineering, B.S. Mathematics

WORK EXPERIENCE

1/12 – present **Camarillo Lab,** Stanford University
My research focuses on using optical, biomechanical and genomic data to develop better predictors of human embryo development. I have experience in:

- Applying methods from statistics and machine learning to make predictions about embryo viability. Compared to the clinical gold standard, my method can predict live birth in an animal model with nearly 50% higher accuracy.
- Drawing meaningful conclusions from large amounts of sequencing data. I was able to identify new genes which are vital for embryo development.

- Developing image processing algorithms to automate analysis of embryo imaging data. I was able to identify and validate new image features which indicate than an embryo was damaged by freezing and thawing.

AWARDS AND HONORS

9/15 – 6/16 **Siebel Graduate Fellowship**

10/14 **Reviewer's Choice Award** (Biomedical Engineering Society Conference)

5/11 – 5/14 **National Science Foundation Graduate Research Fellowship**

9/10 – 9/15 **Stanford Graduate Fellowship**

PUBLICATIONS

L Z Yanez, D Camarillo. Microfluidic analysis of oocyte and embryo biomechanical properties to improve outcomes in assisted reproductive technologies. *Molecular Human Reproduction*, accepted.

L Z Yanez, J Han, B Behr, R Reijo Pera, D Camarillo. Human oocyte developmental potential is predicted by mechanical properties within hours after fertilization. *Nature Communications* 2016.

L Zarnescu, M Leung, M Abeyta, H Sudkamp, T Baer, B Behr, AK Ellerbee. Label-free characterization of vitrification-induced morphology changes in single-cell embryos with full-field optical coherence tomography. *Journal of Biomedical Optics* 2015.

L Zarnescu, M Abeyta, T Baer, B Behr, AK Ellerbee . Assessment of imaging parameters correlated with the effects of cryopreservation on embryo development. *Proceedings of SPIE* 2014.

L Wu, **L Zarnescu**, V Nangia, B Cam, D Camarillo. A head impact detection system using SVM classification and proximity sensing in an instrumented mouthguard. *IEEE Transactions on Biomedical Engineering* 2014.

PATENTS

L Zarnescu, D Camarillo, J Han, R Reijo Pera, S Chavez, B Behr. Mechanical Biomarkers for Oocyte and Embryo Viability. U.S. Patent No. US9179935 B2, granted 11/10/2015

TEACHING AND VOLUNTEER EXPERIENCE

7/16 **Biomechanics Bootcamp**, Stanford University
Taught short hands-on course on techniques to measure cell mechanics

1/10 – 5/15 **Tutor**, Boys and Girls Club, East Palo Alto, CA
Program leader from 2013-2015
Provided SAT tutoring to local low-income high school students

9/11 – 12/11 **Teaching Assistant**, Department of Bioengineering, Stanford University
Class: Molecular and Cellular Bioengineering (BioE 300A)
Professor: Zev Bryant

8/08 – 5/10 **Optics Outreach Program**, University of Arizona
Designed and taught optics lectures and labs in high school physics classes around the Tucson area