

Curriculum vitae

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CURRENT POSITION

Since 2022 Mildred Scheel Professor (W3) for Functional Pediatric Genomics,
Experimental and Clinical Research Center (ECRC) of the Max Delbrück
Center for Molecular Medicine (MDC) and Charité Universitätsmedizin Berlin
Since 2022 Head of Preclinical Cancer Research, Department of Pediatric Oncology and
Hematology at Charité Universitätsmedizin Berlin
Since 2018 Emmy Noether Group Leader (DFG)
Experimental and Clinical Research Center (ECRC) of the Max Delbrück
Center for Molecular Medicine (MDC) and Charité Universitätsmedizin Berlin
Since 2021 Attending Physician (Oberarzt)
Department of Pediatric Oncology and Hematology at Charité
Universitätsmedizin Berlin (Director: Prof. Dr. med. Angelika Eggert)

SCIENTIFIC CAREER

Since 2018 Emmy Noether Group Leader (DFG)
Experimental and Clinical Research Center (ECRC) of the Max Delbrück
Center for Molecular Medicine (MDC) and Charité
2013 – 2016 Post-doctoral Research Fellow
Molecular Pharmacology Program, Sloan Kettering Institute, Memorial Sloan
Kettering Cancer Center, New York City, NY, USA
2012 – 2013 Clinician Scientist at Dpt. of Ped. Oncology, Hematology and SCT,
Universitätsklinikum Essen

CLINICAL CAREER

Since 2021 Attending Physician (Oberarzt)
Department of Pediatric Oncology and Hematology at Charité
Universitätsmedizin Berlin (Director: Prof. Dr. med. Angelika Eggert)
2016 – 2020 Residency and fellowship in pediatric oncology
Department of Pediatric Oncology and Hematology at Charité
Universitätsmedizin Berlin
2012 – 2013 Residency in pediatrics
Department of Pediatrics, Universitätsklinikum Essen, Germany

EDUCATION

2013 Dissertation, Dr. med.
RWTH Aachen University & Institute of Neuroscience and Medicine (INM-1)
Forschungszentrum Jülich
2004-2011 Medical school at Heinrich-Heine-Universität Düsseldorf

FELLOWSHIPS AND AWARDS

2020	ERC Starting Grant <i>CancerCirculome</i>
2020	Berliner Wissenschaftspreis (Kategorie Nachwuchs)
2020	Kind-Philipp-Preis für pädiatrisch-onkologische Forschung
2018-2020	Clinician-Scientist Fellowship (Excellence track), Berlin Institute of Health
2018	Hector Cancer Research Award
2018	Erna Brunner Cancer Research Award
2016-2018	Junior Clinician-Scientist Fellowship, Berlin Institute of Health
2017	AACR Fellow-in-Training Award
2006	Human Brain mapping Award

Publication Record

Publications after 2020

Original work – Last author	IF
1. Lange JT, Rose JC, Chen CY, Pichugin Y, Xie L, Tang J, Hung KL, Yost KE, Shi Q, Erb ML, Rajkumar U, Wu S, Taschner-Mandl S, Bernkopf M, Swanton C, Liu Z, Huang W, Chang HY, Bafna V, Henssen AG* , Werner B*, Mischel PS*. The evolutionary dynamics of extrachromosomal DNA in human cancers. <i>Nat Genet.</i> 2022	38.3
2. Dorado García H, Pusch F, Bei Y, von Stebut J, Ibáñez G, Guilan K, Imami K, Gürgen D, Rolff J, Helmsauer K, Meyer-Liesener S, Timme N, Bardin V, Chamorro González R, MacArthur IC, Chen CY, Schulz J, Wengner AM, Furth C, Lala B, Eggert A, Seifert G, Hundsoerfer P, Kirchner M, Mertins P, Selbach M, Lissat A, Dubois F, Horst D, Schulte JH, Spuler S, You D, Dela Cruz F, Kung AL, Haase K, DiVirgilio M, Scheer M, Ortiz MV, Henssen AG . Therapeutic targeting of ATR in alveolar rhabdomyosarcoma. <i>Nat Commun.</i> 2022	12.1
3. Schubert NA, Chen CY, Rodríguez A, Koster J, Dowless M, Pfister SM, Shields DJ, Stancato LF, Vassal G, Caron HN, van den Boogaard ML, Henssen AG* , Molenaar JJ*. Target actionability review to evaluate CDK4/6 as a therapeutic target in paediatric solid and brain tumours. <i>Eur J Cancer.</i> 2022	
4. Schmelz K, Toedling J, Huska M, Cwikla MC, Kruetzfeldt LM, Proba J, Ambros PF, Ambros IM, Boral S, Lodrini M, Chen CY, Burkert M, Guergen D, Szymansky A, Astrahantseff K, Kuenkele A, Haase K, Fischer M, Deubzer HE, Hertwig F, Hundsdorfer P, Henssen AG* , Schwarz RF*, Schulte JH*, Eggert A*. Spatial and temporal intratumour heterogeneity has potential consequences for single biopsy-based neuroblastoma treatment decisions. <i>Nat Commun.</i> 2021	12.1
5. Helmsauer K*, Valieva ME*, Ali S*, Chamorro González R, Schöpflin R, Röefzaad C, Bei Y, Dorado Garcia H, Rodriguez-Fos E, Puiggròs M, Kasack K, Haase K, Keskeny C, Chen CY, Kuschel LP, Euskirchen P, Heinrich V, Robson MI, Rosswog C, Toedling J, Szymansky A, Hertwig F, Fischer M, Torrents D, Eggert A, Schulte JH, Mundlos S*, Henssen AG* , Koche RP*. Enhancer hijacking determines extrachromosomal circular MYCN amplicon architecture in neuroblastoma. <i>Nat Commun.</i> 2020 Nov 16;11(1):5823. doi: 10.1038/s41467-020-19452-y	12.1
6. Koche RP*, Rodriguez-Fos E*, Helmsauer K*, Burkert M, MacArthur IC, Maag J, Chamorro R, Munoz-Perez N, Puiggròs M, Dorado Garcia H, Bei Y, Röefzaad C, Bardin V, Szymansky A, Winkler A, Thole T, Timme N, Kasack K, Fuchs S, Klironomos F, Thiessen N, Blanc E, Schmelz K, Künkele A, Hundsdörfer P, Rosswog C, Theissen J, Beule D, Deubzer H, Sauer S, Toedling J, Fischer M, Hertwig F, Schwarz RF, Eggert A, Torrents D*, Schulte JH*, Henssen AG* . "Extrachromosomal circular DNA drives oncogenic genome remodeling in neuroblastoma." <i>Nat Genet.</i> 2020	38.3

Original work – Co-author

IF

1. Hung KL, Luebeck J, Dehkordi SR, Colón CI, Li R, Wong IT, Coruh C, Dharanipragada P, Lomeli SH, Weiser NE, Moriceau G, Zhang X, Bailey C, Houlahan KE, Yang W, González RC, Swanton C, Curtis C, Jamal-Hanjani M, **Henssen AG**, Law JA, Greenleaf WJ, Lo RS, Mischel PS, Bafna V, Chang HY. Targeted profiling of human extrachromosomal DNA by CRISPR-CATCH. *Nat Genet.* 2022 38.3
2. Tüns AI, Hartmann T, Magin S, González RC, **Henssen AG**, Rahmann S, Schramm A, Köster J. Detection and Validation of Circular DNA Fragments Using Nanopore Sequencing. *Front Genet.* 2022
3. Launspach M, Temel D, Ohlendorf E, Zirngibl F, Materne B, Oevermann L, Deubzer HE, **Henssen AG**, Künkele A, Hundsdörfer P, Bernuth HV, Pruß A, Eggert A, Stackelberg AV, Lang P, Schulte JH. Rituximab therapy after pediatric hematopoietic stem cell transplantation can cause prolonged B cell impairment and increases the risk for infections - a retrospective matched cohort study. *Haematologica.* 2022
4. Berlak M, Tucker E, Dorel M, Winkler A, McGearey A, Rodriguez-Fos E, da Costa BM, Barker K, Fyle E, Calton E, Eising S, Ober K, Hughes D, Koutroumanidou E, Carter P, Stankunaite R, Proszek P, Jain N, Rosswog C, Dorado-Garcia H, Molenaar JJ, Hubank M, Barone G, Anderson J, Lang P, Deubzer HE, Künkele A, Fischer M, Eggert A, Kloft C, Henssen AG, Boettcher M, Hertwig F, Blüthgen N, Chesler L, Schulte JH. Mutations in ALK signaling pathways conferring resistance to ALK inhibitor treatment lead to collateral vulnerabilities in neuroblastoma cells. *Mol Cancer.* 2022 24
5. Thorwarth A, Haase K, Röefzaad C, Pajtler KW, Schramm K, Hauptmann K, Behnke A, Vokuhl C, Elgeti T, Gratopp A, Schulte JH, Scheer M, Hernáiz Driever P, Nysom K, Eggert A, Henssen AG, Deubzer HE. Genomic Evolution and Personalized Therapy of an Infantile Fibrosarcoma Harboring an NTRK Oncogenic Fusion. *JCO Precis Oncol.* 2022
6. Hung KL, Yost KE, Xie L, Shi Q, Helmsauer K, Luebeck J, Schöpflin R, Lange JT, Chamorro González R, Weiser NE, Chen C, Valieva ME, Wong IT, Wu S, Dehkordi SR, Duffy CV, Kraft K, Tang J, Belk JA, Rose JC, Corces MR, Granja JM, Li R, Rajkumar U, Friedlein J, Bagchi A, Satpathy AT, Tjian R, Mundlos S, Bafna V, **Henssen AG**, Mischel PS, Liu Z, Chang HY. ecDNA hubs drive cooperative intermolecular oncogene expression. *Nature.* 2021
7. Schmidt O, Nehls N, Prexler C, von Heyking K, Groll T, Pardon K, Garcia HD, Hensel T, Gürgen D, **Henssen AG**, Eggert A, Steiger K, Burdach S, Richter GHS. Class I histone deacetylases (HDAC) critically contribute to Ewing sarcoma pathogenesis. *J Exp Clin Cancer Res.* 2021 11.1
8. Scheer M, Hallmen E, Vokuhl C, Fuchs J, Tunn PU, Münter M, Timmermann B, Bauer S, **Henssen AG**, Kazanowska B, Niggli F, Ladenstein R, Ljungman G, Eggert A, Klingebiel T, Koscielniak E; Cooperative Weichteilsarkom Studiengruppe [CWS]. Pre-operative radiotherapy is associated with superior local relapse-free survival in advanced synovial sarcoma. *J Cancer Res Clin Oncol.* 2022
9. Sulejmani O, Grunewald L, Andersch L, Schwiebert S, Klaus A, Winkler A, Astrahantseff K, Eggert A, **Henssen AG**, Schulte JH, Anders K, Künkele A. Inhibiting Lysine Demethylase 1A Improves L1CAM-Specific CAR T Cell Therapy by Unleashing Antigen-Independent Killing via the FAS-FASL Axis. *Cancers* (Basel). 2021
10. Szymansky A, Kruetzfeldt LM, Heukamp LC, Hertwig F, Theissen J, Deubzer HE, Willing EM, Menon R, Fuchs S, Thole T, Schulte S, Schmelz K, Künkele A, Lang P, Fuchs J, Eggert A, Eckert C, Fischer M, Henssen AG, Rodriguez-Fos E, Schulte JH. Neuroblastoma Risk Assessment and Treatment Stratification with Hybrid Capture-Based Panel Sequencing. *J Pers Med.* 2021 4.5
11. Scheer M, Vokuhl C, Bauer S, Fuchs J, Loff S, Timmermann B, Münter M, **Henssen AG**, Kazanowska B, Niggli F, Ladenstein R, Ljungman G, Koscielniak E, Klingebiel 3.6

- T; European Cooperative Weichteilsarkom Studiengruppe [CWS]. The effect of adjuvant therapies on long-term outcome for primary resected synovial sarcoma in a series of mainly children and adolescents. **J Cancer Res Clin Oncol.** 2021
12. Grunewald L, Lam T, Andersch L, Klaus A, Schwiebert S, Winkler A, Gauert A, Heeren-Hagemann AI, Astrahantseff K, Klironomos F, Thomas A, Deubzer HE, **Henssen AG**, Eggert A, Schulte JH, Anders K, Kloke L, Künkele A. A Reproducible Bioprinted 3D Tumor Model Serves as a Preselection Tool for CAR T Cell Therapy Optimization. **Front Immunol.** 2021 6.4
 13. Regina C, Hamed E, Andrieux G, Angenendt S, Schneider M, Ku M, Follo M, Wachtel M, Ke E, Kikuchi K, **Henssen AG**, Schäfer BW, Boerries M, Wagers AJ, Keller C, Hettmer S. Negative correlation of single-cell PAX3:FOXO1 expression with tumorigenicity in rhabdomyosarcoma. **Life Sci Alliance.** 2021 4.6
 14. Textor A, Grunewald L, Anders K, Klaus A, Schwiebert S, Winkler A, Stecklum M, Rolff J, **Henssen AG**, Höpken UE, Eggert A, Schulte JH, Jensen MC, Blankenstein T, Künkele A. CD28 Co-Stimulus Achieves Superior CAR T Cell Effector Function against Solid Tumors Than 4-1BB Co-Stimulus. **Cancers (Basel).** 2021 6.1
 15. Roeschert I, Poon E, **Henssen AG**, Garcia HD, Gatti M, Giansanti C, Jamin Y, Ade CP, Gallant P, Schüle-Völk C, Beli P, Richards M, Rosenfeldt M, Altmeyer M, Anderson J, Eggert A, Döbelstein M, Bayliss R, Chesler L, Büchel G, Eilers M. Combined inhibition of Aurora-A and ATR kinase results in regression of MYCN-amplified neuroblastoma. **Nat Cancer.** 2021 n.a.
 16. Stangl C, de Blank S, Renkens I, Westera L, Verbeek T, Valle-Inclan JE, González RC, **Henssen AG**, van Roosmalen MJ, Stam RW, Voest EE, Kloosterman WP, van Haaften G, Monroe GR. Partner independent fusion gene detection by multiplexed CRISPR-Cas9 enrichment and long read nanopore sequencing. **Nat Commun.** 2020 12.1
 17. Marchetto A, Ohmura S, Orth MF, Knott MML, Colombo MV, Arrigoni C, Bardin V, Saucier D, Wehweck FS, Li J, Stein S, Gerke JS, Baldauf MC, Musa J, Dallmayer M, Romero-Pérez L, Hölting TLB, Amatruda JF, Cossarizza A, **Henssen AG**, Kirchner T, Moretti M, Cidre-Aranaz F, Sannino G, Grunewald TGP. Oncogenic hijacking of a developmental transcription factor evokes vulnerability toward oxidative stress in Ewing sarcoma. **Nat Commun.** 2020 12.1
 18. Kim H, Nguyen NP, Turner K, Wu S, Gujar AD, Luebeck J, Liu J, Deshpande V, Rajkumar U, Namburi S, Amin SB, Yi E, Menghi F, Schulte JH, **Henssen AG**, Chang HY, Beck CR, Mischel PS, Bafna V, Verhaak RGW. Extrachromosomal DNA is associated with oncogene amplification and poor outcome across multiple cancers. **Nat Genet.** 2020 38.3
 19. Toews K, Grunewald L, Schwiebert S, Klaus A, Winkler A, Ali S, Zirngibl F, Astrahantseff K, Wagner DL, **Henssen AG**, Deubzer HE, Schulte JH, Ochsenreither S, Eggert A, Künkele A. Central memory phenotype drives success of checkpoint inhibition in combination with CAR T cells. **Mol Carcinog.** 2020 3.8
 20. Ali S, Toews K, Schwiebert S, Klaus A, Winkler A, Grunewald L, Oevermann L, Deubzer HE, Tüns A, Jensen MC, **Henssen AG**, Eggert A, Schulte JH, Schwich E, Rebmann V, Schramm A, Künkele A. Tumor-Derived Extracellular Vesicles Impair CD171-Specific CD4+ CAR T Cell Efficacy. **Front Immunol.** 2020 6.4
 21. Orth MF, Hölting TLB, Dallmayer M, Wehweck FS, Paul T, Musa J, Baldauf MC, Surdez D, Delattre O, Knott MML, Romero-Pérez L, Kasan M, Cidre-Aranaz F, Gerke JS, Ohmura S, Li J, Marchetto A, **Henssen AG**, Özen Ö, Sugita S, Hasegawa T, Kanaseki T, Bertram S, Dirksen U, Hartmann W, Kirchner T, Grunewald TGP. High Specificity of BCL11B and GLG1 for EWSR1-FLI1 and EWSR1-ERG Positive Ewing Sarcoma. **Cancers (Basel).** 2020 6.1
 22. Scheer M, Blank B, Bauer S, Vokuhl C, Stegmaier S, Feuchtgruber S, **Henssen AG**, Sparber-Sauer M, Eggert A, Handgretinger R, Pekrun A, Rossig C, Rutkowski S, Schlegel PG, Schrappe M, Simon T, Kazanowska B, Niggli F, Ladenstein R, Ljungman G, Jahnukainen K, Fuchs J, Bielack SS, Koscielniak E, Klingebiel T; Cooperative Weichteilsarkom Studiengruppe [CWS]. "Synovial sarcoma disease

characteristics and primary tumor sites differ between patient age groups: a report of the Cooperative Weichteilsarkom Studiengruppe (CWS).” **J Cancer Res Clin Oncol.** 2020

23. Thole TM, Toedling J, Sprüssel A, Pfeil S, Savelyeva L, Capper D, Messerschmidt C, Beule D, Groeneveld-Krentz S, Eckert C, Gambara G, **Henssen AG**, Finkler S, Schulte JH, Sieber A, Bluethgen N, Regenbrecht CRA, Künkele A, Lodrini M, Eggert A, Deubzer HE. Reflection of neuroblastoma intratumor heterogeneity in the new OHC-NB1 disease model. **Int J Cancer.** 2020 7.3

Review articles

1. Yi E, Chamorro González R, **Henssen AG**, Verhaak RGW. Extrachromosomal DNA amplifications in cancer. **Nat Rev Genet.** 2022
2. Pecorino LT, Verhaak RGW, **Henssen A**, Mischel PS. Extrachromosomal DNA (ecDNA): an origin of tumor heterogeneity, genomic remodeling, and drug resistance. **Biochem Soc Trans.** 2022
3. The genomic and spatial mobility of extrachromosomal DNA and its implications for cancer therapy. van Leen E, Brückner L, **Henssen AG.** **Nat Genet.** 2022
4. Shedding Light on ecDNA Behavior Using CRISPR-Based Live-Cell Imaging. **Henssen AG.** **Cancer Discov.** 2022.
5. Current and Future Treatment Strategies for Rhabdomyosarcoma. Chen C, Dorado Garcia H, Scheer M, **Henssen AG.** **Front Oncol.** 2019
6. **Henssen A.G.**, Kentsis A. Emerging functions of DNA transposases and oncogenic mutators in childhood cancer development. **JCI Insight.** 2018 Oct 18;3(20).
7. Lindner S., **Henssen A.G.**, Astrahantseff K., Schulte J.H. ALK pERKs up MYCN in neuroblastoma. **Sci Signal.** 2014, Oct 28;7(349):pe27.

*equally contributing authors.

Book publications

Harrisons Innere Medizin, 20. Auflage, 2020, Kapitel 68 Krebszellbiologie (Adaptation aus dem Englischen)