# P. Ryan Potts

Department of Cell and Molecular Biology
St. Jude Children's Research Hospital
262 Danny Thomas Place, MS340
Memphis, TN 38105

Ryan.Potts@stjude.org
Phone: (901) 595-8791
Fax: (901) 595-8025

## PROFESSIONAL APPOINTMENTS

10/2016 – present **Adjunct Associate Professor**
Department of Microbiology, Immunology, and Biochemistry
University of Tennessee Health Sciences Center

01/2016 – present **Associate Member**
Department of Cell and Molecular Biology
St. Jude Children's Research Hospital

09/2011 – 12/2015 **Assistant Professor**
Department of Physiology
Department of Pharmacology
Department of Biochemistry
Simmons Comprehensive Cancer Center
Green Center for Reproductive Biology
UT Southwestern Medical Center

## TRAINING

01/2008 – 09/2011 UT Southwestern Medical Center – Biochemistry
**Sara and Frank McKnight Independent Postdoctoral Fellowship**
*Defining the biochemical and cellular functions of the MAGE protein family*

08/2003 – 12/2007 UT Southwestern Medical Center – Pharmacology
**Ph.D. Student – Hongtao Yu Laboratory**
*Functional analysis of the human SMC5/6 complex in homologous recombination and telomere maintenance*

01/2001 – 08/2003 UNC Chapel Hill – Cell Biology
**Research Technician – Mohanish Deshmukh Laboratory**
*Investigating caspase regulation in neuronal apoptosis*

## EDUCATION

08/2003 – 12/2007 UT Southwestern Medical Center
**Doctor of Philosophy**
*Department of Basic Science – Cell Regulation Program*

08/1997 – 12/2000 University of North Carolina at Chapel Hill
**Bachelor of Science Degree**
*B.S. Biology, minor Chemistry*

## AWARDS & HONORS

2017 USP7 Foundation Scientific Advisory Board
2017 American Cancer Society Research Scholar Award
2013 American Cancer Society New Investigator Award/UTSW
2012 Department of Defense Peer Reviewed Cancer Research Program Discovery Award
2011 CPRIT Scholar in Cancer Research Award
2011 Michael L. Rosenberg Scholar in Medical Research
2008 Sara and Frank McKnight Independent Postdoctoral Fellowship Award
2007 Oral Presentation Award at AACR Telomere Meeting
2007 American Association for Cancer Research Scholar-in-Training Award
2007 UT Southwestern Dean's Discretionary Award

2007 Nominata Award – Highest honor bestowed by UT Southwestern to a graduate student
2007 Altrusa International, Martia Leita Pharmacology Award
2007 ASBMB Travel Award
2005 Keystone Symposia on Genomic Instability and Repair Travel Award
2005 Sigma Xi Abstract Award

## PUBLICATIONS

Lionnard, L., Duc, P., Brennan, M.S., Kueh, A.J., Pal, M., Guardia, F., Mojsa, B., Damiano, M.A., Mora, S., Lassot, I., Ravichandran, R., Cochet, C., Aouacheria, A., **Potts, P.R.**, Herold, M.J., Desagher, S., Kucharczak, J. (2018) TRIM17 and TRIM28 antagonistically regulate the ubiquitination and anti-apoptotic activity of BCL2A1. Cell Death Differ. Jul 24.

Shukla, S.A., Bachireddy, P., Schilling, B., Galonska, C., Zhan, Q., Bango, C., Langer, R., Lee, P.C., Gusenleitner, D., Keskin, D.B., Babadi, M., Mohammad, A., Gnirke, A., Clement, K., Cartun, Z.J., Van Allen, E.M., Miao, D., Huang, Y., Snyder, A., Merghoub, T., Wolchok, J.D., Garraway, L.A., Meissner, A., Weber, J.S., Hacohen, N., Neuberg, D., **Potts, P.R.**, Murphy, G.F., Lian, C.G., Schadendorf, D., Hodi, F.S., Wu, C.J. (2018) Cancer-Germline Antigen Expression Discriminates Clinical Outcome to CTLA-4 Blockade. Cell. *173*, 624-33.
*Featured in Cancer Discovery Research Watch*

Weon, J.L., Yang, S.W., and **Potts, P.R.** (2018) Cytosolic iron-sulfur assembly is evolutionarily tuned by a cancer-amplified ubiquitin ligase. Mol. Cell. *69*,113-25.
*Featured in: Nature Chemical Biology Research Highlights*

Tomimatsu, N., Mukherjee, B., Harris, J.L., Boffo, F.L., Hardebeck, M., **Potts, P.R.**, Khanna, K.K., and Burma, S. (2017) DNA damage-induced Degradation of EXO1 Limits DNA End Resection to Ensure Accurate DNA Repair. J. Biol. Chem. *292*, 10779-90.

Fon Tacer, K. and **Potts, P.R.** (2017) Cellular and disease functions of the Prader-Willi Syndrome gene MAGEL2. Biochemical Journal. *474*, 2177-90.

Lee, A.K. and **Potts, P.R.** (2017) A Comprehensive Guide to the MAGE Family of Ubiquitin Ligases. J. Mol. Biol. *429*, 1114-1142.

Jin, X., Pan, Y., Wang, L., Zhang, L., Ravichandran, R., **Potts, P.R.**, Jiang, J., Wu, H., Huang, H. (2017) MAGE-TRIM28 complex promotes the Warburg effect and hepatocellular carcinoma progression by targeting FBP1 for degradation. Oncogenesis. *6*, e312.

Koirala, S. **Potts, P.R.** (2016) An acetyldegron triggers CRBN to take down the "Q". Mol. Cell. *61*, 795-6.

Hao, Y.H., Fountain Jr., M.D., Fon Tacer, K., Bi, W., Kang, S.L., Patel, A., Rosenfeld, J.A., Le Caignec, C., Isidor, B., Krantz, I.D., Noon, S.E., Pfotenhauer, J.P., Morgan, T.M., Moran, R., Pedersen, R.C., Saenz, M.S., Schaaf, C.P., **Potts, P.R.** (2015) USP7 haploinsufficiency causes a neurodevelopmental disorder due to defects in endosomal trafficking. Mol. Cell. *59*, 956-69.

Trošt N., Peña-Llopis S., Koirala S., Stojan J., **Potts P.R.**, Tacer K.F., Martinez E.D.. (2015) γKlotho is a novel marker and cell survival factor in a subset of triple negative breast cancers. Oncotarget. *7*, 2611-28.

Weon, J.L., **Potts, P.R.** (2015) The MAGE protein family and cancer. Curr. Opin. Cell Biol. *37*, 1-8.

Pineda, C.T., **Potts, P.R.** (2015) Oncogenic MAGEA-TRIM28 ubiquitin ligase downregulates autophagy by ubiquitinating and degrading AMPK in cancer. Autophagy. *11*, 844-6.

Pineda, C.T., Ramanathan, S., Fon Tacer, K., Weon, J.L., Potts, M.B., Ou, Y.H., White, M.A., **Potts, P.R.** (2015) Degradation of AMPK by a Cancer-Specific Ubiquitin Ligase. Cell. *160*, 715-28.
*Featured in: Science Signaling Editor's Choice and Current Biology Dispatch Highlight*

Hao, Y.H. and **Potts, P.R.** (2014). Ubiquitin puts actin in its place. Molecular Cell. *54*, 544-6.

Hao, Y.H., Doyle, J.M., Ramanathan, S., Gomez, T.S., Jia, D., Xu, M., Chen, Z.J., Billadeau, D.D., Rosen, M.K., **Potts, P.R.** (2013). Regulation of Actin Polymerization and Retrograde Transport by Ubiquitination. Cell. *152*, 1051-1064.
*Featured in: Faculty of 1000*

Wu, N., Kong, X., Ji, Z., Zeng, W., **Potts, P.R.**, Yokomori, K., Yu, H.. (2012). SCC1 sumoylation by MMS21 promotes sister chromatid recombination through counteracting Wapl. Genes Dev. *26*, 1473-85.

Ellis, B., **Potts, P.R.**, Porteus, M.H. (2011). Creating higher titer lentivirus using caffeine. Human Gene Therapy. *22*, 93-100.

Doyle, J.M., Gao, J., Wang, J., Yang, M. and **Potts, P.R.** (2010). MAGE-RING complexes comprise a family of E3 ubiquitin ligases. Molecular Cell. *39*, 963-974.
*Featured in: Molecular Cell News and Views, Faculty of 1000, and 2010 Science Signaling Breakthrough of the Year*

**Potts, P.R.** (2009). The Yin and Yang of the MMS21-SMC5/6 SUMO ligase complex in homologous recombination. DNA Repair. *8*, 499-506.

**Potts, P.R.** and Yu, H. (2008). Chromosome Formation. Wiley Ency. Chem. Biol. DOI:10.1002/9780470048672.wecb650

**Potts, P.R.** and Yu, H. (2007). The SMC5/6 Complex Maintains Telomere Length in ALT Cancer Cells through Sumoylation of Telomere-Binding Proteins. Nat. Struct. Mol. Biol. *14*, 581-590.
*Featured in NSMB News and Views and as the cover article*

**Potts, P.R.**, Porteus, M.H., and Yu, H. (2006). Human SMC5/6 complex promotes sister chromatid homologous recombination by recruiting the SMC1/3 cohesin complex to double-strand breaks. EMBO J. *25*, 3377-3388.

**Potts, P.R.** and Yu, H. (2005). Human MMS21/NSE2 is a SUMO ligase required for DNA repair. Mol. Cell. Biol. *25*, 7021-7032.

Wright, K.M., Linhoff, M.W., **Potts, P.R.**, and Deshmukh, M. (2004). Decreased apoptosome activity with neuronal differentiation sets the threshold for strict IAP regulation of apoptosis. J. Cell Biol. *167*, 303-313.

Olteanu, A., Patel, C.N., Dedmon, M.M., Kennedy, S., Linhoff, M.W., Minder, C.M., **Potts, P.R.**, Deshmukh, M., and Pielak, G.J. (2003). Stability and apoptotic activity of recombinant human cytochrome *c*. Biochem. Biophys. Res. Commun. *312*, 733-740.

**Potts, P.R.**, Singh, S., Knezek, M., Thompson, C.B., and Deshmukh, M. (2003). Critical function of endogenous XIAP in regulating caspase activation during sympathetic neuronal apoptosis. J. Cell Biol. *163*, 789-799.
*Featured in: JCB News Section and in Faculty of 1000*

## INVITED SPEAKER

**Meeting and Conferences**

2018 *FPWR Annual Conference
*CHI Discovery on Target – Autophagy Symposium
FASEB conference – "Ubiquitin and Cellular Regulation"
39th Steenbach Symposium – "Iron-Sulfur Proteins"
GTC 8th Ubiquitin Research & Drug Discovery Conference
Keystone Symposia – "Ubiquitin Signaling"
2017 GTC 7th Ubiquitin Research & Drug Discovery Conference
USP7 Disease Foundation Meeting
FPWR Annual Conference
2016 GTC 6th Ubiquitin Research & Drug Discovery Conference
FASEB conference – "Ubiquitin and Cellular Regulation"
CHI Target Identification Ubiquitination Conference
AMPK 2016 – "New Mechanisms and Physiology", Xiamen, China
2015 Cold Spring Harbor Laboratory Meeting – "The Ubiquitin Family"
2014 Keystone Symposia – "The Ubiquitin System"
2013 Cold Spring Harbor Laboratory Meeting – "The Ubiquitin Family"
2012 UT Southwestern Cell Regulation Graduate Program Retreat, *Keynote Speaker*
FASEB conference – "Ubiquitin and Cellular Regulation"
2011 OMICS Meeting – "Cancer science"
2010 MD Anderson Conference – "Ubiquitin, SUMO, and Ubl Proteins"
2008 MD Anderson Conference – "Ubiquitin, SUMO, and Ubl Proteins"
2007 AACR – "The Role of Telomeres and Telomerase in Cancer"
ASBMB Annual Meeting, Washington DC
Keystone Symposia – "Genome Instability"

**University and Industry Seminars**

2018 *University of Kentucky, Department of Biochemistry

2017 St. Jude Biomedical Research Forum
Salk Institute
UT Southwestern, Green Center for Systems Biology
Amgen Inflammation/Oncology Seminar Series
Vanderbilt University, Dept. of Cell and Developmental Biology

2016 Baylor College of Medicine, Dept. of Cellular and Molecular Biology
University of Tsukuba, Japan, International Institute for Integrative Sleep Medicine (WPI-IIIS)

SiChuan University China, Department of Cell Biology

2015 Moffitt Cancer Center
St. Jude, Department of Cell and Molecular Biology
Mayo Clinic, Department of Biochemistry and Cell Biology
University North Carolina at Chapel Hill, Lineberger Cancer Center
Colorado State University – Department of Biochemistry and Molecular Biology

2013 Baylor College of Medicine, Department of Genetics

2011 Tsinghua University – Beijing, China, Frontiers in Biological Sciences Seminar Series
UT Southwestern, Department of Pharmacology
University of Chicago, Department of Cancer Biology
Mass General Hospital, Department of Pathology
University of Iowa, Department of Pharmacology
University of Texas - Austin, Department of Molecular Genetics and Microbiology
University of Utah, Department of Biochemistry
Vanderbilt University, Department of Biochemistry

2010 UT Southwestern, Department of Cell Biology
University of Arizona, Department of Biochemistry
University of Kanas, Department of Cell Biology
National Cancer Institute – Bethesda, MD
University of Pennsylvania, Department of Cancer Biology
UT Southwestern, Department of Physiology
University of Case Western, Department of Pharmacology

*upcoming

## TRAINEES

**Current**

2018 – present Mariah Brner – Research Technician
2018 – present Rebecca Florke – Graduate Student (Ph.D.)
2017 – present Helen Chen – Postdoctoral Fellow
2017 – present Xin Huang – Postdoctoral Fellow
2017 – present Jonathon Klein – Research Technician
2017 – present Xu Yang – Postdoctoral Fellow
2016 – present Seung Wook Yang – Postdoctoral Fellow
2015 – present Ramya Ravichandran – Research Technician
2014 – present Anna Lee – Graduate Student (Ph.D.)
2013 – present Sajjan Koirala, Ph.D. – Postdoctoral Fellow
2012 – present Klementina Fon Tacer, D.V.M., Ph.D. – Instructor

**Past**

2015 – 2017 Rebecca Collins – Postdoctoral Fellow
*Assistant Professor, UT Southwestern*
2012 – 2017 Jenny Weon – Graduate Student (M.D./Ph.D.)
*Currently finishing M.D. training at UT Southwestern*
2016 Emily Binshtok – Undergraduate Student
*Currently M.D./Ph.D. student at UT Southwestern*
2012 – 2015 Saumya Ramanathan, Ph.D. – Postdoctoral Fellow
*Currently postdoc at UT Southwestern*
2012 – 2015 Melissa Brulotte – Graduate Student (Ph.D.)
*Currently Instructor at Western Governors University*
2011 – 2015 Yi-Heng Hao, Ph.D. – Research Scientist
*Currently research scientist at UT Southwestern*
2011 – 2015 Carlos Pineda – Graduate Student (Ph.D.)

*Currently postdoctoral fellow at Roche (Ventana)*

2013 – 2013 Anna Brown – Undergraduate Student
*Currently undergraduate student at Univ. Texas - Austin*

2012 – 2015 Marhiah Montoya – Research Technician
*Currently graduate student at Univ. Rochester*

2013 – 2015 Natalie Pounds, M.D. – Clinical Fellow (Pediatrics Hematology Oncology)
*Currently in private practice*

2013 – 2014 Juan Gabe Garcia – Research Technician
*Currently medical student at Univ. Texas – San Antonio*

2013 Mercedes Quintana – Undergraduate Student
*Currently graduate student at UT Southwestern*

2011 – 2012 Hyeran Choi – Undergraduate Student
*Currently graduate student at Texas A&M*

2010 Elizabeth Kleinschmidt – Undergraduate Student
*Currently graduate student at UCSD*

2010 Emily Hall – Undergraduate Student
*Currently graduate student*

2009 – 2010 Travis Miller – Undergraduate Student and Res. Technician
*Currently resident in the plastic and reconstructive surgery program at Stanford University*

2008 – 2010 Jennifer Doyle – Research Technician
*Currently working in private sector*

## TEACHING & SERVICE

**Teaching**

St. Jude Children's Research Hospital

2018 SJCRH First-year course – Research Methods
*Course Director*

2017 - 2018 SJCRH First-year course – Proteins Module
*"Lecturer: Protein Degradation"*

2017 - 2018 SJCRH First-year course – Cells Module
*"Lecturer: Cell Cycle"*

UT Southwestern Medical Center

2015 UTSW First-year Core Course, Division of Basic Sciences
*"Cells Thread Discussion Coordinator"*

2013 – 2015 UTSW First-year Core Course, Division of Basic Sciences
*"Facilitator: Cells Thread Paper Discussion"*

2012 – 2015 UTSW First-year Core Course, Division of Basic Sciences
*"Facilitator: Genes Thread Paper Discussion"*

2012 – 2015 UTSW First-year Core Course, Division of Basic Sciences
*"Lecturer: DNA replication and chromosome biology"*
*"Lecturer: Ubiquitination and Protein Degradation"*

2012 – 2015 UTSW Cancer Biology II, Cancer Biology Graduate Program
*"Lecturer: Ubiquitin family of proteins in cancer"*

2010 – 2015 UTSW Signal Transduction II, Cell Regulation Graduate Program *"Lecturer: Ubiquitin family of proteins in cellular signaling"*

2008 – 2015 UTSW Current topics in Pharmacology, Cell Regulation Graduate Program, *Facilitator*

**Thesis Committees**

St. Jude Children's Research Hospital

2017 – present Patricia Bianchino – PI: Stacey Ogden, Ph.D.

UT Southwestern Medical Center

| | |
|---|---|
| 2014 – present | Yu-san Yang – PI: Ben Tu, Ph.D. |
| 2014 – 2016 | I-Hui Wu – PI: Phil Thomas, Ph.D. |
| 2014 – 2016 | Yi 'Julia' Zhu – PI: Gang Yu, Ph.D. |
| 2014 – 2016 | Ho Yee Joyce Fung – PI: Yuh Min Chook, Ph.D. |
| 2014 – 2016 | William Peeples – PI: Michael Rosen, Ph.D. |
| 2013 – 2016 | Souparno Bhattacharya – PI: Asaithamby Aroumougame, Ph.D. |
| 2012 – 2016 | Ge Zhang – PI: Hongtao Yu, Ph.D. |
| 2011 – 2016 | Joshua Pierce – PI: James Amatruda, Ph.D. |

**Institutional Committees**

St. Jude Children's Research Hospital

| | |
|---|---|
| 2018 – present | SJRCH Graduate Council |
| 2017 – present | Animal Resources Center Advisory Committee |
| 2017 – present | New research building committee |
| 2016 - present | SJCRH Education Program Committee |
| 2016 - 2017 | SJCRH Dept Cell and Molecular Biology bioinformatics search committee member |
| 2016 | SJCRH Gene Editing Core search committee member |

UT Southwestern Medical Center

| | |
|---|---|
| 2015 | Southwestern Academy of Teachers Educational Symposium |
| 2014 – 2015 | UTSW Cell Regulation Program Steering Committee |
| 2012 – 2015 | UTSW Division of Basic Sciences (DBS) graduate student admissions committee, *Cell Regulation Graduate Program Representative* |
| 2012, 2014 | UTSW Academic Career Panel |

**Grant Reviewer**

American Heart Association – Basic Cellular Genetics Study Section
Breast Cancer Campaign
Breast Cancer Now
Dutch Cancer Society
National Science Foundation (NSF)
World Cancer Research organization (formerly AICR)

**Journal Reviewer**

Appointed

Elife - Early Career Reviewer (2016 – present)
Journal of Biological Chemistry - Assistant Editor (2017-2022)

Adhoc

Biochemical Journal
Biochemistry
Cancer Research
EMBO Journal
EMBO Reports
FEBS
International Journal of Cancer
Journal of Biological Chemistry
Journal of Cell Biology
Journal of Clinical Investigation
Journal of Molecular Biology
Journal of Molecular Evolution
Molecular and Cellular Biology
Molecular Biology of the Cell
Molecular Cancer Therapeutics
Molecular Cell
Nucleic Acids Research
Nature Communications
Nature Reviews Molecular Biology
Neuroscience and Behavioral Reviews
Oncogene
PLOS Genetics
PLOS One
Scientific Reports
Structure
Vaccine