



Dorien Feyaerts

Instructor, Anesthesiology, Perioperative and Pain Medicine

Bio

ACADEMIC APPOINTMENTS

- Instructor, Anesthesiology, Perioperative and Pain Medicine
- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- K99/R00 Pathway to Independence Award, NICHD (2024-2029)
- Pilot Early Career grant, Stanford Maternal and Child Health Research Institute (2024-2025)
- SRI/Bayer Discovery/Innovation grant, Society for Reproductive Investigation (July 2023 - July 2024)
- Best poster for Clinical Science, Stanford Department of Anesthesia (June 2022)
- Postdoctoral Support Grant, Stanford Maternal and Child Health Research Institute (March 2021 - June 2023)

LINKS

- Gaudilliere lab: <https://gaudillierelab.stanford.edu>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Biomedical scientist and immunologist with a strong background in fetal-maternal immunology that aims to conduct impactful translational research in women's health to improve the health of mothers and their children.

Publications

PUBLICATIONS

- **Systemic immune dysregulation in hypertensive disorders of pregnancy persists years after delivery.** *Frontiers in immunology*
Sabayev, M., Ganio, E. A., Stelzer, I. A., Sato, M., Cambriel, A., Bonham, T. A., Juvan, Z. N., Diop, M., Iyer, P., Sedan, O., Aghaeepour, N., Angst, M. S., Shaw, et al
2026; 17: 1716809
- **Brain-immune correlates of quality of life in adolescents with chronic musculoskeletal pain.** *Brain, behavior, and immunity*
Pascual-Diaz, S., Suñol, M., Hoeppli, M. E., Biggs, E., King, C. D., Aghaeepour, N., Angst, M. S., Ganio, E., Cambriel, A., Feyaerts, D., Gaudilliere, B., Stinson, J. N., Moayedi, et al
2025: 106225
- **Systemic immune dysregulation in hypertensive disorders of pregnancy persists years after delivery.** *bioRxiv : the preprint server for biology*
Sabayev, M., Ganio, E. A., Stelzer, I. A., Sato, M., Cambriel, A., Bonham, T. A., Juvan, Z. N., Diop, M., Iyer, P., Sedan, O., Aghaeepour, N., Angst, M. S., Shaw, et al

2025

- **SPACEc: a streamlined, interactive Python workflow for multiplexed image processing and analysis.** *Nature communications*
Tan, Y., Kempchen, T. N., Becker, M., Haist, M., Feyaerts, D., Liu, J., Toma, M., Xiao, Y., Su, G., Rech, A. J., Hölzel, M., Fan, R., Hickey, et al
2025; 16 (1): 10652
- **Profiling NK cell receptor repertoire of women with idiopathic recurrent pregnancy loss.** *Journal of reproductive immunology*
Gurbanova, A., Feyaerts, D., Benner, M., Meuleman, T., van der Hoorn, M. L., Joosten, I., Wieten, L., de Jonge, M. I., van der Molen, R. G.
2025; 173: 104803
- **Immune Modulation by Personalized vs Standard Prehabilitation Before Major Surgery: A Randomized Clinical Trial.** *JAMA surgery*
Cambriel, A., Tsai, A., Choisy, B., Sabayev, M., Hedou, J., Shelton, E., Singh, K., Amar, J., Badea, V., Bruckman, S., Ganio, E., Einhaus, J., Feyaerts, et al
2025
- **Adaptive Neutrophil Phenotypes and Their Functions in the Maternal Immune Landscape**
Juvan, Z., Kindler, O., Maitz, K., Feyaerts, D., Hoebler, A., Kloimboock, T., Cosic, N., Forstner, D., Santiso, A., Heinemann, A., Feichtinger, J., Moser, G., Wadsack, et al
OXFORD UNIV PRESS.2025
- **Single-cell-level digital twins for preterm birth prevention strategies.** *bioRxiv : the preprint server for biology*
Einhaus, J., Neidlinger, P., Fondeur, O., Sato, M., Anronikov, A., Miyazaki, K., Amar, J. N., Ando, K., Badea, V., Gaudilliere, D. K., Sabayev, M., Feyaerts, D., Diop, et al
2025
- **Immune Profiling of Post-COVID Condition in Adults Living in Mexico: A Longitudinal Analysis of Immune and Proteomic Markers**
Anronikov, S., Meikle, C., Saavedra, S., Gallegos, A., Islas, L., Nunez, I., Chen, H., Feyaerts, D., Gillard, J., Tsai, A., Bonham, T., Genic, E., Nolan, et al
LIPPINCOTT WILLIAMS & WILKINS.2025: 230-231
- **Single-Cell Epigenetic Dynamics and Determinants of Surgical Outcomes**
Cambriel, A., Sabayev, M., Ganio, E., Angst, M., Bonham, T., Anronikov, A., Tsai, A., Diop, M., Einhaus, J., Feyaerts, D., Goodman, S., Drover, D., Verdonk, et al
LIPPINCOTT WILLIAMS & WILKINS.2025: 496
- **Comparative Analysis of Immune Profiles in Youth With and Without High Impact Chronic Pain**
White, J., Feyaerts, D., Cambriel, A., Sabayev, M., Gaudilliere, B., Simons, L.
CHURCHILL LIVINGSTONE.2025
- **The single-cell immune profile throughout gestation and its potential value for identifying women at risk for spontaneous preterm birth.** *European journal of obstetrics & gynecology and reproductive biology: X*
Feyaerts, D., Diop, M., Galaz, J., Einhaus, J. F., Arck, P. C., Diemert, A., Winn, V. D., Parast, M., Gyamfi-Bannerman, C., Prins, J. R., Gomez-Lopez, N., Stelzer, I. A.
2025; 25: 100371
- **High-Dimensional Imaging Reveals Eutopic Endometrial Cell Frequency and Functional Shifts in Endometriosis**
Diop, M. G., Feyaerts, D., Einhaus, J., Irwin, J., Bonham, A., Stelzer, I., Stevenson, D., Sirota, M., Blish, C., Giudice, L., Gaudilliere, B.
SPRINGER HEIDELBERG.2025: 48A
- **Infusion of young donor plasma components in older patients modifies the immune and inflammatory response to surgical tissue injury: a randomized clinical trial.** *Journal of translational medicine*
Gaudilliere, B., Xue, L., Tsai, A. S., Gao, X., McAllister, T. N., Tingle, M., Porras, G., Feinstein, I., Feyaerts, D., Verdonk, F., Sabayev, M., Hedou, J., Ganio, et al
2025; 23 (1): 183
- **A machine learning approach to leveraging electronic health records for enhanced omics analysis.** *Nature machine intelligence*
Mataraso, S. J., Espinosa, C. A., Seong, D., Reincke, S. M., Berson, E., Reiss, J. D., Kim, Y., Ghanem, M., Shu, C. H., James, T., Tan, Y., Shome, S., Stelzer, et al
2025; 7 (2): 293-306
- **Mode of delivery predicts postpartum maternal leukocyte telomere length.** *European journal of obstetrics, gynecology, and reproductive biology*

- Panelli, D. M., Mayo, J. A., Wong, R. J., Becker, M., Feyaerts, D., Marić, I., Wu, E., Gotlib, I. H., Gaudillière, B., Aghaeepour, N., Druzin, M. L., Stevenson, D. K., Shaw, et al
2024; 300: 224-229
- **Predicting Spontaneous Preterm Birth Using the Immunome.** *Clinics in perinatology*
Feyaerts, D., Marić, I., Arck, P. C., Prins, J. R., Gomez-Lopez, N., Gaudillière, B., Stelzer, I. A.
2024; 51 (2): 441-459
 - **Discovery of sparse, reliable omic biomarkers with Stabl.** *Nature biotechnology*
Hédou, J., Marić, I., Bellan, G., Einhaus, J., Gaudillière, D. K., Ladant, F. X., Verdonk, F., Stelzer, I. A., Feyaerts, D., Tsai, A. S., Ganio, E. A., Sabayev, M., Gillard, et al
2024
 - **Spatial subsetting enables integrative modeling of oral squamous cell carcinoma multiplex imaging data.** *iScience*
Einhaus, J., Gaudilliere, D. K., Hedou, J., Feyaerts, D., Ozawa, M. G., Sato, M., Ganio, E. A., Tsai, A. S., Stelzer, I. A., Bruckman, K. C., Amar, J. N., Sabayev, M., Bonham, et al
2023; 26 (12): 108486
 - **Longitudinal clinical phenotyping of post COVID condition in Mexican adults recovering from severe COVID-19: a prospective cohort study.** *Frontiers in medicine*
Núñez, I., Gillard, J., Fragoso-Saavedra, S., Feyaerts, D., Islas-Weinstein, L., Gallegos-Guzmán, A. A., Valente-García, U., Meyerowitz, J., Kelly, J. D., Chen, H., Ganio, E., Benkendorff, A., Flores-Gouyonnet, et al
2023; 10: 1236702
 - **Expanded vacuum-stable gels for multiplexed high-resolution spatial histopathology.** *Nature communications*
Bai, Y., Zhu, B., Oliveria, J., Cannon, B. J., Feyaerts, D., Bosse, M., Vijayaragavan, K., Greenwald, N. F., Phillips, D., Schurch, C. M., Naik, S. M., Ganio, E. A., Gaudilliere, et al
2023; 14 (1): 4013
 - **Integrated Mass Cytometry Accurately Predicts Hemorrhagic Transformation Following Acute Ischaemic Stroke**
Tsai, A., Hedou, J., Einhaus, J., Feyaerts, D., Verdonk, F., Choisy, B., Desilles, J., Ho-Tin-Noe, B., Olivot, J., Mazighi, M., Gaudilliere, B.
LIPPINCOTT WILLIAMS & WILKINS.2023: 261-262
 - **Large-scale correlation network construction for unraveling the coordination of complex biological systems** *NATURE COMPUTATIONAL SCIENCE*
Becker, M., Nassar, H., Espinosa, C., Stelzer, I. A., Feyaerts, D., Berson, E., Bidoki, N. H., Chang, A. L., Saarunya, G., Culos, A., De Francesco, D., Fallahzadeh, R., Liu, et al
2023
 - **Towards multiomic analysis of oral mucosal pathologies.** *Seminars in immunopathology*
Einhaus, J., Han, X., Feyaerts, D., Sunwoo, J., Gaudilliere, B., Ahmad, S. H., Aghaeepour, N., Bruckman, K., Ojcius, D., Schurch, C. M., Gaudilliere, D. K.
2023
 - **Early prediction and longitudinal modeling of preeclampsia from multiomics.** *Patterns (New York, N.Y.)*
Maric, I., Contrepolis, K., Moufarrej, M. N., Stelzer, I. A., Feyaerts, D., Han, X., Tang, A., Stanley, N., Wong, R. J., Traber, G. M., Ellenberger, M., Chang, A. L., Fallahzadeh, et al
2022; 3 (12): 100655
 - **Upcoming and urgent challenges in critical care research based on COVID-19 pandemic experience.** *Anaesthesia, critical care & pain medicine*
Verdonk, F., Feyaerts, D., Badenes, R., Bastarache, J. A., Bougle, A., Ely, W., Gaudilliere, B., Howard, C., Kotfis, K., Lautrette, A., Le Dorze, M., Mankidy, B. J., Matthay, et al
2022: 101121
 - **Integrated plasma proteomic and single-cell immune signaling network signatures demarcate mild, moderate, and severe COVID-19.** *Cell reports. Medicine*
Feyaerts, D., Hédou, J., Gillard, J., Chen, H., Tsai, E. S., Peterson, L. S., Ando, K., Manohar, M., Do, E., Dhondalay, G. K., Fitzpatrick, J., Artandi, M., Chang, et al
2022: 100680
 - **Establishment of tissue-resident immune populations in the fetus.** *Seminars in immunopathology*

Feyaerts, D., Urbschat, C., Stelzer, I. A.

2022

- **Revealing the impact of lifestyle stressors on the risk of adverse pregnancy outcomes with multitask machine learning.** *Frontiers in pediatrics*
Becker, M., Dai, J., Chang, A. L., Feyaerts, D., Stelzer, I. A., Zhang, M., Berson, E., Saaranya, G., De Francesco, D., Espinosa, C., Kim, Y., Maric, I., Mataraso, et al
2022; 10: 933266
- **Integrated Single-Cell and Plasma Proteomic Modeling to Predict Surgical Site Complications: A Prospective Cohort Study.** *Annals of surgery*
Rumer, K. K., Hedou, J., Tsai, A., Einhaus, J., Verdonk, F., Stanley, N., Choisy, B., Ganio, E., Bonham, A., Jacobsen, D., Warrington, B., Gao, X., Tingle, et al
1800
- **Integrated trajectories of the maternal metabolome, proteome, and immunome predict labor onset.** *Science translational medicine*
Stelzer, I. A., Ghaemi, M. S., Han, X., Ando, K., Hedou, J. J., Feyaerts, D., Peterson, L. S., Rumer, K. K., Tsai, E. S., Ganio, E. A., Gaudilliere, D. K., Tsai, A. S., Choisy, et al
2021; 13 (592)
- **Single-Cell Analysis of the Neonatal Immune System Across the Gestational Age Continuum.** *Frontiers in immunology*
Peterson, L. S., Hedou, J., Ganio, E. A., Stelzer, I. A., Feyaerts, D., Harbert, E., Adusumelli, Y., Ando, K., Tsai, E. S., Tsai, A. S., Han, X., Ringle, M., Houghteling, et al
2021; 12: 714090
- **A Peripheral Immune Signature of Labor Induction.** *Frontiers in immunology*
Ando, K., Hédou, J. J., Feyaerts, D., Han, X., Ganio, E. A., Tsai, E. S., Peterson, L. S., Verdonk, F., Tsai, A. S., Marić, I., Wong, R. J., Angst, M. S., Aghaeepour, et al
2021; 12: 725989
- **A pregnancy to remember: trained immunity of the uterine mucosae.** *Mucosal immunology*
Feyaerts, D., Joosten, I., van der Molen, R. G.
2020
- **Clusters of Tolerogenic B Cells Feature in the Dynamic Immunological Landscape of the Pregnant Uterus** *CELL REPORTS*
Benner, M., Feyaerts, D., Garcia, C., Inci, N., Lopez, S., Fasse, E., Shadmanfar, W., van der Heijden, O. W. H., Gorris, M. A. J., Joosten, I., Ferwerda, G., van der Molen, R. G.
2020; 32 (13): 108204
- **VoPo leverages cellular heterogeneity for predictive modeling of single-cell data.** *Nature communications*
Stanley, N. n., Stelzer, I. A., Tsai, A. S., Fallahzadeh, R. n., Ganio, E. n., Becker, M. n., Phongpreecha, T. n., Nassar, H. n., Ghaemi, S. n., Maric, I. n., Culos, A. n., Chang, A. L., Xenochristou, et al
2020; 11 (1): 3738
- **Selective expansion and CMV-dependency in pregnancy trained human endometrial NK cells.** *Cellular & molecular immunology*
Feyaerts, D., van der Meer, A., Joosten, I., van der Molen, R. G.
2019; 16 (4): 410-411
- **Respiratory Syncytial Virus Infects Primary Neonatal and Adult Natural Killer Cells and Affects Their Antiviral Effector Function.** *The Journal of infectious diseases*
van Erp, E. A., Feyaerts, D., Duijst, M., Mulder, H. L., Wicht, O., Luytjes, W., Ferwerda, G., van Kasteren, P. B.
2019; 219 (5): 723-733
- **Placental disposition of the immunosuppressive drug tacrolimus in renal transplant recipients and in ex vivo perfused placental tissue.** *European journal of pharmaceutical sciences : official journal of the European Federation for Pharmaceutical Sciences*
Freriksen, J. J., Feyaerts, D., van den Broek, P. H., van der Heijden, O. W., van Drongelen, J., van Hamersvelt, H. W., Russel, F. G., van der Molen, R. G., Greupink, R.
2018; 119: 244-248
- **Endometrial natural killer (NK) cells reveal a tissue-specific receptor repertoire.** *Human reproduction (Oxford, England)*
Feyaerts, D., Kuret, T., van Cranenbroek, B., van der Zeeuw-Hingrez, S., van der Heijden, O. W., van der Meer, A., Joosten, I., van der Molen, R. G.

2018; 33 (3): 441-451

- **Human uterine lymphocytes acquire a more experienced and tolerogenic phenotype during pregnancy.** *Scientific reports*
Feyaerts, D., Benner, M., van Cranenbroek, B., van der Heijden, O. W., Joosten, I., van der Molen, R. G.
2017; 7 (1): 2884
- **1,25-Dihydroxyvitamin D3 and its analog TX527 promote a stable regulatory T cell phenotype in T cells from type 1 diabetes patients.** *PLoS one*
Van Belle, T. L., Vanherwegen, A. S., Feyaerts, D., De Clercq, P., Verstuyf, A., Korf, H., Gysemans, C., Mathieu, C.
2014; 9 (10): e109194