

Ralf S Schmid, PhD MSCR

Research Director

University of Pennsylvania
Gene Therapy Program
125 S. 31st Street
Philadelphia, PA 19104

Ph. 215-898-8582 (office)
Ph. 215-360-1705 (cell)
Email: rsschmid@upenn.edu

EDUCATION

- University of North Carolina School of Public Health - Chapel Hill, NC** 2011-2013
M.S. in Clinical Research
Advisor: C. Ryan Miller, MD/PhD, UNC Pathology and Neurology Depts.
- University of North Carolina School of Medicine - Chapel Hill, NC** 1995-2000
Ph.D. in Biochemistry and Biophysics
Advisor: Patricia Maness, PhD, UNC Biochemistry Dept. and Neuroscience Center
- Eberhardt-Wilhelms Universität Tübingen (Germany)** 1992-1995
B.S. (equivalent), Department of Physiological Chemistry

PROFESSIONAL EXPERIENCE

- University of Pennsylvania – Philadelphia, PA** 2018-
Research Director, Neurodevelopmental Diseases
Gene Therapy Program
- University of North Carolina - Chapel Hill, NC** 2015-2018
Research Associate, autism spectrum and neurodevelopmental disorders research
Neuroscience Center
Supervisors: Ben Philpot, PhD and Mark Zylka, PhD
- University of North Carolina - Chapel Hill, NC** 2010-2015
Research Associate, Translational Neuro-Oncology Laboratory
Lineberger Comprehensive Cancer Center
Supervisor: C. Ryan Miller, MD/PhD
- Duke University Medical Center - Durham, NC** 2007-2010
Research Scientist, Center for Drug Discovery and Department of Neurobiology
Supervisor: Donald Lo, PhD
- Novartis Institutes for Biomedical Research - Cambridge, MA** 2005-2007
Research Investigator, Models for Disease Center, Division of Neurobiology
Supervisor: En Li, PhD

Ralf Schmid, PhD MSCR University of North Carolina - Chapel Hill, NC Post-doctoral Research Assistant, Neuroscience Center <i>Mentor: Eva Anton, PhD</i>	2001-2005
University of Texas Southwestern Medical Center - Dallas, TX Post-doctoral Trainee, Center for Basic Neurosciences and Howard Hughes Medical Institute <i>Mentor: Thomas Südhof, MD</i>	2000-2001

AWARDS, FELLOWSHIPS AND GRANTS

Peer Reviewed Medical Research Program, Discovery Award CDMRP (Department of Defense), \$200,000	2018-2020
NARSAD Young Investigator Grant Brain & Behavior Research Foundation, \$70,000	2018-2020
Rett Syndrome Research Trust Pilot grant, co-investigator, \$143,000	2017-2018
Basic Science Research Award Society for Neuro-Oncology	2012
Research Award of the Ball Family Foundation Garner, NC - \$8,000 (research funding)	2009-2010
Research Award of the Anna's Angels Foundation for Down Syndrome Research Duke University Medical Center, Durham, NC - \$50,000 (research funding)	2007-2009
Helen Lynn White Neuroscience Post-Doctoral Award Fellowship University of North Carolina Neuroscience Center, Chapel Hill, NC	2003-2005
Medical Alumni Association Endowment Graduate Student Grant University of North Carolina School of Medicine, Chapel Hill, NC	1998
German University Scholarship Foundation Fellow Bonn, Germany (Studienstiftung des Deutschen Volkes Stipendium)	1992-1997

TRAINEES

Undergraduate students

- | | |
|--|-----------|
| 1. Daniel Neff, BS, Duke University | 2008-2010 |
| 2. Andrea Werneke, BA, UNC Chapel Hill | 2010-2013 |
| 3. Anna Sirbu, BS, UNC Chapel Hill | 2010-2014 |

Ralf Schmid, PhD MSCR

- | | |
|---|-------------|
| 4. Emily Stroobant, BS, UNC Chapel Hill
<i>UNC 2014 Undergraduate Research Fellowship recipient</i> | 2013-2014 |
| 5. Annie Whitacre, BS, UNC Chapel Hill | 2014-2015 |
| 6. Marissa Rice, senior, UNC Chapel Hill | 2014-2018 |
| 7. Victoria Bechtold, senior, UNC Chapel Hill | 2016-2017 |
| 8. Patricia deTomas-Medina, Pennsylvania State University
<i>UNC 2016 SOLAR fellowship recipient</i> | summer 2016 |
| 9. Jaeline Anguiano, junior, UNC Chapel Hill | 2017-2018 |
| 10. Shwan Pierre, junior, UNC Chapel Hill | 2017-2018 |
| 11. Clarissa Morales, Vanderbilt University
<i>UNC 2017 SOLAR fellowship recipient</i> | summer 2017 |

SELECTED RECENT PRESENTATIONS

- | | |
|---|------|
| Annual Meeting of the Society for Neuro-Oncology
Platform Oral Presentation
<i>De-differentiation of astrocytes into glioblastoma stem cells through core pathway mutations</i> | 2015 |
| Annual Meeting of the Society for Neuro-Oncology
Platform Oral Presentation
<i>The role of regional astrocyte identity in astrocytoma genomic heterogeneity</i> | 2013 |
| Annual Meeting of the Society for Neuro-Oncology
Award Oral Presentation
<i>Cortical GFAP+ astrocytes as a potential cellular origin of GBM</i> | 2012 |
| Annual Meeting of the American Association for Cancer Research
Award Poster Presentation
<i>Roles of cortical and subventricular GFAP+ astrocytes in initiation of astrocytomas</i> | 2012 |

PEER-REVIEWED PUBLICATIONS (selection of most recent out of 27 total)

For full record and to access publications, please visit:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/ralf.schmid.1/bibliography/40090580/public/?sort=date&direction=descending>

1. McNeill RS, Canoutas DA, Stuhlmiller TJ, Dhruv HD, Irvin DM, Bash RE, Angus SP, Herring LE, Simon JM, Skinner KR, Limas JC, Chen X, **Schmid RS**, Siegel MB, Van Swearingen AED, Hadler MJ, Sulman EP, Sarkaria JN, Anders CK, Graves LM, Berens ME, Johnson GL, Miller CR. Combination therapy with potent PI3K and MAPK inhibitors overcomes adaptive kinome resistance to single agents in preclinical models of glioblastoma. *Neuro-oncology*. 2017; 19(11):1469-1480. PMID: 28379424, PMCID: PMC5737415

2. Vitucci M, Irvin DM, McNeill RS, **Schmid RS**, Simon JM, Dhruv HD, Siegel MB, Werneke AM, Bash RE, Kim S, Berens ME, Miller CR. Genomic profiles of low-grade murine gliomas evolve during progression to glioblastoma. *Neuro Oncol.* 2017 Sep 1;19(9):1237-1247. doi: 10.1093/neuonc/nox050. PubMed PMID: 28398584; PubMed Central PMCID: PMC5570221.
3. J.R. Bagó, Okolie O, Dumitru R, Ewend MG, Parker JS, Werff RV, Underhill TM, **Schmid RS**, Miller CR, Hingtgen SD. Tumor-homing cytotoxic human induced neural stem cells for cancer therapy. *Sci Transl Med.* 2017 Feb 1;9(375). pii: eaah6510. doi: 10.1126/scitranslmed.aah6510. PubMed PMID: 28148846.
4. Okolie O, Bago JR, **Schmid RS**, Irvin DM, Bash RE, Miller CR, Hingtgen SD. Reactive astrocytes potentiate tumor aggressiveness in a murine glioma resection and recurrence model. *Neuro Oncol.* 2016 Dec;18(12):1622-1633. PubMed PMID: 27298311.
5. **Schmid RS**, Simon JM, Vitucci M, McNeill RS, Bash RE, Werneke AM, Huey L, White KK, Ewend MG, Wu J, Miller CR. Core pathway mutations induce de-differentiation of murine astrocytes into glioblastoma stem cells that are sensitive to radiation but resistant to temozolomide. *Neuro Oncol.* 2016 Jul;18(7):962-73. doi: 10.1093/neuonc/nov321. PubMed PMID: 26826202; PubMed Central PMCID: PMC4896545
6. McNeill RS, **Schmid RS**, Bash RE, Vitucci M, White KK, Werneke AM, Constance BH, Huff B, Miller CR. Modeling astrocytoma pathogenesis in vitro and in vivo using cortical astrocytes or neural stem cells from conditional, genetically engineered mice. *J Vis Exp.* 2014 Aug 12;(90):e51763. doi: 10.3791/51763. PubMed PMID: 25146643; PubMed Central PMCID: PMC4827968.
7. Vitucci M, Karpinich NO, Bash RE, Werneke AM, **Schmid RS**, White KK, McNeill RS, Huff B, Wang S, Van Dyke T, Miller CR. Cooperativity between MAPK and PI3K signaling activation is required for glioblastoma pathogenesis. *Neuro Oncol.* 2013 Oct;15(10):1317-29. doi: 10.1093/neuonc/not084. PubMed PMID: 23814263; PubMed Central PMCID: PMC3779038.
8. **Schmid RS**, Vitucci M, Miller CR. Genetically engineered mouse models of diffuse gliomas. *Brain Res Bull.* 2012 May 1;88(1):72-9. doi: 10.1016/j.brainresbull.2011.06.002. Review. PubMed PMID: 21684324.
9. Hoffstrom BG, Kaplan A, Letso R, **Schmid RS**, Turmel GJ, Lo DC, Stockwell BR. Inhibitors of protein disulfide isomerase suppress apoptosis induced by misfolded proteins. *Nat Chem Biol.* 2010 Dec;6(12):900-6. doi: 10.1038/nchembio.467. PubMed PMID: 21079601; PubMed Central PMCID: PMC3018711.
10. Braithwaite SP, **Schmid RS**, He DN, Sung ML, Cho S, Resnick L, Monaghan MM, Hirst WD, Essrich C, Reinhart PH, Lo DC. Inhibition of c-Jun kinase provides neuroprotection in a model of Alzheimer's disease. *Neurobiol Dis.* 2010 Sep;39(3):311-7. doi: 10.1016/j.nbd.2010.04.015. PubMed PMID: 20451607; PubMed Central PMCID: PMC2910136.