

## Nikolaus Schultz

Head, Knowledge Systems, Kravis Center for Molecular Oncology  
Associate Attending, Computational Oncology, Department of Epidemiology and Biostatistics  
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### Professional Positions

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2014 – present	Head, Knowledge Systems, Center for Molecular Oncology, Memorial Sloan Kettering Cancer Center
2014 – present	Associate Attending, Computational Oncology Service, Department of Biostatistics and Epidemiology Affiliate Member, Human Oncology and Pathogenesis Program Memorial Sloan Kettering Cancer Center
2012 – present	Young Investigator, Stand Up To Cancer Prostate Cancer Dream Team
2013 – 2014	Associate Laboratory Member, Computational Biology Center, Memorial Sloan Kettering Cancer Center
2009 – 2013	Investigator, Stand Up To Cancer PI-3-Kinase Dream Team
2008 – 2013	Manager of Biocomputing and Cancer Genomics, Computational Biology Center, Memorial Sloan Kettering Cancer Center
2004 – 2008	Postdoctoral Fellow, Computational Biology Center, Memorial Sloan Kettering Cancer Center, laboratory of Chris Sander
2001 – 2003	Teaching faculty of the Physiology Summer Course at the Marine Biological Laboratory in Woods Hole, MA

### Education

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2000 – 2004	<i>Dr. rer. nat.</i> (Ph.D.) in Biochemistry, Freie Universität Berlin Research conducted in the laboratory of David L. Garbers The University of Texas Southwestern Medical Center in Dallas, TX
1994 – 2000	<i>Diplom</i> (M.S.) in Biochemistry, Freie Universität Berlin

### Awards

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2015	Stupski Prize in Prostate Cancer Computational Oncology
2014	The Columbia Hospital Research Foundation Annual Award for Excellence in Obstetrical and Gynecologic Research
2014	Young Investigator Award, Prostate Cancer Foundation
2013	Josie Robertson Investigator Award, Robertson Foundation
2013	MSKCC SPORE in Prostate Cancer Career Development Award

## Publications

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99. Dalin MG, Desrichard A, Katabi N, Makarov V, Walsh LA, Lee KW, Wang Q, Armenia J, West L, Dogan S, Wang L, Ramaswami D, Ho AL, Ganly I, Solit D, Berger MF, **Schultz N**, Reis-Filho JS, Chan TA, Morris LG. **Comprehensive molecular characterization of salivary duct carcinoma reveals actionable targets and similarity to apocrine breast cancer.** Clin Cancer Res. 2016 Apr 21. pii: clincanres.0637.2016.
98. Yaeger R, Shah MA, Miller VA, Kelsen JR, Wang K, Heins ZJ, Ross JS, He Y, Sanford E, Yantiss RK, Balasubramanian S, Stephens PJ, **Schultz N**, Oren M, Tang L, Kelsen D. **Genomic Alterations Observed in Colitis-associated Cancers are Distinct from Those Found in Sporadic Colorectal Cancers and Vary by Type of Inflammatory Bowel Disease.** Gastroenterology. 2016 Apr 7. pii: S0016-5085(16)30053-1.
97. Kumar A, Coleman I, Morrissey C, Zhang X, True LD, Gulati R, Etzioni R, Bolouri H, Montgomery B, White T, Lucas JM, Brown LG, Dumpit RF, DeSarkar N, Higano C, Yu EY, Coleman R, **Schultz N**, Fang M, Lange PH, Shendure J, Vessella RL, Nelson PS. **Substantial interindividual and limited intraindividual genomic diversity among tumors from men with metastatic prostate cancer.** Nat Med. 2016 Apr;22(4):369-78.
96. Liu Y, Chen C, Xu Z, Scuoppo C, Rillahan CD, Gao J, Spitzer B, Bosbach B, Kasthuber ER, Baslan T, Ackermann S, Cheng L, Wang Q, Niu T, **Schultz N**, Levine RL, Mills AA, Lowe SW. **Deletions linked to TP53 loss drive cancer through p53-independent mechanisms.** Nature. 2016 Mar 24;531(7595):471-5.
95. Landa I, Ibrahimasic T, Boucai L, Sinha R, Knauf JA, Shah RH, Dogan S, Ricarte-Filho JC, Krishnamoorthy GP, Xu B, **Schultz N**, Berger MF, Sander C, Taylor BS, Ghossein R, Ganly I, Fagin JA. **Genomic and transcriptomic hallmarks of poorly differentiated and anaplastic thyroid cancers.** J Clin Invest. 2016 Mar 1;126(3):1052-66.
94. Şenbabaoğlu Y, Sümer SO, Sánchez-Vega F, Bemis D, Ciriello G, **Schultz N**, Sander C. **A Multi-Method Approach for Proteomic Network Inference in 11 Human Cancers.** PLoS Comput Biol. 2016 Feb 29;12(2):e1004765.
93. Chang MT, Asthana S, Gao SP, Lee BH, Chapman JS, Kandath C, Gao J, Socci ND, Solit DB, Olshen AB, **Schultz N**, Taylor BS. **Identifying recurrent mutations in cancer reveals widespread lineage diversity and mutational specificity.** Nat Biotechnol. 2016 Feb;34(2):155-63.
92. Luna A, Rajapakse VN, Sousa FG, Gao J, **Schultz N**, Varma S, Reinhold W, Sander C, Pommier Y. **rcellminer: exploring molecular profiles and drug response of the NCI-60 cell lines in R.** Bioinformatics. 2015 Dec 3. pii: btv701.
91. Zhang C, Cleveland K, Schnoll-Sussman F, McClure B, Bigg M, Thakkar P, **Schultz N**, Shah MA, Betel D. **Identification of low abundance microbiome in clinical samples using whole genome sequencing.** Genome Biol. 2015 Nov 27;16:265.
90. Gauthier NP, Reznik E, Gao J, Sumer SO, **Schultz N**, Sander C, Miller ML. **MutationAligner: a resource of recurrent mutation hotspots in protein domains in cancer.** Nucleic Acids Res. 2015 Nov 20. pii: gkv1132.
89. The Cancer Genome Atlas Research Network\*. **The Molecular Taxonomy of Primary Prostate Cancer.** Cell. 2015 Nov 5;163(4):1011-25. \*Corresponding Author.
88. Yoon C, Cho SJ, Aksoy BA, Park DJ, **Schultz N**, Ryeom S, Yoon SS. **Chemotherapy resistance in diffuse type gastric adenocarcinoma is mediated by RhoA activation in cancer stem-like cells.** Clin Cancer Res. 2015 Oct 19. pii: clincanres.1356.2015.

87. Miller ML, Reznik E, Gauthier NP, Aksoy BA, Korkut A, Gao J, Ciriello G, **Schultz N**, Sander C. **Pan-Cancer Analysis of Mutation Hotspots in Protein Domains**. *Cell Syst*. 2015 Sep 23;1(3):197-209.
86. Sfakianos JP, Cha EK, Iyer G, Scott SN, Zabor EC, Shah RH, Ren Q, Bagrodia A, Kim PH, Hakimi AA, Ostrovnya I, Ramirez R, Hanrahan AJ, Desai NB, Sun A, Pinciroli P, Rosenberg JE, Dalbagni G, **Schultz N**, Bajorin DF, Reuter VE, Berger MF, Bochner BH, Al-Ahmadie HA, Solit DB, Coleman JA. **Genomic Characterization of Upper Tract Urothelial Carcinoma**. *Eur Urol*. 2015 Aug 13. pii: S0302-2838(15)00698-3.
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84. The Cancer Genome Atlas Research Network. **Genomic Classification of Cutaneous Melanoma**. *Cell*. 2015 Jun 18;161(7):1681-96.
83. Sirintrapun SJ, Zehir A, Syed A, Gao J, **Schultz N**, Cheng DT. **Translational Bioinformatics and Clinical Research (Biomedical) Informatics**. *Surg Pathol Clin*. 2015 Jun;8(2):269-88.
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80. Rao TD, Tian H, Ma X, Yan X, Thapi S, **Schultz N**, Rosales N, Monette S, Wang A, Hyman DM, Levine DA, Solit D, Spriggs DR. **Expression of the Carboxy-Terminal Portion of MUC16/CA125 Induces Transformation and Tumor Invasion**. *PLoS One*. 2015 May 12;10(5):e0126633.
79. Babur Ö, Gönen M, Aksoy BA, **Schultz N**, Ciriello G, Sander C, Demir E. **Systematic identification of cancer driving signaling pathways based on mutual exclusivity of genomic alterations**. *Genome Biol*. 2015 Feb 26;16:45.
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- Bilguvar K, Yasuno K, Vortmeyer A, Huttner AJ, Sander C, Günel M. **Somatic POLE mutations cause an ultramutated giant cell high-grade glioma subtype with better prognosis.** Neuro Oncol. 2015 Mar 3. pii: nov027.
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68. Cryan JB, Haidar S, Ramkissoon LA, Bi WL, Knoff DS, **Schultz N**, Abedalthagafi M, Brown L, Wen PY, Reardon DA, Dunn IF, Folkerth RD, Santagata S, Lindeman NI, Ligon AH, Beroukhi R, Hornick JL, Alexander BM, Ligon KL, Ramkissoon SH. **Clinical multiplexed exome sequencing distinguishes adult oligodendroglial neoplasms from astrocytic and mixed lineage gliomas.** Oncotarget. 2014 Sep 30;5(18):8083-92.
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64. Babur Ö, Dogrusoz U, Çakır M, Aksoy BA, **Schultz N**, Sander C, Demir E. **Integrating biological pathways and genomic profiles with ChiBE 2**. BMC Genomics. 2014 Aug 3;15:642.
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56. Jelinic P, Mueller JJ, Olvera N, Dao F, Scott SN, Shah R, Gao J, **Schultz N**, Gonen M, Soslow RA, Berger MF, Levine DA. **Recurrent SMARCA4 mutations in small cell carcinoma of the ovary**. Nat Genet. 2014 May;46(5):424-6.
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\*indicates equal contribution

## Invited Talks

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- April 17, 2016. AACR Annual Meeting, Methods Workshop: Bioinformatics in Personalized Cancer Genomics: From Sequencing Data to Clinical Actionability. New Orleans, LA. "Making complex genomics data accessible to clinicians and researchers through the cBioPortal for Cancer Genomics and other tools".

- March 4, 2016. Cutting Edge Concepts in Molecular Pharmacology. Berlin, Germany. “Molecular oncology and its application in personalized cancer therapy.”
- December 3, 2015. 16<sup>th</sup> Annual Meeting of the Society of Urologic Oncology. Washington, DC. “Accessing Genomic Data in Prostate Cancer and Overview of TCGA Subtypes.”
- November 11, 2015. 2015 AACR Translational Cancer Research for Basic Scientists Workshop. Boston, MA. “The cBioPortal for Cancer Genomics.”
- October 28, 2015. EMBL-EBI Industry programme workshop: Translating NGS data into clinical practice. Waltham, MA. “The cBioPortal for Cancer Genomics.”
- October 16, 2015. Molecular Oncology for the Clinical Oncologist: Defining the Actionable Genome. “Visualization and Annotation of Genomic Alterations in Tumor Samples”. New York, NY.
- October 13, 2015. PISTOIA Alliance US Conference 2015. Philadelphia, PA. “Visualization and Analysis of Cancer Genomics Data”.
- June 3, 2015. Open Source Technologies for Precision Medicine. London, UK. “The cBioPortal for genomics data visualization in a clinical setting.”
- May 29, 2015. ASCO Annual Meeting, Session: Molecular Oncology Tumor Board. Chicago, IL. “Bioinformatics: Understanding clinical reports, using portals, sharing of data.”
- April 21, 2015. AACR Annual Meeting, Session: Computational Approaches to Cancer Target and Drug Discovery. Philadelphia, PA. “Exploring The Cancer Genome Atlas for Cancer Subtypes and Targetable Alterations.”
- March 18, 2015. Tucson Symposium 2015. “The Use of cBioPortal in Precision Oncology.”
- January 16, 2015. Brigham and Women's Hospital Department of Pathology Surgical Pathology Update Series. Boston, MA. “The Molecular Landscape of Primary Prostate Cancer.”
- October 28, 2014. NCI Center for Cancer Research. Bethesda, MD. “Introduction to the cBioPortal for Cancer Genomics.”
- October 24, 2014. 21<sup>st</sup> Annual Prostate Cancer Foundation Retreat. Carlsbad, CA. “The cBioPortal for Cancer Genomics and its Use in Precision Medicine.”
- September 12, 2014. Simons Foundation Biotech Symposium. Complex Data Visualization: Approach and Application. New York, NY. “The cBioPortal for Cancer Genomics.”
- August 21, 2014. Institute for Theoretical Biology Berlin Seminar Series. Berlin, Germany. “The cBioPortal for Cancer Genomics.”
- April 7, 2014. AACR Annual Meeting, Session: New SU2C Dream Teams: Patient Benefit Through Targeted Therapeutics and Immunotherapy. San Diego, CA. “Precision Therapy of Advanced Prostate Cancer.”
- April 5, 2014. AACR Annual Meeting, Session: Using Data from the Cancer Genome Atlas. San Diego, CA. “The cBioPortal for Cancer Genomics.”
- January 27, 2014. Cedars Sinai Medical Center, Women's Cancer Program Seminar Series. Los Angeles, CA. “Evaluating cell lines as tumor models by comparison of genomic profiles.”
- December 18, 2013. Weill Cornell Medical College, Institute for Computational Biomedicine (ICB) Seminar Series. New York, NY. “The genomic landscape of cancer: From The Cancer Genome Atlas to personalized therapy.”
- November 15, 2013. EMBL-EBI Industry programme workshop on Oncogenomics. Pearl River, NY. “The cBioPortal for Cancer Genomics.”
- September 18, 2013. Advances in Ovarian Cancer Research: From Concept to Clinic. Miami, FL. “Cell lines as ovarian cancer models: Insights from molecular profiles in TCGA and CCLE.”
- July 23, 2013. 21<sup>st</sup> Annual International Conference on Intelligent Systems for Molecular Biology (ISMB). Berlin, Germany. “The cBioPortal for Cancer Genomics.”
- May 14, 2013. Fourth Annual Ovarian Cancer Symposium: Prevention and Early Detection of Ovarian Cancer. New York, NY. “Using Ovarian Cancer Cell Lines as Genomic Models.”

- April 8, 2013. AACR Annual Meeting, Session: The Cancer Genome Atlas (TCGA) – A Rapidly Expanding Community Resource. Washington, DC. “Examples of Integrated Analysis and Tools for Interacting and Understanding TCGA Data.”
- March 14, 2013. EMBL-EBI Industry programme workshop on Oncogenomics. Cambridge UK. “The cBioPortal for Cancer Genomics.”
- March 4, 2013. NCI Center for Cancer Research. Bethesda, MD. “Introduction to the cBioPortal for Cancer Genomics.”
- November 17, 2011. The Cancer Genome Atlas First Annual Scientific Symposium. National Harbor, MD. “The cBio Cancer Genomics Portal – Hands-on workshop.”
- June 24, 2011. Keystone Symposium: Changing Landscape of the Cancer Genome. Boston, MA. “The cBio Cancer Genomics Portal.”
- April 3, 2011. AACR Annual Meeting, TCGA-sponsored session. Orlando, FL. “The cBio Cancer Genomics Portal.”
- April 2, 2011. AACR Annual Meeting, Session: Harvesting the yield from the TCGA. Orlando, FL. “TCGA Data Access and Analytical Opportunities.”
- March 8, 2011. New York Obstetrical Society. New York, NY. “Decoding the Cancer Genome: Pathway Alterations in Ovarian Cancer.”
- August 18, 2010. Institute for Medical Systems Biology at the Max-Delbrück-Center for Molecular Medicine. Berlin, Germany. “Decoding the Cancer Genome: Pathway Alterations in Brain, Ovarian, and Prostate Cancer.”
- July 9, 2007. Leibniz-Institut für Molekulare Pharmakologie (FMP). Berlin, Germany. “Prevalence of off-target effects in a high-throughput siRNA screen for components of the TGF-beta pathway.”