Stanford

Roxana Daneshjou, MD, PhD

Assistant Professor of Biomedical Data Science and of Dermatology

Department of Biomedical Data Science

CLINICAL OFFICES

- **General Dermatology Clinic at Hoover Pavilion**

  211 Quarry Rd

  3rd Fl

  Palo Alto, CA 94304

  Tel (650) 723-6316 **Fax** (650) 721-3476

Bio

BIO

Dr. Daneshjou studied Bioengineering at Rice University before matriculating to Stanford School of Medicine where she completed her MD and a PhD in Genetics with Dr. Russ Altman as part of the medical scientist training program. She completed dermatology residency at Stanford as part of the research track and completed a postdoc in Biomedical Data Science with Dr. James Zou. She currently is the assistant director of the Center of Excellence for Precision Heath & Pharmacogenomics, director of informatics for the Stanford Skin Innovation and Interventional Research Group (SIIRG), a founding member of the Translational AI in Dermatology (TRAIND) group, and a faculty affiliate of Human-centered Artificial Intelligence (HAI) and the AI in Medicine and Imaging (AIMI) centers.

CLINICAL FOCUS

- Dermatology

ACADEMIC APPOINTMENTS

- Assistant Professor, Department of Biomedical Data Science
- Assistant Professor, Dermatology

HONORS AND AWARDS

- Stanford Medicine TEDMED Student Ambassador, TEDMED (2015)
- Resident Research Symposium 2019 Everett C. Fox Memorial Award, American Academy of Dermatology (2019)
- Paul and Daisy Soros Fellowship for New Americans, Paul and Daisy Soros Fellowship for New Americans (2014-2016)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Social Media Editor, Journal of Investigative Dermatology (2020 - present)
- Editorial Trainee, British Journal of Dermatology (2020 - 2020)
- Board of Trustees Member, Paul and Daisy Soros Fellowship for New Americans (2019 - present)

PROFESSIONAL EDUCATION

- Board Certification: Dermatology, American Board of Dermatology (2020)
- Medical Education: Stanford University School of Medicine (2016) CA
- Residency: Stanford University Dermatology Residency (2020) CA
- Internship: Kaiser Permanente Santa Clara Internal Medicine Residency (2017) CA

Teaching

COURSES

2023-24

- Biomedical Informatics Student Seminar: BIODS 201, BIOMEDIN 201 (Spr)

Publications

PUBLICATIONS

- **Generation of a Melanoma and Nevus Data Set From Unstandardized Clinical Photographs on the Internet.** *JAMA dermatology*
  Cho, S. I., Navarrete-Dechent, C., Daneshjou, R., Cho, H. S., Chang, S. E., Kim, S. H., Na, J. I., Han, S. S.
  2023

- **Skin Tone Analysis for Representation in Educational Materials (STAR-ED) using machine learning.** *NPJ digital medicine*
  Tadesse, G. A., Cintas, C., Varshney, K. R., Staar, P., Agunwa, C., Speakman, S., Jia, J., Bailey, E. E., Adelekun, A., Lipoff, J. B., Onyekaba, G., Lester, J. C., Rotemberg, et al
  2023; 6 (1): 151

- **Best Practices for Clinical Skin Image Acquisition in Translational Artificial Intelligence Research.** *The Journal of investigative dermatology*
  Phung, M., Muralidharan, V., Rotemberg, V., Novoa, R. A., Chiou, A. S., Sadée, C. Y., Rapaport, B., Yekrang, K., Bitz, J., Gevaert, O., Ko, J. M., Daneshjou, R.
  2023; 143 (7): 1127-1132

- **Development and Clinical Evaluation of an Artificial Intelligence Support Tool for Improving Telemedicine Photo Quality.** *JAMA dermatology*
  Vodrahalli, K., Ko, J., Chiou, A. S., Novoa, R., Abid, A., Phung, M., Yekrang, K., Petrone, P., Zou, J., Daneshjou, R.
  2023

- **Evaluation of diagnosis diversity in artificial intelligence datasets: a scoping review.** *The British journal of dermatology*
  Chen, M. L., Rotemberg, V., Lester, J. C., Novoa, R. A., Chiou, A. S., Daneshjou, R.
  2023; 188 (2): 292-294

- **Session Introduction: Precision Medicine: Using Artificial Intelligence to Improve Diagnostics and Healthcare.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Whirl-Carrillo, M., Brenner, S. E., Chen, J. H., Crawford, D. C., Kidzinski, L., Ouyang, D., Daneshjou, R.
  2023; 28: 257-262

- **Global dermatology talks is a virtual lecture series for equitable dissemination of dermatologic information.** *JAAD international*
  Ederaine, S. A., Kimball, K. M., Enwereji, N., Ftouni, R., Daneshjou, R., Junejo, M. H., Damsky, W., Richmond, J. M.
  2022; 9: 116-118

- **Disparities in dermatology AI performance on a diverse, curated clinical image set.** *Science advances*
  Daneshjou, R., Vodrahalli, K., Novoa, R. A., Jenkins, M., Liang, W., Rotemberg, V., Ko, J., Swetter, S. M., Bailey, E. E., Gevaert, O., Mukherjee, P., Phung, M., Yekrang, et al
  2022; 8 (32): eabq6147

- **Reducing Language Barriers in Dermatology: A Step Towards Equitable Care.** *Journal of the American Academy of Dermatology*
  De La Garza, H., Lipoff, J. B., Daneshjou, R.
  2022

- **Toward Augmented Intelligence: The First Prospective, Randomized Clinical Trial Assessing Clinician and Artificial Intelligence Collaboration in Dermatology.** *The Journal of investigative dermatology*
  Daneshjou, R.
  2022

- **Image Consent and the Development of Image-Based Artificial Intelligence-Reply.** *JAMA dermatology*
  Daneshjou, R., Rotemberg, V., International Skin Imaging Collaboration Artificial Intelligence Working Group
  2022

- **Precision Medicine: Using Artificial Intelligence to Improve Diagnostics and Healthcare.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Daneshjou, R., Brenner, S. E., Chen, J. H., Crawford, D. C., Finlayson, S. G., Kidzinski, L., Bulyk, M. L.
  2022; 27: 223-230

- **Checklist for Evaluation of Image-Based Artificial Intelligence Reports in Dermatology: CLEAR Derm Consensus Guidelines From the International Skin Imaging Collaboration Artificial Intelligence Working Group.** *JAMA dermatology*
  Daneshjou, R., Barata, C., Betz-Stablein, B., Celebi, M. E., Codella, N., Combalia, M., Guitera, P., Gutman, D., Halpern, A., Helba, B., Kittler, H., Kose, K., Liopyris, et al
  2021

- **Lack of Transparency and Potential Bias in Artificial Intelligence Data Sets and Algorithms: A Scoping Review.** *JAMA dermatology*
  Daneshjou, R., Smith, M. P., Sun, M. D., Rotemberg, V., Zou, J.
  2021

- **Research Techniques Made Simple: Scientific Communication using Twitter.** *The Journal of investigative dermatology*
  Daneshjou, R., Shmuylovich, L., Grada, A., Horsley, V.
  2021; 141 (7): 1615

- **How medical AI devices are evaluated: limitations and recommendations from an analysis of FDA approvals.** *Nature medicine*
  Wu, E., Wu, K., Daneshjou, R., Ouyang, D., Ho, D. E., Zou, J.
  2021

- **Raising the bar for Randomized Trials involving Artificial Intelligence: The SPIRIT-AI and CONSORT-AI Guidelines.** *The Journal of investigative dermatology*
  Taylor, M., Liu, X., Denniston, A., Esteva, A., Ko, J., Daneshjou, R., Chan, A., SPIRIT-AI and CONSORT-AI Working Group
  2021

- **How to evaluate deep learning for cancer diagnostics - factors and recommendations.** *Biochimica et biophysica acta. Reviews on cancer*
  Daneshjou, R., He, B., Ouyang, D., Zou, J.
  2021: 188515

- **Diversity, Race, and Health** *MED*
  Adamson, A. S., Essien, U., Ewing, A., Daneshjou, R., Hughes-Halbert, C., Ojikutu, B., Davis, M. B., Fox, K., Warner, E.
  2021; 2 (1): 6-10

- **TrueImage: A Machine Learning Algorithm to Improve the Quality of Telehealth Photos.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Vodrahalli, K., Daneshjou, R., Novoa, R. A., Chiou, A., Ko, J. M., Zou, J.
  2021; 26: 220–31

- **TrueImage: A Machine Learning Algorithm to Improve the Quality of Telehealth Photos**
  Vodrahalli, K., Daneshjou, R., Novoa, R. A., Chiou, A., Ko, J. M., Zou, J., Altman, R. B., Dunker, A. K., Hunter, L., Ritchie, M. D., Murray, T., Klein, T. E.
  WORLD SCIENTIFIC PUBL CO PTE LTD.2021: 220-231

- **Computational Challenges and Artificial Intelligence in Precision Medicine**
  Afanasiev, O., Berghout, J., Brenner, S. E., Bulyk, M. L., Crawford, D. C., Chen, J. H., Daneshjou, R., Kidzinski, L., Altman, R. B., Dunker, A. K., Hunter, L., Ritchie, M. D., Murray, et al
  WORLD SCIENTIFIC PUBL CO PTE LTD.2021: 166-171

- **Pernio-like eruption associated with COVID-19 in skin of color.** *JAAD case reports*
  Daneshjou, R., Rana, J., Dickman, M., Yost, J. M., Chiou, A., Ko, J.

2020; 6 (9): 892–97

- **Twitter Journal Clubs: Medical Education in the Era of Social Media.** *JAMA dermatology*
  Daneshjou, R., Adamson, A. S.
  2020

- **Social Media: A New Tool for Scientific Engagement.** *The Journal of investigative dermatology*
  Shmuylovich, L. n., Grada, A. n., Daneshjou, R. n.
  2020; 140 (10): 1884–85

- **ARTIFICIAL INTELLIGENCE FOR ENHANCING CLINICAL MEDICINE**
  Daneshjou, R., Kidzinski, L., Afanasiev, O., Chen, J. H., Altman, R. B., Dunker, A. K., Hunter, L., Ritchie, M. D., Murray, T., Klein, T. E.
  WORLD SCIENTIFIC PUBL CO PTE LTD.2020: 1-6

- **Genome-wide meta-analysis identifies eight new susceptibility loci for cutaneous squamous cell carcinoma.** *Nature communications*
  Sarin, K. Y., Lin, Y. n., Daneshjou, R. n., Ziyatdinov, A. n., Thorleifsson, G. n., Rubin, A. n., Pardo, L. M., Wu, W. n., Khavari, P. A., Uitterlinden, A. n., Nijsten, T. n., Toland, A. E., Olafsson, et al
  2020; 11 (1): 820

- **Increasing the visibility of dermatologic research contributions by women and underrepresented minorities.** *Journal of the American Academy of Dermatology*
  Siller, A. n., Daneshjou, R. n., Lipoff, J. B.
  2020

- **Session Intro: ARTIFICIAL INTELLIGENCE FOR ENHANCING CLINICAL MEDICINE.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Daneshjou, R., Kidzinski, L., Afanasiev, O., Chen, J. H.
  2020; 25: 1–6

- **Predicting venous thromboembolism risk from exomes in the Critical Assessment of Genome Interpretation (CAGI) challenges.** *Human mutation*
  McInnes, G., Daneshjou, R., Katsonis, P., Lichtarge, O., Srinivasan, R. G., Rana, S., Radivojac, P., Mooney, S. D., Pagel, K. A., Stamboulian, M., Jiang, Y., Capriotti, E., Wang, et al
  2019

- **Pharmacogenomics in dermatology: tools for understanding gene-drug associations.** *Seminars in cutaneous medicine and surgery*
  Daneshjou, R., Huddart, R., Klein, T. E., Altman, R. B.
  2019; 38 (1): E19–E24

- **Pharmacogenomics and big genomic data: from lab to clinic and back again.** *Human molecular genetics*
  Lavertu, A., McInnes, G., Daneshjou, R., Whirl-Carrillo, M., Klein, T. E., Altman, R. B.
  2018; 27 (R1): R72–R78

- **Pharmacogenomics and big genomic data: from lab to clinic and back again** *HUMAN MOLECULAR GENETICS*
  Lavertu, A., McInnes, G., Daneshjou, R., Whirl-Carrillo, M., Klein, T. E., Altman, R. B.
  2018; 27 (R1): R72–R78

- **Working toward precision medicine: Predicting phenotypes from exomes in the Critical Assessment of Genome Interpretation (CAGI) challenges** *HUMAN MUTATION*
  Daneshjou, R., Wang, Y., Bromberg, Y., Bovo, S., Martelli, P. L., Babbi, G., Di Lena, P., Casadio, R., Edwards, M., Gifford, D., Jones, D. T., Sundaram, L., Bhat, et al
  2017; 38 (9): 1182–92

- **Cohort-specific imputation of gene expression improves prediction of warfarin dose for African Americans.** *Genome medicine*
  Gottlieb, A. n., Daneshjou, R. n., DeGorter, M. n., Bourgeois, S. n., Svensson, P. J., Wadelius, M. n., Deloukas, P. n., Montgomery, S. B., Altman, R. B.
  2017; 9 (1): 98

- **Population-specific single-nucleotide polymorphism confers increased risk of venous thromboembolism in African Americans.** *Molecular genetics & genomic medicine*
  Daneshjou, R., Cavallari, L. H., Weeke, P. E., Karczewski, K. J., Drozda, K., Perera, M. A., Johnson, J. A., Klein, T. E., Bustamante, C. D., Roden, D. M., Shaffer, C., Denny, J. C., Zehnder, et al
  2016; 4 (5): 513-520

- **ClinGen - The Clinical Genome Resource** *NEW ENGLAND JOURNAL OF MEDICINE*
  Rehm, H. L., Berg, J. S., Brooks, L. D., Bustamante, C. D., Evans, J. P., Landrum, M. J., Ledbetter, D. H., Maglott, D. R., Martin, C. L., Nussbaum, R. L., Plon, S. E., Ramos, E. M., Sherry, et al
  2015; 372 (23): 2235-2242

- **PharmGKB summary: very important pharmacogene information for CYP4F2** *PHARMACOGENETICS AND GENOMICS*
  Alvarellos, M. L., Sangkuhl, K., Daneshjou, R., Whirl-Carrillo, M., Altman, R. B., Klein, T. E.
  2015; 25 (1): 41-47

- **Genetic variant in folate homeostasis is associated with lower warfarin dose in African Americans** *BLOOD*
  Daneshjou, R., Gamazon, E. R., Burkley, B., Cavallari, L. H., Johnson, J. A., Klein, T. E., Limdi, N., Hillenmeyer, S., Percha, B., Karczewski, K. J., Langaee, T., Patel, S. R., Bustamante, et al
  2014; 124 (14): 2298-2305

- **Genetic variant in folate homeostasis is associated with lower warfarin dose in African Americans.** *Blood*
  Daneshjou, R., Gamazon, E. R., Burkley, B., Cavallari, L. H., Johnson, J. A., Klein, T. E., Limdi, N., Hillenmeyer, S., Percha, B., Karczewski, K. J., Langaee, T., Patel, S. R., Bustamante, et al
  2014; 124 (14): 2298-2305

- **Targeted Exon Capture and Sequencing in Sporadic Amyotrophic Lateral Sclerosis** *PLOS GENETICS*
  Couthouis, J., Raphael, A. R., Daneshjou, R., Gitler, A. D.
  2014; 10 (10)

- **Targeted exon capture and sequencing in sporadic amyotrophic lateral sclerosis.** *PLoS genetics*
  Couthouis, J., Raphael, A. R., Daneshjou, R., Gitler, A. D.
  2014; 10 (10)

- **Genotype-Guided Dosing of Vitamin K Antagonists** *NEW ENGLAND JOURNAL OF MEDICINE*
  Daneshjou, R., Klein, T. E., Altman, R. B.
  2014; 370 (18): 1762–63

- **Path-scan: a reporting tool for identifying clinically actionable variants.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
  Daneshjou, R., Zappala, Z., Kukurba, K., Boyle, S. M., Ormond, K. E., Klein, T. E., Snyder, M., Bustamante, C. D., Altman, R. B., Montgomery, S. B.
  2014; 19: 229-240

- **PATH-SCAN: A REPORTING TOOL FOR IDENTIFYING CLINICALLY ACTIONABLE VARIANTS**
  Daneshjou, R., Zappala, Z., Kukurba, K., Boyle, S. M., Ormond, K. E., Klein, T. E., Snyder, M., Bustamante, C. D., Altman, R. B., Montgomery, S. B., Altman, R. B., Dunker, A. K., Hunter, et al
  WORLD SCIENTIFIC PUBL CO PTE LTD.2014: 229–40

- **Genetic variants associated with warfarin dose in African-American individuals: a genome-wide association study.** *Lancet*
  Perera, M. A., Cavallari, L. H., Limdi, N. A., Gamazon, E. R., Konkashbaev, A., Daneshjou, R., Pluzhnikov, A., Crawford, D. C., Wang, J., Liu, N., Tatonetti, N., Bourgeois, S., Takahashi, et al
  2013; 382 (9894): 790-796

- **Pathway analysis of genome-wide data improves warfarin dose prediction** *BMC GENOMICS*
  Daneshjou, R., Tatonetti, N. P., Karczewski, K. J., Sagreiya, H., Bourgeois, S., Drozda, K., Burmester, J. K., Tsunoda, T., Nakamura, Y., Kubo, M., Tector, M., Limdi, N. A., Cavallari, et al
  2013; 14

- **Pathway analysis of genome-wide data improves warfarin dose prediction.** *BMC genomics*
  Daneshjou, R., Tatonetti, N. P., Karczewski, K. J., Sagreiya, H., Bourgeois, S., Drozda, K., Burmester, J. K., Tsunoda, T., Nakamura, Y., Kubo, M., Tector, M., Limdi, N. A., Cavallari, et al
  2013; 14: S11-?

- **Chapter 7: Pharmacogenomics** *PLOS COMPUTATIONAL BIOLOGY*
  Karczewski, K. J., Daneshjou, R., Altman, R. B.
  2012; 8 (12)

- **Data-Driven Prediction of Drug Effects and Interactions** *SCIENCE TRANSLATIONAL MEDICINE*
  Tatonetti, N. P., Ye, P. P., Daneshjou, R., Altman, R. B.

2012; 4 (125)

- **Bioinformatics challenges for personalized medicine** *BIOINFORMATICS*
  Fernald, G. H., Capriotti, E., Daneshjou, R., Karczewski, K. J., Altman, R. B.
  2011; 27 (13): 1741-1748