

Joshua D. Frenster, PhD

Gran Via de les Corts Catalanes 516, 7o-2a
 08015 Barcelona, Spain
 Tel: (+34) 651 41 66 32
 E-Mail: joshuadavid.frenster@upf.edu

Nationality: German
Date of Birth: August 19th, 1990

Education

- 08/2014 - 12/2020** **NYU School of Medicine**, Skirball Institute, *New York, NY, USA*
Doctor of Philosophy (PhD) in Cell Biology under the stem cell program. Laboratory group of Dr. Dimitris Placantonakis. Thesis title: "*GPR133 (ADGRD1) - Mechanisms of action, ligand discovery, and its role in glioblastoma*".
- 08/2014 - 01/2017** **NYU School of Medicine**, Skirball Institute, *New York, NY, USA*
Master of Science (MSc) in the Stem Cell program. **GPA 3.96**
- 08/2011 - 06/2014** **Jacobs University Bremen**, *Bremen, Germany*
Bachelor of Science (BSc) in Biochemistry and Cell Biology.
 German grading scale GPA 1.33 (American grading system equivalent GPA: **A / 3.8**).
 Laboratory group of Prof. Dr. Klaudia Brix. Bachelor thesis title: "*Cathepsin S - differences in expression and localization between various thyroid carcinoma cells and possible role in tumor malignancy*".
- 08/2003 - 06/2010** **Amandus-Abendroth-Gymnasium Cuxhaven**, *Cuxhaven, Germany*
German Abitur. German grading scale GPA of 1.2 (American equivalent **A / 3.9**).

Practical Experience

- 03/2022 – present** **Universitat Pompeu Fabra**, *Barcelona, Spain*
 Postdoctoral Research position in the laboratory group of Dr. Alfonso Martinez Arias
- 02/2021 – 01/2022** **NYU School of Medicine**, Skirball Institute, *New York, NY, USA*
 Postdoctoral Research position in the laboratory group of Dr. Dimitris Placantonakis.
- 08/2015 – 01/2021** **NYU School of Medicine**, Skirball Institute, *New York, NY, USA*
 PhD thesis research in the laboratory group of Dr. Dimitris Placantonakis.
- 09/2014 - 07/2015** **NYU School of Medicine**, Skirball Institute, *New York, NY, USA*
 Laboratory Rotations (3 months each) with
 Dr. Markus Schober: ChIP seq on squamous cell carcinoma stem cells
 Dr. Jeremy Nance: Lineage specific ablation of stem cell niche cells in *C. elegans in vivo*
 Dr. Glenn Fishman: Directed differentiation of Purkinje cells from human iPSCs
 Dr. Dimitris Placantonakis: Characterization of glioblastoma stem cell subpopulations
- 07/2014 - 08/2014** **University of Akureyri**, *Akureyri, Iceland*
 Microbiology field trip excursion. Geo-mapping of environmental bacteria by sampling from glaciers, ocean, lichens, and mountain tops. Isolation of collected strains, sequencing, and metabolic characterization of novel strains.
- 08/2013 - 06/2014** **Jacobs University Bremen**, *Bremen, Germany*
 Bachelor thesis research in the research group of Dr. Klaudia Brix on the role of proteases in thyroid cancer malignancy.
- 06/2013 - 08/2013** **NYU School of Medicine, Skirball Institute**, *New York, USA*
 Summer Undergraduate Research Program (SURP) in the research group of Dr. Matthias Stadtfeld: developed a panel of fluorescent viral vectors to study transcription factors involved in the specification of hematopoietic stem cells.

- 06/2012 - 08/2012** **OHB Systems AG, Bremen, Germany**
Internship in the field of Astrobiology, Research Group Prof. Dr. K. Slenzka: developed a closed-loop culture system for noninvasively and optically monitoring biological and chemical parameters of *C. reinhardtii* cells in space environments.
- 05/2012** **Jacobs University Bremen, Bremen, Germany**
Student research assistant in the laboratory of Prof. Dr. Lerchl. Studying the influence of radiation on rat behavioral and learning.
- 05/2010 - 06/2010** **Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany**
and Internship in the research group of Dr. Gerald Langer in the field of marine-biogeochemistry; Conducted experiments with benthic foraminifera and coccolithophorida
10/2010 - 11/2010 in the field of nutrition limitation, de- and recalcification.

Awards and Fellowships

- 2021** SHARP early-career investigator scholarship
2019-2020 NYSTEM training grant fellowship
2016 Suma cum laude honors for Master of Science
2016 McCracken Award by NYU School of Medicine
2013-2015 Invited trainee membership to AAAS/Science Program of Excellence
2014 Suma cum laude honors for Bachelor of Science
2014 President's List for excellence at Jacobs University Bremen
2013 President's List for excellence at Jacobs University Bremen
2012 President's List for excellence at Jacobs University Bremen
2012-2015 Scholarship of the "Studienstiftung des Deutschen Volkes"
2011-2014 Merit-based scholarship from Jacobs University Bremen
2010 Suma cum laude and graduating GPA of my city (Abitur)

Skills

Languages: **German:** native speaker **English:** professional fluent
Spanish: basic knowledge **Latin:** Great Latinum

Experimental Lab skills: **Cell Culture:** Establishing primary patient-derived cell cultures from operative specimens; Lentiviral production and infection; Flow cytometry and Fluorescence-Activated Cell Sorting (FACS); Cell cycle analysis; Assays of Invasion, Proliferation, Apoptosis, Self-renewal; Second messenger and signaling assays; hESC and iPSC culture;

Microscopy: Indirect immunofluorescent staining; Confocal microscopy; Live FRET microscopy; Writing macros for bulk image analysis in ImageJ; Patient tissue cryo-sectioning and staining;

Molecular Biology: Molecular cloning; Gibson Assembly; qRT-PCR; shRNA-mediated knockdown; inducible knockdown technologies; CRISPR technology; RNA-seq, ChIP-seq.

Protein Biochemistry: Protein purification; Co-immunoprecipitation; SDS-PAGE (Western blotting, Silverstain, Coomassie); Subcellular fractionation; Interaction partner-discovery screens-proteomics.

In Vivo: Survival mouse surgery (implantation of xenografts into mouse brain); bioluminescent IVIS; Intracardiac perfusion; Cryosectioning mouse tissues; Animal colony maintenance and propagation.

Software skills: Advanced knowledge: Microsoft Office, Image J, FlowJo, Prism, SnapGene, Living Image
Basic knowledge: Python, R, IPA, Adobe Illustrator, PyMol, Scaffold

Students supervised and mentored during the PhD

06/2021 - 01/2022	Luke Bonnani	(Medical Student volunteer)
02/2021 - 06/2021	Jonathan Sabio	(Master's degree exchange student)
12/2019 - 05/2021	Adler Guerrero	(Undergraduate volunteer)
10/2018 - 12/2018	Niklas Boess	(Graduate rotation student)
09/2018 - 03/2019	James Sun	(Medical Student volunteer)
06/2018 - 09/2018	Paulomi Gohel	(Undergraduate volunteer)
01/2018 - 08/2018	Taylor Wong	(Undergraduate volunteer)
01/2018 - 02/2018	Jorge Morales	(Graduate rotation student)
11/2017 - 03/2018	Shivang Desai	(Medical Student volunteer)
09/2017 - 11/2017	Geraldine Cayanan	(Graduate rotation student)
01/2017 - 04/2017	Kartikeya Nagendra	(Graduate rotation student)
09/2016 - 03/2017	Joravar Dhaliwal	(Medical Student volunteer)
07/2017 - 08/2017	Lindsey Remark	(Medical Student volunteer)
11/2016 - 08/2017	Abdulahkeem Algambdi, M.D.	(Research Fellow)
07/2016 - 06/2017	Julio Inocencio	(Medical Student volunteer)
06/2016 - 08/2016	Anadjeet Khahera	(Medical Student volunteer)

Scientific Conference Presentations

05/2022	Adhesion GPCR Workshop 2020/2022 , <i>Copenhagen, Denmark</i> Oral presentation
11/2021	Society for Neuro-Oncology Annual Conference , <i>Boston, MA, USA</i> Poster presentation
06/2021	Transatlantic ECI GPCR symposium , <i>Virtual</i> Oral presentation
11/2019	Society for Neuro-Oncology Annual Conference , <i>Phoenix, AZ, USA</i> Poster presentation
09/2019	Adhesion GPCR Retreat of the Research Unit FOR 2149 , <i>Eisenach, Germany</i> Oral presentation
03/2018	Adhesion GPCR Retreat of the Research Unit FOR 2149 , <i>Bamberg, Germany</i> Oral presentation
06/2017	International Society for Stem Cell Research Annual Meeting , <i>Boston, MA, USA</i> Poster presentation
05/2017	NYSTEM conference , <i>New York, NY, USA</i> Poster presentation
03/2017	NYU Kimmel Center for Stem Cell Biology Retreat , <i>New York, NY, USA</i> Oral presentation
11/2016	Society for Neuro-Oncology Annual Conference , <i>Scottsdale, AZ, USA</i> Blitz-talk in plenary hall and e-poster presentation
05/2016	NYU Kimmel Center for Stem Cell Biology Retreat , <i>New York, NY, USA</i> Poster presentation
08/2015	Leadership Alliance National Symposium , <i>Stamford, CT, USA</i> Moderator and judge of undergraduate research talks; plenary panelist.
08/2013	Leadership Alliance National Symposium , <i>Stamford, CT, USA</i> Oral presentation.

Pubmed listed publications

1. **Frenster JD**, Erdjument-Bromage H, Liu W, Stephan G, Ravn-Boess N, Bready D, Wilcox J, Kieslich B, Jankovic M, Wilde C, Horn S, Sträter N, Liebscher I, Schöneberg T, Fenyo D, Neubert TA, Placantonakis DG. "PTK7 is a positive allosteric modulator of GPR133 (ADGRD1) signaling in glioblastoma." [BioRxiv preprint](#). **2022**.
2. Stephan G, **Frenster JD**, Liebscher I, Placantonakis DG. "Activation of the adhesion GPCR GPR133 (ADGRD1) by antibodies targeting the N-terminus." [JBC](#). **2022** Jun;298(6):101949.

3. **Frenster JD**, Stephan G, Ravn-Boess N, Bready D, Wilcox J, Kieslich B, Wilde C, Sträter N, Wiggin GR, Liebscher I, Schöneberg T, Placantonakis DG. "Functional impact of intramolecular cleavage and dissociation of adhesion G protein-coupled receptor GPR133 (ADGRD1) on canonical signaling." JBC. **2021** May 19:100798.
4. Yu JR, LeRoy G, Bready D, **Frenster JD**, Saldana-Meyer R, Jin Y, Descostes N, Stafford JM, Placantonakis DG, Reinberg D. "The H3K36me2 writer-reader dependency in H3K27M-DIPG." Science Advances. **2021** Jul 14;7(29):eabg7444.
5. **Frenster JD**, Kader M, Kamen MS, Sun J, Chiriboga L, Serrano J, Bready D, Golub D, Ravn-Boess N, Stephan G, Chi AS, Kurz SC, Jain R, Park CY, Fenyo D, Liebscher I, Schoneberg T, Wiggin GR, Newman R, Barnes M, Dickson JK, MacNeil DJ, Huang X, Shohdy N, Snuderl M, Zagzag D and Placantonakis DG. "Expression profiling of the adhesion G protein-coupled receptor GPR133 (ADGRD1) in glioma subtypes." Neurooncol Adv. **2020** Apr 28;2(1):vdaa053.
6. **Frenster JD**, Desai S, Placantonakis DG. "*In vitro* evidence for glioblastoma cell death in temperatures found in the penumbra of laser-ablated tumors." Int J Hyperthermia. **2020** Jul;37(2):20-26.
7. Cui X, Ma C, Vasudevaraja V, Serrano J, Tong J, Peng Y, Delorenzo M, Shen G, **Frenster JD**, Morales RT, Qian W, Tsirigos A, Chi AS, Jain R, Kurz CS, Sulman EP, Placantonakis DG, Snuderl M and Chen W. "Dissecting the immunosuppressive tumor microenvironments in Glioblastoma-on-a-Chip for optimized PD-1 immunotherapy." Elife. **2020** Sep 10;9:e52253.
8. Spino M, Kurz SC, Chiriboga L, Serrano J, Zeck B, Sen N, Patel S, Shen G, Vasudevaraja V, Tsirigos A, Suryadevara CM, **Frenster JD**, Tateishi K, Wakimoto H, Jain R, Riina HA, Nicolaidis T, Sulman EP, Cahill DP, Golfinos JG, Isse K, Saunders LR, Zagzag D, Placantonakis DG, Snuderl M and Chi AS. "Cell surface Notch ligand DLL3 is a therapeutic target in isocitrate dehydrogenase mutant glioma." Clinical Cancer Research. **2019** Feb 15;25(4):1261-1271.
9. **Frenster JD** and Placantonakis DG. "Establishing Primary Human Glioblastoma Tumorsphere Cultures from Operative Specimens." Methods Mol Biol. **2018**;1741:63-69.
10. Inocencio J, **Frenster JD** and Placantonakis DG. "Isolation of Glioblastoma Stem Cells with Flow Cytometry." Methods Mol Biol. **2018**;1741:71-79
11. **Frenster JD**, Inocencio J and Placantonakis DG. "Lentiviral Transduction of Primary Human Glioblastoma Cultures." Methods Mol Biol. **2018**;1741:81-89.
12. **Frenster JD** and Placantonakis DG. "Bioluminescent *In Vivo* Imaging of Orthotopic Glioblastoma Xenografts in Mice." Methods Mol Biol. **2018**;1741:191-198.
13. Modrek AS, Golub D, Khan T, Bready D, Prado J, Bowman C, Deng J, Zhang G, Rocha PP, Raviram R, Lazaris C, Stafford JM, LeRoy G, Kader M, Dhaliwal J, Bayin NS, **Frenster JD**, Serrano J, Chiriboga L, Baitalmal R, Nanjangud G, Chi AS, Golfinos JG, Wang J, Karajannis MA, Bonneau RA, Reinberg D, Tsirigos A, Zagzag D, Snuderl M, Skok JA, Neubert TA and Placantonakis DG. "Low-Grade Astrocytoma Mutations in IDH1, P53, and ATRX Cooperate to Block Differentiation of Human Neural Stem Cells via Repression of SOX2." Cell Reports. **2017** Oct 31;21(5):1267-1280.
14. Bayin NS, **Frenster JD**, Sen R, Si S, Modrek AS, Galifianakis N, Dolgalev I, Ortenzi V, Illa-Bochaca I, Khahera A, Serrano J, Chiriboga L, Zagzag D, Golfinos JG, Doyle W, Tsirigos A, Heguy A, Chesler M, Barcellos-Hoff MH, Snuderl M and Placantonakis DG. "Notch signaling regulates metabolic heterogeneity in glioblastoma stem cells." Oncotarget. **2017** May 23;8(39):64932-64953.
15. **Frenster JD***, Inocencio JF*, Xu Z, Dhaliwal J, Alghamdi A, Zagzag D, Bayin NS and Placantonakis DG. "GPR133 Promotes Glioblastoma Growth in Hypoxia." Neurosurgery. **2017** Sep 1;64(CN_suppl_1):177-181. (*Co-First authorship)
16. Bayin NS*, **Frenster JD***, Kane JR, Rubenstein J, Modrek AS, Baitalmal R, Dolgalev I, Rudzenski K, Scarabottolo L, Crespi D, Redaelli L, Snuderl M, Golfinos JG, Doyle W, Pacione D, Parker EC, Chi AS, Heguy A, MacNeil DJ, Shohdy N, Zagzag D and Placantonakis DG. "GPR133 (ADGRD1), an adhesion G-protein-coupled receptor, is necessary for glioblastoma growth." Oncogenesis. **2016** Oct 24;5(10):e263. (*Co-First authorship)
17. Bustoros M, Thomas C, **Frenster JD**, Modrek AS, Bayin NS, Snuderl M, Rosen G, Schiff PB and Placantonakis DG. "Adult Primary Spinal Epidural Extrasosseous Ewing's Sarcoma: A Case Report and Review of the Literature." Case Rep Neurol Med. **2016**;2016:1217428.

Extracurricular Activities

- 08/2015 - 07/2016** **Vice President Sackler Student Council – New York University, New York, NY, USA**
Represented the student body of the NYU School of Medicine in meeting with administration, organized and budgeted social and scientific events.
- 07/2015 - 08/2015** **Assistant of Summer Undergrad. Research Program – New York University, NY, USA**
Helped to organize and execute the summer undergraduate research program of NYU School of Medicine. Coached the students towards an oral conference presentation at the Leadership Alliance National Symposium.
- 05/2012 - 06/2014** **Laboratory Teaching Assistant - Jacobs University Bremen, Bremen, Germany**
Supervised and instructed first- and second-year students in their biochemistry and cell biology laboratory modules.
- 08/2011 - 06/2014** **Jacobs University Bremen, Bremen, Germany**
Student advisor; instructor of the Aikiken (Japanese swordplay) club; head of the music club; student coordinator of the campus' sound and light technicians (coordinator of 15 employees).
- 08/2007 - 06/2008** **Business at School Competition by Boston Consulting Group, Hamburg, Germany**
Analyzed structure, financial status, and perspectives of several companies, and gave advice for performance improvement. Designed a detailed business plan to produce and distribute a product developed by our group.
- 08/2007 - 06/2008** **Amandus-Abendroth-Gymnasium, Cuxhaven, Germany**
Student parliament president.

Hobbies

Music: Recorded original album as guitarist of the band PandaKraft; Performed as drummer in other bands.

Japanese martial arts: Instructor of Aikido, Aikiken.

Outdoors activities: Archery; Hiking; Snowboarding.

Other: Whiskey-tasting; Having long discussions about Star Wars; Learning Japanese.