

# JULIAN W. LANDAW, M.D., Ph.D.

Resident in Anesthesiology, CA-2



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🔗 URL: <https://connects.catalyst.harvard.edu/Profiles/profile/182381755>

## Education

- 2022 – present    📖 **Residency**, Anesthesiology  
Brigham and Women's Hospital, Boston, MA  
Expected Graduation July 2025
- 2021 – 2022    📖 **Internship**, Internal Medicine  
Brigham and Women's Hospital, Boston, MA
- 2013 – 2021    📖 **M.D.**  
University of California, Los Angeles  
UCLA-Caltech Medical Scientist Training Program (MSTP)
- 2015 – 2019    📖 **Ph.D.**, Biomathematics  
University of California, Los Angeles  
Thesis title: *Cardiac Memory in the Genesis of Arrhythmias*
- 2008 – 2012    📖 **B.A.**, Mathematics and Statistics  
University of California, Berkeley  
Highest Honors, Major GPA 4.0

## Training Grants

- 2013 – 2015, 2019 – 2021    📖 UCLA-Caltech Medical Scientist Training Program (T32 Gmoo8o82)  
UCLA David Geffen School of Medicine and Caltech
- 2018 – 2021    📖 NIH National Heart, Lung, and Blood Institute (NHLBI) NRSA Service Award for Individual Predoctoral MD/PhD Degree Fellows (F3o HL14o846)  
Project Title: *Arrhythmogenic Mechanisms in Brugada Syndrome*  
🔗 URL: <https://reporter.nih.gov/project-details/9611280>
- 2016 – 2018    📖 UCLA Systems and Integrative Biology Training Program (T32 Gmoo8185)

## Honors and Awards

- 2023    📖 Best Talk in the “Brigham Anesthesia Kudos Series”  
Title: *A Story of MAC to VA-ECMO*  
Brigham and Women's Hospital, Boston, MA
- 2022    📖 Dunne Award  
*Awarded to medical intern(s) by their peers for their compassion and dedication to patient care*  
Brigham and Women's Hospital, Boston, MA
- 2017    📖 UCLA Graduate Division Award  
University of California, Los Angeles
- 2012    📖 Dorothea Klumpke Roberts Prize  
*For truly exceptional scholarship in mathematics*  
University of California, Berkeley
- 📖 Phi Beta Kappa  
University of California, Berkeley
- 2008 – 2012    📖 UC Berkeley Dean's List  
University of California, Berkeley

## Honors and Awards (continued)

■ UC Berkeley Department of Mathematics Honors Program  
University of California, Berkeley

## Research Publications

### PhD Thesis

- 1 **J. W. Landaw**, “Cardiac memory in the genesis of arrhythmias,” Ph.D. dissertation, University of California, Los Angeles, 2019. [URL: https://escholarship.org/uc/item/49z2b34v](https://escholarship.org/uc/item/49z2b34v).

### Journal Articles

- 1 X. Wang, **J. Landaw**, and Z. Qu, “Intracellular ion accumulation in the genesis of complex action potential dynamics under cardiac diseases,” *Physical Review E*, vol. 109, p. 024 410, 2024. [DOI: 10.1103/PhysRevE.109.024410](https://doi.org/10.1103/PhysRevE.109.024410).
- 2 **J. Landaw**, X. Yuan, P.-S. Chen, and Z. Qu, “The transient outward potassium current plays a key role in spiral wave breakup in ventricular tissue,” *American Journal of Physiology-Heart and Circulatory Physiology*, vol. 320, no. 2, H826–H837, 2021. [DOI: 10.1152/ajpheart.00608.2020](https://doi.org/10.1152/ajpheart.00608.2020).
- 3 C. Huang, Z. Song, **J. Landaw**, and Z. Qu, “Spatially discordant repolarization alternans in the absence of conduction velocity restitution,” *Biophysical journal*, vol. 118, no. 10, pp. 2574–2587, 2020. [DOI: 10.1016/j.bpj.2020.02.008](https://doi.org/10.1016/j.bpj.2020.02.008).
- 4 **J. Landaw**, Z. Zhang, Z. Song, *et al.*, “Small-conductance  $\text{Ca}^{2+}$ -activated  $\text{K}^+$  channels promote J-wave syndrome and phase 2 reentry,” *Heart rhythm*, vol. 17, no. 9, pp. 1582–1590, 2020. [DOI: 10.1016/j.hrthm.2020.04.023](https://doi.org/10.1016/j.hrthm.2020.04.023).
- 5 **J. Landaw** and Z. Qu, “Bifurcations caused by feedback between voltage and intracellular ion concentrations in ventricular myocytes,” *Physical review letters*, vol. 123, no. 21, p. 218 101, 2019. [DOI: 10.1103/PhysRevLett.123.218101](https://doi.org/10.1103/PhysRevLett.123.218101).
- 6 **J. Landaw** and Z. Qu, “Control of voltage-driven instabilities in cardiac myocytes with memory,” *Chaos: An Interdisciplinary Journal of Nonlinear Science*, vol. 28, no. 11, 2018. [DOI: 10.1063/1.5040854](https://doi.org/10.1063/1.5040854).
- 7 **J. Landaw** and Z. Qu, “Memory-induced nonlinear dynamics of excitation in cardiac diseases,” *Physical Review E*, vol. 97, no. 4, p. 042 414, 2018. [DOI: 10.1103/PhysRevE.97.042414](https://doi.org/10.1103/PhysRevE.97.042414).
- 8 **J. Landaw**, A. Garfinkel, J. N. Weiss, and Z. Qu, “Memory-induced chaos in cardiac excitation,” *Physical review letters*, vol. 118, no. 13, p. 138 101, 2017. [DOI: 10.1103/PhysRevLett.118.138101](https://doi.org/10.1103/PhysRevLett.118.138101).
- 9 **J. Landaw**, A. Garfinkel, J. N. Weiss, and Z. Qu, “Transient outward potassium current and its arrhythmogenic dynamics in cardiac myocytes,” *Biophysical Journal*, vol. 110, no. 3, 272a, 2016. [DOI: 10.1016/j.bpj.2015.11.1479](https://doi.org/10.1016/j.bpj.2015.11.1479).
- 10 T. Radivoyevitch, L. Hlatky, **J. Landaw**, and R. K. Sachs, “Quantitative modeling of chronic myeloid leukemia: Insights from radiobiology,” *Blood, The Journal of the American Society of Hematology*, vol. 119, no. 19, pp. 4363–4371, 2012. [DOI: 10.1182/blood-2011-09-381855](https://doi.org/10.1182/blood-2011-09-381855).

### Conference Proceedings

- 1 **J. Landaw**, “Modeling the genesis of arrhythmias,” in *UCLA-Caltech Medical Scientist Training Program (MSTP) Annual Research Conference*, Los Angeles, California, 2019.
- 2 **J. Landaw** and Z. Qu, “Mechanisms of arrhythmias caused by small conductance calcium-activate potassium current ( $I_{\text{SK}}$ ) in early repolarization syndrome,” in *UCLA Cardiovascular Symposium*, Los Angeles, California, 2018.
- 3 **J. Landaw** and Z. Qu, “Mechanisms of arrhythmias caused by small conductance calcium-activate potassium current ( $I_{\text{SK}}$ ) in early repolarization syndrome,” in *The Heart By Numbers: Integrating Theory, Computation and Experiment to Advance Cardiology. Organized by the Biophysical Society (BPS), the Max Delbrück Center for Molecular Medicine Berlin, the German Center for Cardiovascular Diseases (DZHK), and the Berlin Institute of Health*, Berlin, Germany, 2018.

- 4 **J. Landaw**, A. Garfinkel, J. N. Weiss, and Z. Qu, “Transient outward potassium current and its arrhythmogenic dynamics in cardiac myocytes,” in *Biophysical Society 60th Annual Meeting*, Los Angeles, California, 2016.
- 5 T. Radivoyevitch, L. Hlatky, **J. Landaw**, and R. K. Sachs, “Modeling chronic myeloid leukemia (CML) mathematically: Insights from radiobiology,” in *National Cancer Institute, Integrative Cancer Biology Program NCI-ICBP Mathematical Modeling Meeting*, Tampa, Florida, 2012.
- 6 K. Harmon, **J. Landaw**, J. Miller, and N. Ranu, “Analyzing biological systems under an optical trap,” in *National Cancer Institute, Physical Sciences-Oncology Center Meeting, Bay Area Physical Sciences-Oncology Center Site Visit*, 2010.

## Teaching Experience


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| 2023        | <ul style="list-style-type: none"> <li>■ Resident Didactics Lecturer<br/><i>Lectured first year residents in anesthesiology at Brigham and Women’s Hospital</i><br/>Brigham and Women’s Hospital, Boston, MA</li> </ul>   |
| 2016 – 2018 | <ul style="list-style-type: none"> <li>■ Instructor for Problem-Based Learning (PBL)<br/><i>Prepared for and facilitated discussion of case-based scenarios for first-year medical students during their first two months of medical school</i><br/>David Geffen School of Medicine at University of California, Los Angeles</li> </ul>   |
| 2014 – 2016 | <ul style="list-style-type: none"> <li>■ Student Organizer of Experimental Statistics in Medicine Selective<br/><i>Co-founding member of course teaching statistics to first and second year medical students</i><br/><i>Taught basic programming in R and bootstrapping methods for analyzing clinical data</i><br/>David Geffen School of Medicine, University of California, Los Angeles</li> <li>■ RAP/PREP MCAT Instructor<br/><i>Taught MCAT biology to disadvantaged students and students reapplying for medical school</i><br/>David Geffen School of Medicine, University of California, Los Angeles</li> </ul> |
| 2013        | <ul style="list-style-type: none"> <li>■ Grader for upper-division course. Instructor: Dr. Per-Olof Persson<br/><i>Second semester course in Numerical Analysis</i><br/><i>Graded homework for over 33 students</i><br/>Department of Mathematics, University of California, Berkeley</li> </ul>  |
| 2012        | <ul style="list-style-type: none"> <li>■ Grader for lower-division course. Instructor: Dr. Mira Peterka<br/><i>Second semester course in Calculus</i><br/><i>Graded homework for over 30 students</i><br/>Department of Mathematics, University of California, Berkeley</li> <li>■ Grader for upper-division course. Instructor: Dr. Eliana Hechter<br/><i>Course titled “Mathematical and Computational Methods in Molecular Biology”</i><br/><i>Graded homework for over 30 students</i><br/>Department of Mathematics, University of California, Berkeley</li> </ul>   |

## Skills

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| Languages   | <ul style="list-style-type: none"> <li>■ English, proficient in French</li> </ul>   |
| Coding      | <ul style="list-style-type: none"> <li>■ Extensive experience in C, C++, CUDA, Python, R, MATLAB, <math>\text{\LaTeX}</math></li> </ul>   |
| Mathematics | <ul style="list-style-type: none"> <li>■ Mathematical and Computational Biology, Nonlinear Dynamics and Chaos, Numerical Analysis, Differential Equations, Partial Differential Equations, Probability, Statistics, Stochastic Processes</li> </ul> |

## Hobbies and Other Activities

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- Chess  - FIDE (World Chess Federation) Master  
- National Master  
- Winner of multiple internationally ranked tournaments, including the American Open in 2011 and the Denker Tournament of High School Champions in 2008