# STATEMENT

Enjoying quantifying things that are difficult to quantify. Experience in: Cosmetic Formulation Development, In Vivo and In Vitro Product Performance Test Design, Image Analysis and Computer Simulations, Imaging and Videography.

# EMPLOYMENT

**Senior Scientist, Product Performance Testing at L'Oréal** August 2013 - Present (1 year 3 months)

Design, manage and conduct *in vivo* and *in vitro* testing to predict real world performance of lipsticks, mascaras, eyeliners and foundations

Quantify consumer perception, and in vitro and in vivo performance of products in terms of: color, shine, texture, evenness, smoothness, wrinkles, clumpiness, tack, rigidity, softness, drag. Instrument used: texture analyzer, spectrophotometers, colorimeters, studio lighting systems, and high-speed and industrial imaging systems

Develop image analysis software and methods to quantify color, shine, texture, of skin, hair, and lips, and to automate mass tasks like cropping, renaming, stitching (Matlab)

Data visualization and analysis to determine performance; non-parametric and parametric analysis; statistical models *in silico* (Excel, Matlab). Designed visualization of hair evaluation to maximize interpretation and contractor was hired to adapt this new design into current software. Liason with Scientific Computing team to create foundation for Big Data in product performance testing.

Write and edit technical reports, SOPs, lab room designs, and presentations to U.S. labs and counterparts in France

Manage longterm performance evaluation plans for L'Oreal USA's newest disruptive lipstick and mascara technologies. Maintain SOPs, instrument calibration and train technicians.

**Chemist, Hair Product Formulation at L'Oréal S**eptember 2009 - August 2013 (4 years)

Research and formulation of shampoos, conditioners, treatments, serums, bi-phases. Launched 20 SKUs for Redken, L'Oreal Paris, Pureology, Kiehl's and Garnier.

Projects in detergent and emulsion systems, sulfate-free, anti-dandruff, color-retention, and salt-effects in hair, high-temperature effects on hair; microscopy (polar, DIC, fluorescent, SEM), DSC, hair analysis, and rheology (Rheomat and Brookfield). Raw material substitution to reduced cost of three current market formulas by over 18%.

Cross-functional and effective communicator with mini- and full-scale plant facilities when negotiating appropriate processing parameters; including with analytical, evaluation and instrumental testing teams.

Awarded $750 for three out-of-box ideas (2010, 2011 and 2012) in nationwide company competition; e.g. an interactive graphical database to analyze and compare formula compositions, and 3D shape pasting.

Trained temporary and fulltime employee; lab safety manager 2 years; set up lab recycling station to reduce waste and plastic container expenses.

**Intern at L'Oréal USA** June 2009 - August 2009 (3 months)
Formulated and tested water-proof and SPF boosting sunscreen technologies; conducted instrumental evaluations in house; presented final results to executive board.

**Lecturer at Rutgers University** October 2008 - January 2009 (4 months)
Lectured class of 90 students on Modeling Membrane Electrophysiology. Designed final exam, problem sets, held weekly office hours and final review session.

**President, BioEngineering Student Society, Rutgers University** Sept 2008 - Jan 2009 (5 months)
Created the first ever science/graphic competition for graduate research at Rutgers University. "Go Figure" competition is still running today, 6 years later.
Responsible for budget, team meetings and research-luncheons for 80 Biomedical Engineering graduate students and 75 professors.

**Research Associate at Catalent Pharma Solutions** June 2007 - May 2008 (1 year)
Created thermodynamic computer model to analyze 3D drug capsules to successfully isolated bottleneck during processing of gel drug capsules. Awarded one-year graduate school tuition.

# EDUCATION

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| **M.S, Biomedical Engineering, Rutgers University 2009.**<br><br>Created a multi-scale, 3D computer model (Matlab/C) simulating cellular adhesion during development, wound healing and cell migration. | Visiting Researcher, Geophysics/Computational Physics, 2008, Eidgenössische Technische Hochschule Zürich<br><br>Visiting Student, Biological and Physical Sciences, 2007, Complex Physical, Biological and Social Systems, New England Complex Systems Institute<br><br>**B.S., High Honors, Biomedical Engineering, Rutgers University 2006.**<br>Developed a pattern-matching, image analysis software to quantify the branching of mice hippocampal neuron images (Matlab) |

# PUBLICATIONS

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| Substrates. A. G. Voyiadjis, M. Doumi, E. Curcio and T. Shinbrot. Annals of Biomedical Engineering, Vol. 39, No. 1, January 2011, pp. 559–569. Created a statistical model in Matlab simulating neuron growth and pathfinding to compare against collaborator's cell culture experiments. | Topography of inland deltas: observations, modeling, experiments. H.J. Seybold, P. Molnar, D. Akca, M. Doumi, M. Cavalcanti Tavares, T. Shinbrot, J.S. Andrade Jr., W. Kinzelbach, H.J. Herrmann. Geophysical Research Letters 37, (2010) L08402. Created a 1m x 1m physical model of river delta with time-lapse photography and sand grain selection, and conducted experiments to compare against actual real world river delta formation. | *Acknlowledged for building and physical model of a hopper and video apparatus to collect and analyze granular flow data:* Granular flow transitions on sinusoidal surfaces. J. Fluid Mech. 556, pp. 253-269. 2006. Authors: CARLOS E. CAICEDO-CARVAJAL a1 BENJAMIN J. GLASSER. ublished data and results in Granular Flow Transitions on Sinusoidal Surfaces. |

# SKILLS

| Presentation and Visualization | Statistics and Programming | Language | Management | Knowledge of |
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| Pen and ink, Powerpoint, Keynote, Photoshop, Illustrator, Premiere, Final Cut, Motion, After Effects, 101,201,301 UCB NY Improv | Matlab, Sigmaplot, Labview | Spanish (Professional working proficiency), French (Limited working proficiency) | Method development, evaluation planning for technologies, product development for Redken, Pureology, L'Oreal Paris and Kiehl's, trained mentor | Cell biology, surfactant chemistry, emulsion chemistry, polymer chemistry, bright/ fluroresecent/DSC/SEM microscopy |

# ART

**Visiting Artist at Gowanda Middle School**, N.Y., November 7 2014

Taught 5th grade students about the relationship between science and art, and about adapting to mistakes in freehand, permanent-ink drawings. Thanks to Principle David Smith and science teacher Darlene Sarver.

**Artist and Founder of Non-Profit Blehdi Science Art**, www.blehdi.com, January 2013 - Present (1 year 10 months)

Creating original art pieces - pro bono - for K-12 science and math educators. What can students can get out of artwork that hides a scientific message? The goal is to spark the curiosity of students and create a “teaching moment” in the classroom.

**Illustrator for The Closest Star** by Liwayway Piano (self-published, 2013) http://www.goodreads.com/book/show/17260240-the-closest-star

**President and Founder, French Press Club**, September 2011 to 2013

Corresponding information on sustainability, health and productivity in a corporation to employees.

**Collective Artist and Videographer, Phoenix Theory Art and Furniture** Gallery,Bogota, New Jersey. http://phoenixtheoryshop.com, November 2012 to 2013

Contributing member and videographer of promotional videos for art

**Student, Presenting Data and Information**, Edward Tufte Workshop, NYC, 2007

**Graphics Producer and Shooter/Editor at Rutgers University School of Communication and Information** June 2004 - May 2006 (2 years)

Established first ever Graphics Producer position at Rutgers Television to design 12 original, professional animations and graphics for award-winning news shows, network logos and IDs.

Awarded "Award of Distinction" at 11th Annual Communicator Award 2004, for creative promotional video (received Jan 2005)