

Thorold W. Theunissen, PhD

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Contact Information

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Present Position

12/2017-Present	Member, Center of Regenerative Medicine, Washington University in St. Louis
09/2022-Present	Member, Center for Women's Health Engineering, Washington University in St. Louis
10/2023-Present	Associate Professor of Developmental Biology, Washington University School of Medicine in St. Louis
12/2023-Present	Co-Director, Human Cells, Tissues, and Organoids (hCTO) Core, Washington University School of Medicine in St. Louis

Education

Undergraduate

09/2003-07/2007 Bachelor of Arts, *Summa cum laude*
Harvard University, Cambridge, MA (Biology)

Graduate

08/2007-08/2008 Master of Philosophy
King's College, University of Cambridge, UK (Developmental Biology)

09/2008-12/2011 Doctor of Philosophy
King's College, University of Cambridge, UK (Biochemistry)
Thesis title: *Mechanisms of induced pluripotency: role of the homeodomain transcription factor Nanog*
Advisor: José Silva, Ph.D.

Post-graduate training

01/2012-11/2017 Sir Henry Wellcome Postdoctoral Fellow
Whitehead Institute for Biomedical Research, Massachusetts Institute of

Technology, Cambridge, MA, USA
Advisor: Rudolf Jaenisch, M.D.

Academic and Promotion History

12/2017-10/2023 Assistant Professor of Developmental Biology
11/2023-Present Associate Professor of Developmental Biology with Tenure

Honors and Awards

2006 John Harvard Scholarship (top 5% GPA)
2007 Phi Beta Kappa, Harvard University
2008 Cambridge Philosophical Society
2012 Sir Henry Wellcome Postdoctoral Fellowship
2019 Shipley Program for Innovation in Stem Cell Science Award
2019 Edward Mallinckrodt, Jr New Investigator Award
2019 NIH Director's New Innovator Award (DP2)
2024 NIH Outstanding Investigator Award (R35)
2024 Edward Mallinckrodt, Jr Scholar Award

Editorial and Review Responsibilities

Editorial Positions

2022-2025 Early Career Editorial Board, *Stem Cell Reports*
2023-Present Advisory Board, *Cell Stem Cell*
2025-Present Editorial Board, *Stem Cell Reports*

Ad Hoc Manuscript Reviews

BMC Biology (2024), *Cell* (2024-2025), *Cell Press Multi-Journal* (2026), *Cell Reports* (2019, 2022, 2023, 2024), *Cell Stem Cell* (2017-2025), *Current Opinion in Genetics and Development* (2023), *Development* (2018-2026), *Developmental Biology* (2020, 2023), *Developmental Cell* (2021, 2022, 2026), *Developmental Dynamics* (2024), *eLIFE* (2020, 2021), *EMBO Reports* (2022), *Experimental Cell Research* (2019, 2020), *iScience* (2024), *Nature* (2017, 2022, 2023, 2024, 2025, 2026), *Nature Biotechnology* (2017), *Nature Cell Biology* (2020, 2021, 2023), *Nature Communications* (2020-2024), *Nature Methods* (2020, 2022), *Nature Reviews Molecular Cell Biology* (2024-2025), *Placenta* (2024), *PNAS* (2020-2025), *Protein & Cell* (2019), *Science* (2024), *Science Advances* (2018, 2019, 2020, 2023, 2025, 2026), *Stem Cell Reports* (2019-2026), *Trends in Biotechnology* (2024)

NIH Review Panels

06/2023 Adhoc Member, NICHD Special Emphasis Panel ZHD1 DSR-A (50) 1
 "Physiomimetics and Organoids for Reproductive Health"
02/2025 Adhoc Member, Cellular, Molecular, and Integrative Reproduction (CMIR) Study
 Section

06/2025	Adhoc Member, Complement-ARIE New Approach Methodologies (NAMs) Technology Development Centers (UM1) RFA Panel
01/2026	Adhoc Member, Cellular, Molecular, and Integrative Reproduction (CMIR) Study Section
07/2026-	Standing Member, Cellular, Molecular, and Integrative Reproduction (CMIR) Study Section

Extramural Grant Reviews

2019	Wellcome Trust (UK)
2019	Medical Research Council (UK)
2020	Agence Nationale de la Recherche (France)
2021	Israel Science Foundation (Israel)
2021	Medical Research Council (UK)
2022	Fondo italiano per la Scienza (Italy)
2022	Wellcome Trust (UK)
2023	Fondation pour la Recherche Médicale (France)
2023	Medical Research Council (UK)
2023	Biotechnology and Biological Sciences Research Council (UK)
2023	Auckland Medical Research Foundation (New Zealand)
2023	Österreichischer Wissenschaftsfonds (Austria)
2024	Governance of Stem Cell-Based Embryo Models Code of Practice (UK)
2024	UK Research and Innovation (UK)
2025	Lalor Foundation (USA)
2025	Israel Science Foundation (Israel)
2025	UK Research and Innovation (UK)
2025	Katholieke Universiteit Leuven (Belgium)
2025	Austrian Academy of Sciences (Austria)
2026	CIHR Joint Canada-Israel Health Research Program (Canada & Israel)
2026	Austrian Academy of Sciences (Austria)

Community Service Contributions

Washington University in St. Louis School of Medicine Committees and Administrative Service:

2019-2020	Faculty Search Committee, Department of Developmental Biology
2019-2022	Faculty Search Committee, Center for Reproductive Health Sciences
2019-Present	Steering Committee, Developmental, Regenerative, and Stem Cell Biology PhD Program
2019-2025	Graduate Admission Committee B
2020-Present	Advisory Board, Researcher Compass
2022-Present	Viktor Hamburger Lecture Selection Committee
2022-Present	Program Development Committee, Master of Science in Reproductive Sciences
2025-Present	Faculty Search Committee, Department of Developmental Biology

Department of Developmental Biology Seminar Series

I have hosted the following speakers in the DB seminar series at Washington University:

2017-2018	Kevin Wang (Stanford), Jianlong Wang (Columbia)
2018-2019	Stuart Orkin (Harvard), Kathrin Plath (UCLA)
2019-2020	Cigall Kadoch (Harvard), Amander Clark (UCLA)
2020-2021	Jun Wu (UT Southwestern), Marisa Bartolomei (UPenn)
2021-2022	Josien van Wolfswinkel (Yale), Jianping Fu (Michigan)
2022-2023	Justin Brumbaugh (Colorado), Bruno Di Stefano (Baylor)
2024-2025	Berna Sozen (Yale), Jan Zylicz (Copenhagen)
2025-2026	Sophie Petropoulos (Montreal)

Service to Other Universities (External Thesis Examiner):

2022	University of Cambridge	Kate Maskalenka (Rugg-Gunn)
2023	Monash University	Jia Ping Tan (Polo)

External Reviewer for Promotion and Tenure

2025	Bar Ilan University, Israel
2026	Weizmann Institute of Science, Israel
2026	UT Southwestern Medical Center
2026	Yale University

Membership in Professional Societies:

2012-Present	International Society for Stem Cell Research (ISSCR)
2021-Present	Society for the Study of Reproduction (SSR)
2022-Present	Society for Developmental Biology (SDB)
2023-Present	Society for Reproductive Investigation (SRI)

Service in Professional Societies:

2019-Present	Abstract Reviewer	ISSCR
2019	Abstract Reviewer	Society for Developmental Biology
2020-Present	Abstract Reviewer	Society for the Study of Reproduction
2020	Session Chair	SDB Annual Meeting, Boston, MA
2022	Session Co-Chair	ISSCR Annual Meeting, San Francisco, CA
2023-2024	Public Affairs Committee	Society for the Study of Reproduction

Consulting Relationships and Board Memberships

2023-Present	Stately Bio, Inc., Palo Alto, CA
2025-Present	e184, Inc., Portland, OR

Teaching

Major External Invited Presentations, including Professorships and Lectures

- 2014 International Society for Stem Cell Research, Vancouver, Canada
- 2016 International Society for Stem Cell Research, San Francisco, CA
- 2019 Society for the Study of Reproduction, San Jose, CA
- 2019 University of Missouri, Columbia, MO
- 2020 Gibco Global Stem Cells Event (Virtual)
- 2021 University of Connecticut, Hartford, CT (Virtual)
- 2021 Vanderbilt University, Nashville, TN (Virtual)
- 2021 Gilbert S. Greenwald Symposium, Kansas City, KS (Virtual)
- 2021 Yale University, New Haven, CT (Virtual)
- 2022 Sanford Consortium for Regenerative Medicine, San Diego, CA
- 2022 American Society for Reproductive Immunology, Nashville, TN
- 2022 International Society for Stem Cell Research, San Francisco, CA
- 2022 Saint Louis University, St. Louis, MO
- 2022 Baylor College of Medicine, Houston, TX
- 2022 University of Colorado Boulder, CO
- 2023 UT Southwestern Medical Center, Dallas, TX
- 2023 Society for Reproductive Investigation, Brisbane, Australia
- 2023 University of Georgia, Athens, GA
- 2024 Keystone Symposium on Stem Cell Models for Embryology, Pacific Grove, CA
- 2024 Oslo Placenta-Brain Seminar, Oslo, Norway
- 2024 Centre for Trophoblast Research, Cambridge, UK
- 2024 Cell Symposia: Engineering Development and Disease in Organoids, San Diego, CA
- 2024 UCLA Broad Stem Cell Research Center, Los Angeles, CA
- 2024 Tsinghua University, Beijing, China
- 2024 Symposia on Frontiers in Reproductive Biology, Beijing, China
- 2025 McGill University, Montreal, Canada
- 2025 Centre de recherche Azrieli, CHU Sainte-Justine, Montreal, Canada
- 2025 Vanderbilt University, Nashville, TN (Virtual)
- 2025 University of Kansas Medical Center, Kansas City, KS
- 2025 Workshop on the 14-Day Limit for Human Embryo Research, San Francisco, CA
- 2025 American Society for Reproductive Immunology, St. Paul, MN
- 2025 Cold Spring Harbor Asia Meeting on Human Development, Suzhou, China (Virtual)
- 2026 Society for Reproductive Investigation, Puerto Rico (Virtual)
- 2026 Reproductive and Developmental Biology Lab, Research Triangle Park, NC (Virtual)
- 2026 Society on Birth Defects Research and Prevention, Washington DC

Washington University Presentations & Lectures:

- 2019 Center for Reproductive Health Sciences
- 2019 Department of Genetics
- 2019 Department of Developmental Biology
- 2019 Center for Cardiovascular Research

2020 Genome Engineering & iPSC Center
 2020 Hope Center NeuroRestorative Therapy Group
 2021 Pulmonary Research Conference
 2022 Department of Ophthalmology
 2023 15 Years of WUSM Developmental Biology Symposium
 2025 Endocrinology, Metabolism, Obesity, and Diabetes Seminar Series
 2026 Center for Reproductive Health Sciences

Courses

2019-Present Instructor BIOL 3240 Human Genetics
 2019-Present Instructor BIOL 5352 Developmental Biology (Spring)
 2019-Present Co-Director BIOL 5152 RAD Journal Club (Fall & Spring)
 2022-Present Co-Director BIOL 5352 Developmental Biology (Spring)
 2024-Present Instructor BIOL 4073 Human Reproductive Physiology (Fall)
 2026-Present Instructor REPRSCI 5010 Advanced Topics in Reproductive Sciences (Spring)

Curriculum Development

2024-2025 Curriculum Executive Team

Mentorship & Sponsorship Record

Served as **faculty research mentor** for:

High School Students

Current position (for lab alumni):

2024-2025	Georgia Bland	Undergraduate, UT Austin
2026-Present	Coco Bland	

Summer Students

2025	Chaoyi Cheng	Undergraduate, Peking University
2025	Jinyu Liu	Undergraduate, University of Oxford

Undergraduates

2020-2023	Eshan Sane	MD Candidate, WashU Medicine
2025-Present	Olivia Zhang	

Graduate Students

2018-2022	Chen Dong (DRSCB)	Consultant, Boston Consulting Group
2018-2024	Laura A. Fischer (DRSCB)	Director, hCTO Core, WashU Medicine
2022-2024	Joey Zemke (DRSCB)	PhD Candidate, WashU Medicine
2023-Present	Kyoung-mi Park (DRSCB)	

2023-Present	Richard Yin (DRSCB)
2024-Present	Serene Mattis (BME)
2024-Present	Peiheng Liu (MCB)

Postbaccalaureates

2024-Present	Rosa Loewenstein
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Postdoctoral Trainees

2019-2023	Shafqat A. Khan, PhD	Staff Scientist, WashU Medicine
2020-2024	Rowan M. Karvas, PhD	Assistant Professor, Univ. of Colorado
2024-Present	Xiangyu Kong, PhD	
2026-Present	Regan L. Scott, PhD	

Research Technicians

2018-2022	Kyoung-mi Park	PhD Candidate, Washington University
2020-2022	Brian Chew	PhD Candidate, University of Pittsburgh
2022-Present	Brittany Meyer	

Staff Scientists

2023-Present	Shafqat A. Khan, PhD
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Served on **qualifying examinations** for:

2019	DRSCB	Sadie VanHorn (Morris)
2020	DRSCB	Jennysue Kasiah (McNeill)
2021	DRSCB	Marlie Maestas (Millman)
2022	DRSCB	Mini Yuan (Yoo)
2024	DRSCB	Yoon Lee (Yoo)
2024	DRSCB	Ariel Telger (Greer)
2024	DRSCB	Zack Skovgaard (Meers)
2025	DRSCB	Jenny Srnak (Yi)

Served on **thesis committees** for:

2020-2021	DRSCB	Leonardo Velazco-Cruz (Millman)
2020-2023	DRSCB	Keenan Bates (Herzog)
2020-2024	DRSCB	Matthew Mosley (Pincus/Kornfeld)
2021	DRSCB	Sarah Waye (Morris)
2021-2024	DRSCB	Sadie VanHorn (Morris)
2022-Present	DRSCB	Mini Yuan (Yoo)
2024-Present	DRSCB	Zack Skovgaard (Meers)
2021-2024	MCB	Jason Colasanti (Apte)

2022-2024	MCB	Noah DeGeorgia (Kaufman)
2022-2023	MGG	Kitra Cates (Yoo)
2023-Present	MGG	Jessica Harrison (Wang)
2023-Present	MGG	Kaci Martin (Frolova)
2023-Present	CSB	Douglas Abrams (Morris)
2024-Present	BME	Martina Marras (Silva)
2024-Present	BME	Erica Marquez (Silva)
2026-Present	CSB	Rachel Wu (Wang)

Mentorship Training:

2019	Maximizing Research Mentoring Relationships Workshop
2024	Optimizing the Practice of Mentoring, University of Minnesota
2024	Compass Training and Mentoring Program

Media Activities

2004	<i>The Harvard Crimson</i>
2017	<i>Cambridge Stem Cell News</i>
2018	<i>Axios</i>
2019	<i>Cell Stem Cell</i>
2020	<i>Washington University Medicine News</i>
2021	<i>Science Magazine</i>
2022	<i>Cell Stem Cell</i>
2023	<i>The Stem Cell Podcast</i>
2025	<i>The Stem Cell Report</i>
2025	<i>Science Magazine</i>

Research

Present Extramural Grants:

NIH/NIGMS R35GM153439-01	Theunissen (PI)	2024-2029
Resolving epigenetic instability during pluripotent state transitions: a roadmap for exploiting the biomedical potential of dynamic human stem cell states		
NIH/NICHD R01HD119277-01	Theunissen, Dietmann, Kroll, Soncin (MPI)	2025-2030
Modeling human trophoblast differentiation and function using pluripotent stem cells		
NIH/NICHD R21HD112754-01	Theunissen (PI)	2023-2025
Mechanisms of X chromosome inactivation during human trophoblast differentiation <i>in vitro</i>		
Mallinckrodt Scholar Award	Theunissen (PI)	2024-2028
A stem-cell-based model system of human embryo implantation and its pathologies		

Past Extramural Grants:

NIH/NIGMS DP2 GM137418	Theunissen (PI)	2019-2024
Resolving epigenetic instability during pluripotent state transitions: a roadmap for exploiting the biomedical potential of dynamic human stem cell states		
Shibley Foundation	Theunissen (PI)	2019-2024
Generation of synthetic embryo models from human stem cells		
Mallinckrodt Foundation	Theunissen (PI)	2019-2022
Generation of synthetic embryo models from human stem cells		
Children's Discovery Institute	Theunissen, Solnica-Krezel, Kroll (MPI)	2019-2023
Establishing novel stem cell platforms to model developmental disorders in children		

Entrepreneurship/Patents:

1. **Theunissen, T.W.**, Gray, N., and R. Jaenisch. Uses of kinase inhibitors for inducing and maintaining pluripotency (2024). US Patent 12,123,019.
2. **Theunissen, T.W.**, Khan, S.A., and R. Jaenisch. Enhanced methods for inducing and maintaining naïve human pluripotent stem cells (2025). US Patent 12,371,667.
3. Karvas, R.M. and **T.W. Theunissen**. Derivation of trophoblast organoids from naïve human pluripotent stem cells. US Patent App. 18/312,488.
4. Karvas, R.M. and **T.W. Theunissen**. Methods and systems for extended culture of human blastoids to post-implantation stages on 3D matrices. US Patent App. 18/600,769
5. Fischer, L.A. and **T.W. Theunissen**. Methods for tracking and mitigating imprint erasure in human pluripotent stem cells (2025). Washington University in St. Louis (021252/US).

Bibliography: senior author abstracts and papers are indicated with an asterisk (*)

A. Original, peer-reviewed articles in refereed journals:

1. Wang, J., Rao, S., Chu, J., Shen, X., Levasseur, D.N., **Theunissen, T.W.**, and S.H. Orkin (2006). A protein interaction network for pluripotency of embryonic stem cells. *Nature* 444, 364-368.
2. Wang, J., **Theunissen, T.W.**, and S.H. Orkin (2007). Site-directed, virus-free and inducible RNAi in embryonic stem cells. *Proceedings of the National Academy of Sciences of the U.S.A.* 104, 20850-5.
3. Silva, J., Barrandon, O., Nichols, J., Kawaguchi, J., **Theunissen, T.W.**, and A. Smith (2008). Promotion of reprogramming to ground state pluripotency by signal inhibition. *PLoS Biology* 6(10), e253.
4. Silva, J., Nichols, J., **Theunissen, T.W.**, Guo, G., van Oosten, A., Barrandon, O., Wray, J., Yamanaka, S., Chambers, I., and A. Smith (2009). Nanog is the gateway to the pluripotent ground state. *Cell* 138(4), 722-737.

5. Tee, W.W., Pardo, M., **Theunissen, T.W.**, Yu, L., Choudhary, J.S., Hajkova, P., and M.A. Surani (2010). Prmt5 is essential for early mouse development and acts in the cytoplasm to maintain ES cell pluripotency, *Genes & Development* 24, 2772-2777.
6. Yang, J., van Oosten, A., **Theunissen, T.W.**, Guo, G., Silva, J.C.R., and A. Smith (2010). STAT3 activation is limiting for reprogramming to ground state pluripotency. *Cell Stem Cell* 7, 319-328.
7. **Theunissen, T.W.**, van Oosten, A., Castelo-Branco, G., Hall, J. Smith, A., and J.C.R. Silva (2011). Nanog overcomes reprogramming barriers and induces pluripotency in minimal conditions, *Current Biology* 21, 65-71.
8. **Theunissen, T.W.**, Costa, Y., Radzishchanskaya, A., van Oosten, A.L., Laval, F., Pain, B., Castro, L.F.C., and J.C.R. Silva (2011). Reprogramming capacity of Nanog is functionally conserved in vertebrates and resides in a unique homeodomain. *Development* 138, 4853-4865.
9. Costa, Y.*, Ding, J.*, **Theunissen, T.W.***, Faiola, F.*, Hore, T.A., Shliha, P.V., Fidalgo, M., Saunders, A., Lawrence, M., Dietmann, S., Das, S., Levasseur, D.N., Li, Z., Xu, M., Reik, W., Silva, J.C.R. and J. Wang (2013). NANOG-dependent function of TET1 and TET2 in establishment of pluripotency, *Nature* 495, 370-374. *Co-first author.
10. Radzishchanskaya, A., Chia Gle, B., dos Santos, R.L., **Theunissen, T.W.**, Castro, L.F., Nichols, J., and J.C. Silva (2013). A defined Oct4 level governs cell state transitions of pluripotency entry and differentiation into all embryonic lineages. *Nature Cell Biology* 15, 579-590.
11. Cheng, A.W., Wang, H., Yang, H., Shi, L., Katz, Y., **Theunissen T.W.**, Rangarajan, S., Shivalila, C.S., Dadon, D.B., and R. Jaenisch (2013). Multiplexed activation of endogenous genes by CRISPR-on, an RNA-guided transcriptional activator system. *Cell Research* 23, 1163-1171.
12. Przybyla, L., **Theunissen, T.W.**, Jaenisch, R., and J. Voldman (2013). Matrix remodeling maintains ESC self-renewal by activating Stat3, *Stem Cells* 31, 1097-1106.
13. **Theunissen, T.W.***, Powell, B.E.*, Wang, H.*, Mitalipova, M., Faddah, D., Maetzel, D., Ganz, K., Shi, L., Stelzer, Y., Zhang, J., Lungjangwa, T., Imsoonthornruksa, S., Rangajaran, S., Fan, Z.P., Young, R.A., Gray, N., and R. Jaenisch (2014). Systematic identification of culture conditions for induction and maintenance of naive human pluripotency, *Cell Stem Cell* 15, 471-487. *Co-first author.
14. De Los Angeles, A., Ferrari, F., Fujiwara, Y., Mathieu, R., Lee S., ... **Theunissen, T.W.** (Author 11) ... Jaenisch, R., Deng, H., Orkin S.H., Park, P.J., and G.Q. Daley (2015). Failure to replicate the STAP cell phenomenon. *Nature* 525, E6-E9.
15. **Theunissen, T.W.***, Friedli, M.*, He, Y.*, Planet, E., Oneil, R., ... Drotar, J., Lungjangwa, T., Trono, D., Ecker, J.R., and R. Jaenisch (2016). Molecular criteria for defining the naive human pluripotent state. *Cell Stem Cell* 19, 1-14. *Co-first author.
16. Sahakyan, A., Kim, R., Chronis, C., Sabri, S., Bonora, G., **Theunissen, T.W.**, Kuoy, E., Langerman, J., Clark, A.T., Jaenisch, R., and K. Plath (2017). Human naive pluripotent stem cells model X chromosome dampening and X inactivation. *Cell Stem Cell* 20, 87-101.
17. Pontis, J., Planet, E., Offner, S., Turelli, P., Duc, J., Coudray, A., **Theunissen, T.W.**, Jaenisch, R., and D. Trono (2019). Hominid-specific transposable elements and KZFPs facilitate human embryonic genome activation and control transcription in

- naive human ESCs. *Cell Stem Cell* 24, 724-735.
18. Lawrence, M., **Theunissen, T.W.**, Lombard, P., Adams, D.J., and J.C.R. Silva (2019). ZMYM2 inhibits NANOG-mediated reprogramming. *Wellcome Open Research* 4: 88.
 19. *Dong, C., Beltcheva, M., Gontarz, P., Zhang, B., Popli, P., Fischer, L.A., Khan, S.A., Park, K., Yoon, E., Xing, X., Kommagani, R., Wang, T., Solnica-Krezel, L., and **T.W. Theunissen** (2020). Derivation of trophoblast stem cells from naive human pluripotent stem cells. *eLife* 9, e52504.
 20. *Khan, S.A., Park, K., Fischer, L.A., Dong, C., Lungjangwa, T., Jimenez, M., Casalena, D., Chew, B., Dietmann, S., Auld, D.S., Jaenisch, R., and **T.W. Theunissen** (2021). Probing the signaling requirements for naive human pluripotency by high-throughput chemical screening. *Cell Reports* 35, 109233.
 21. *Huang, X., Park, K., Gontarz, P., Zhang, B., Pan, J., McKenzie, Z., Fischer, L.A., Dong, C., Dietmann, S., Xing, X., Shliaha, P.V., Yang, J., Li, D., Ding, J., Lungjangwa, T., Mitalipova, M., Khan, S.A., Imsoonthornruksa, S., Jensen, N., Wang, T., Kadoch, C., Jaenisch, R., Wang, J., and **T.W. Theunissen** (2021). OCT4 cooperates with distinct ATP-dependent chromatin remodelers in naïve and primed pluripotent states in human. *Nature Communications* 12, 5123.
 22. *Karvas R.M., Khan, S.A., Verma, S., Yin, Y., Kulkarni, D., Dong, C., Park, K., Chew, B., Sane, E., Fischer, L.A., Kumar, D., Ma, L., Boon, A.C.M., Dietmann, S., Mysorekar, I.U., and **T.W. Theunissen** (2022). Stem-cell-derived trophoblast organoids model human placental development and susceptibility to emerging pathogens. *Cell Stem Cell* 29, 810-825.
 23. *Dong, C., Fu, S., Karvas, R.M., Chew, B., Fischer, L.A., Xing, X., Harrison, J., Popli, P., Kommagani, R., Wang, T., Zhang, B., and **T.W. Theunissen** (2022). A genome-wide CRISPR-Cas9 knockout screen identifies essential and growth-restricting genes in human trophoblast stem cells. *Nature Communications* 13, 2548.
 24. *Karvas, R.M., Zemke, J.E., Ali, S.S., Sane, S., Dong, C., Fischer, L.A., Park, K., Upton, E., Wang, F., Park, K., Hao, S., Chew, B., Meyer, B., Zhou, C., Dietmann, S., and **T.W. Theunissen** (2023). 3D-cultured blastoids model human embryogenesis from pre-implantation to early gastrulation stages. *Cell Stem Cell* 30, 1-18.
 25. *Guo, M., Wu, J., Chen, C., Wang, X., Gong, A., Guan, W., Karvas, R.M., Wang, K., Min, M., Wang, Y., **Theunissen, T.W.**, Gao, S., and J.C.R. Silva (2024). Self-renewing human naïve pluripotent stem cells dedifferentiate in 3D culture and form blastoids spontaneously. *Nature Communications* 15, 668.
 26. *Morey, R., Bui, T., Cheung, V.C., Dong, C., Zemke, J.E., Requena, D., Arora, H., Jackson, M.G., Pizzo, D., **Theunissen, T.W.**, and M. Horii (2024). *iScience* 27: 109569.
 27. *Lam, I., Ndayisaba, A., Lewis, A.J., Fu, Y., Sagredo, G.T., ... **Theunissen, T.W.** (Author 27) ... Elledge, S.J., Dettmer, U., Halliday, G.M., Bartels, T., and V. Khurana (2024). Rapid iPSC inclusionopathy models shed light on formation, consequence and molecular subtype of α -synuclein inclusions. *Neuron* 112, 2886-2909.
 28. *Kumar, D., Karvas, R.M., Jones, B.R., McColl, E.R., Diveley, E., Jasj, S., Sharma, S., Kelly, J.C., **Theunissen, T.W.**, and I.U. Mysorekar (2024). SARS-CoV-2 ORF3a protein impairs syncytiotrophoblast maturation, alters ZO-1 localization, and shifts autophagic pathways in trophoblast cells and 3D organoids. *bioRxiv*, doi: <https://doi.org/10.1101/2024.09.25.614931>.

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30. *Yoon, E., Beltcheva, M., Ali, S.S., Fu, S., Yang, A., Dong, C., Zemke, J.E., Karvas, R.M., Chang, C., Fischer, L.A., Gontarz, P., Zhang, B., Dietmann, S., **Theunissen, T.W.**, and L. Solnica-Krezel (2025). *Development* 152 (17): dev204309.
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