

# Jennifer E. Totonchy, PhD

## Curriculum Vitae

Chapman University School of Pharmacy  
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### EDUCATION

- 2010 Ph.D. – Molecular Microbiology and Immunology  
Oregon Health and Science University, Portland, Oregon, USA
- 2002 B.A. – Integrated Science and Molecular Cell Biology  
Northwestern University, Chicago, Illinois, USA

### PROFESSIONAL APPOINTMENTS

- 2016 Assistant Professor of Immunology and Immunotherapeutics  
Chapman University School of Pharmacy  
Biomedical and Pharmaceutical Sciences
- 2012-2016 Postdoctoral Fellow – Laboratory of Ethel Cesarman, MD, PhD  
Weill Cornell Medicine  
Pathology and Laboratory Medicine
- 2010-2012 Postdoctoral Fellow – Laboratory of Ashlee V. Moses, PhD  
Oregon Health and Science University  
Vaccine and Gene Therapy Institute

### PUBLICATIONS

*Please Note: Previous name Jennifer E. Vomaska*

- 2021 El-Sayed N, Jureka AS, Edwards MR, Williams CG, Keiser PT, Davey RA, Totonchy J, Tiwari RK, Parang K, and Christopher F. Basler, Synthesis and Antiviral Activity of Fatty Acyl Conjugates of Remdesivir Against Severe Acute Respiratory Syndrome Coronavirus 2 and Ebola Virus, European Journal of Medicinal Chemistry. Submitted.
- Qadri M, Jay GD, Zhang LX, Schmidt TA, Totonchy J, Elsaid KA. Proteoglycan-4 is an Essential Regulator of Synovial Macrophage Polarization and Inflammatory Macrophage Joint Infiltration. Arthritis Research and Therapy. Submitted.

Shamloo K, Weng J, Ross C, Lee J, Totonchy J, Sharma A. Disease (GVHD)-associated conjunctival fibrosis. *Investigative Ophthalmology and Visual Science*. Resubmitted with Revisions.

Palmerin N, Aalam F, Nabiee R, Muniraju M, Ogembo JG, Totonchy J. Suppression of DC-SIGN and gH Reveals Complex, Lineage-Specific Mechanisms for KSHV Entry in Primary B lymphocytes. *Viruses*. **2021**, *13*(8), 1512; <https://doi.org/10.3390/v13081512>

Montazeri Alibadi H, Totonchy J, Mahdipoor P, Parang K, Uludag H. Suppression of Human Coronavirus 229E Infection in Lung Fibroblast Cells via RNA Interference. *Frontiers in nanotechnology*. 2021 April; 3:34. doi: 10.3389/fnano.2021.670543.

WT1 tumor antigen is overexpressed in Kaposi sarcoma and is regulated by KSHV vFLIP Morales A, Genovese C, Bott M, Alvarez J, Mun SS, Totonchy J, ...Krown, S.E., Cesarman, E. 2021, Repository : medRxiv. Preprint.

Nam YW, Kong D, Wang D, Orfali R, Sherpa RT, Totonchy J, Nauli SM, Zhang M. [Differential modulation of SK channel subtypes by phosphorylation](#). *Cell Calcium*. 2021 Mar;94:102346. doi: 10.1016/j.ceca.2020.102346. Epub 2021 Jan 6. PubMed PMID: 33422768.

Li Y, Duche A, Sayer MR, Roosan D, Khalafalla FG, Ostrom RS, Totonchy J, Roosan MR. [SARS-CoV-2 early infection signature identified potential key infection mechanisms and drug targets](#). *BMC Genomics*. 2021 Feb 18;22(1):125. doi: 10.1186/s12864-021-07433-4. PubMed PMID: 33602138; PubMed Central PMCID: PMC7889713.

2020

Nabiee R, Syed B, Ramirez Castano J, Lalani R, Totonchy JE. [An Update of the Virion Proteome of Kaposi Sarcoma-Associated Herpesvirus](#). *Viruses*. 2020 Dec 2;12(12). doi: 10.3390/v12121382. PubMed PMID: 33276600; PubMed Central PMCID: PMC7761624.

Aalam F, Totonchy J. [Molecular Virology of KSHV in the Lymphocyte Compartment- Insights From Patient Samples and De Novo Infection Models](#). *Front Cell Infect Microbiol*. 2020;10:607663. doi: 10.3389/fcimb.2020.607663. eCollection 2020. Review. PubMed PMID: 33344267; PubMed Central PMCID: PMC7746649.

Alomari N, Totonchy J. [Cytokine-Targeted Therapeutics for KSHV-Associated Disease](#). *Viruses*. 2020 Sep 28;12(10). doi: 10.3390/v12101097. Review. PubMed PMID: 32998419; PubMed Central PMCID: PMC7600567.

Aalam F, Nabiee R, Castano JR, Totonchy J. [Analysis of KSHV B lymphocyte lineage tropism in human tonsil reveals efficient infection of CD138+ plasma cells](#). *PLoS*

- Pathog. 2020 Oct;16(10):e1008968. doi: 10.1371/journal.ppat.1008968. eCollection 2020 Oct. PubMed PMID: 33075105; PubMed Central PMCID: PMC7595638.
- 2019 Muniraju M, Mutsvunguma LZ, Foley J, Escalante GM, Rodriguez E, Nabiee R, Totonchy J, Mulama DH, Nyagol J, Wussow F, Barasa AK, Brehm M, Ogembo JG. Kaposi Sarcoma-Associated Herpesvirus Glycoprotein H Is Indispensable for Infection of Epithelial, Endothelial, and Fibroblast Cell Types. *J Virol*. 2019 Aug 15;93(16). doi: 10.1128/JVI.00630-19. Print 2019 Aug 15. PubMed PMID: 31142670.
- Mulama DH, Mutsvunguma LZ, Totonchy J, Ye P, Foley J, Escalante GM, Rodriguez E, Nabiee R, Muniraju M, Wussow F, Barasa AK, Ogembo JG. A multivalent Kaposi sarcoma-associated herpesvirus-like particle vaccine capable of eliciting high titers of neutralizing antibodies in immunized rabbits. *Vaccine*. 2019 Jul 9;37(30):4184-4194. doi: 10.1016/j.vaccine.2019.04.071. Epub 2019 Jun 11. PubMed PMID: 31201053.
- Broeckel R, Sarkar S, May NA, Totonchy J, Kreklywich CN, Smith P, Graves L, DeFilippis VR, Heise MT, Morrison TE, Moorman N, Streblow DN. Src Family Kinase Inhibitors Block Translation of Alphavirus Subgenomic mRNAs. *Antimicrob Agents Chemother*. 2019 Apr;63(4). doi: 10.1128/AAC.02325-18. Print 2019 Apr. PubMed PMID: 30917980; PubMed Central PMCID: PMC6496153.
- 2018 Totonchy J, Osborn JM, Chadburn A, Nabiee R, Argueta L, Mikita G, Cesarman E. KSHV induces immunoglobulin rearrangements in mature B lymphocytes. *PLoS Pathogens*. 2018 Apr;14(4):e1006967. PubMed PMID: 29659614; PubMed Central PMCID: PMC5919685
- 2017 Totonchy J. Extrafollicular Activities: perspectives on HIV infection, germinal center-independent maturation pathways and KSHV-mediated lymphoproliferation. *Current Opinion in Virology*. 2017 Aug 2; 26:69-73. doi: 10.1016/j.coviro.2017.07.016. PMID: 28779693
- Giulino-Roth L, van Besien HJ, Dalton T, Totonchy JE, Rodina A, Taldone T, Bolaender A, Erkjument-Bromage H, Sadek J, Chadburn A, Barth MJ, Dela Cruz FS, Rainey A, Kung AL, Chiosis G, Cesarman E. Inhibition of Hsp90 Suppresses PI3K/AKT/mTOR Signaling and has Antitumor Activity in Burkitt Lymphoma. *Mol Cancer Ther*. 2017 Jun 15. PMID: 28619753
- Nayar U, Sadek J, Reichel J, Hernandez-Hopkins D, Akar G, Barelli PJ, Sahai MA, Zhou H, Totonchy J, Jayabalan D, Niesvizky R, Guasparri I, Hassane D, Liu Y, Sei S, Shoemaker RH, Warren JD, Elemento O, Kaye KM, Cesarman E. Identification of a nucleoside analog active against adenosine kinase-expressing plasma cell malignancies. *J Clin Invest*. 2017 June 1; 127(6):2066-2080. PMID: 28504647
- 2016 Totonchy J, Cesarman E. Does persistent HIV replication explain continued lymphoma incidence in the era of effective antiretroviral therapy? *Curr Opin Virol*. 2016 Oct;20:71-77. 2016PMID: 27665065

- 2015 Botto S, Totonchy JE, Gustin JK, Moses AV. Kaposi Sarcoma Herpesvirus Induces HO-1 during De Novo Infection of Endothelial Cells via Viral miRNA-Dependent and -Independent Mechanisms. *MBio*. 2015 Jun 4;6(3):e00668. PubMed PMID: 26045540; PubMed Central PMCID: PMC4462627
- Reichel J, Chadburn A, Rubinstein PG, Giulino-Roth L, Tam W, Liu Y, Gaiolla R, Eng K, Brody J, Inghirami G, Carlo-Stella C, Santoro A, Rahal D, Totonchy J, Elemento O, Cesarman E, Roshal M. Flow sorting and exome sequencing reveal the oncogenome of primary Hodgkin and Reed-Sternberg cells. *Blood*. 2015 Feb 12;125(7):1061-72. PubMed PMID: 25488972.
- 2014 Totonchy JE, Clepper L, Phillips KG, McCarty OJT, Moses, AV. CXCR7 Expression Disrupts Endothelial Cell Homeostasis and Causes Ligand-Dependent Invasion. (2014). *Cell Adhesion and Migration*. Mar 20;8(2). PMID: 24710021
- 2013 Totonchy JE, Osborn JM, Clepper L, Moses, AV (2013). Aberrant proliferation in CXCR7+ endothelial cells via degradation of the retinoblastoma protein. (2013). *PLoS One*, Jul 23;8(7):e69828. PMCID: PMC3720914
- Messaoudi I, Vomaske J, Totonchy T, Kreklywich C, Haberthur K, Springgay L, Brien JD, Diamond M, DeFilippis V, Streblow DN. (2013). Chikungunya Virus infection results in higher and persistent viral replication in aged Rhesus Macaques due to defects in anti-viral immunity. *PLoS Neglected Tropical Diseases*, Jul 25;7(7):e2343. PMCID: PMC3723534
- 2012 Vomaske JE, Denton M, Kreklywich C, Andoh T, Osborn JM, Chen D, Messaoudi I, Orloff S, Streblow DN. Cytomegalovirus CC chemokine promotes immune cell migration. *Journal of Virology*, (2012). 86(21):11833-11844. PMCID: PMC3486311
- 2010 Vomaske JE, Varnum S, Melnychuk R, Smith P, Pasa-Tolic L, Shutthanandan JI, Streblow DN. HCMV pUS28 Initiates Pro-Migratory Signaling via Activation of Pyk2 Kinase. (2010). *Herpesviridae*, 1:2. doi10.1186/2042-4280-1-2. PMCID: PMC3050435
- 2009 Vomaske J, Nelson JA, Streblow DN. Human Cytomegalovirus US28: A Functionally Selective Chemokine Binding Receptor. (2009). *Infectious Disorders – Drug Targets*, Nov; 9(5):548-56. PMCID: PMC3496389
- Baca Jones CC, Kreklywich CN, Messaoudi I, Vomaske J, McCartney E, Orloff SL, Nelson JA, Streblow DN. Rat Cytomegalovirus Infection Depletes MHC II in Bone Marrow Derived Dendritic Cells. (2009). *Virology*, 388(1):78-90. PMCID: PMC2749604
- Vomaske J, Melnychuk RM, Smith P, Hall L, DeFilippis V, Frueh K, Smit M, Schlaepfer DD, Nelson JA, Streblow DN. Differential Ligand Binding to a Human Cytomegalovirus Chemokine Receptor. (2009). *PLoS Pathogens*, 5(2):e1000304. PMCID: PMC2637432

- 2005 Melnychuk RM, Smith P, Kreklywich CN, Ruchti F, Vomaske J, Hall L, Loh L, Nelson JA, Orloff SL, Streblow DN. Mouse Cytomegalovirus m33 is Necessary and Sufficient in Virus-Induced Vascular Smooth Muscle Cell Migration. (2005). *Journal of Virology*, 79(16):10788-95. PMID: PMC1182681
- 2003 Streblow DN, Vomaske J, Smith P, Melnychuk R, Hall L, Pancheva D, Smit M, Casarosa P, Schlaepfer DD, Nelson JA. Human Cytomegalovirus Chemokine Receptor US28-induced Smooth Muscle Cell Migration Is Mediated by Focal Adhesion Kinase and Src. (2003). *Journal of Biological Chemistry*, 278(50):50456-50465. PMID: 14506272

## AWARDS AND HONORS

- 2021 Nomination for Wang-Fradkin Assistant Professorship  
Chapman University
- Nomination for Faculty Career Champion Award  
Chapman University School of Pharmacy
- 2020 Nomination for Wang-Fradkin Assistant Professorship  
Chapman University
- 2019 CUSP Innovation in Teaching and Learning Award  
Chapman University
- Million Dollar Club  
Chapman University
- 2018 Pedagogical Innovation Award  
Chapman University
- 2010 School of Medicine Alliance Award  
Oregon Health and Science University

## GRANTS AND FELLOWSHIPS

- 2021-2026 R01 – CA264913  
National Cancer Institute – National Institutes of Health  
Defining the role of plasma cells in the establishment of KSHV infection in human tonsil.  
Role: PI
- 2021-2026 R01 – CA264911  
National Cancer Institute – National Institutes of Health  
Unmasking the roles of viral glycoproteins in oral transmission of KSHV  
Role: co-Investigator

- 2019-2024 R01 – CA239590  
National Cancer Institute – National Institutes of Health  
Identifying susceptibility factors for KSHV infection in human tonsil  
Institution: Chapman University  
Role: PI
- 2017-2020 R00 – DE024969  
National Institute of Dental and Craniofacial Research – National Institutes of Health  
Factors influencing KSHV infection and spread within the oral cavity  
Institution: Chapman University  
Role: PI
- 2015-2017 K99 – DE024969  
National Institute of Dental and Craniofacial Research – National Institutes of Health  
Factors influencing KSHV infection and spread within the oral cavity  
Institution: Weill Cornell Medicine  
Role: PI
- 2007-2009 Predoctoral Fellowship  
American Heart Association  
Contribution of Cytomegalovirus CC-chemokines to chronic rejection in solid organ  
transplant  
Institution: Oregon Health and Science University  
Role: PI

## INVITED PRESENTATIONS

- 2021 2021 Southern California Food Industry Conference  
Invited talk: Vitamin deficiency in severe COVID19 disease and supplementation as a  
disease-modifying therapeutic strategy.  
Virtual Meeting – March 5, 2021
- 2020 AIDS Malignancy Consortium Fall Meeting  
Invited talk: *Tonsil lymphocytes as a transmission model for Kaposi Sarcoma  
Herpesvirus.*  
Virtual Meeting – October 29, 2020
- 2019 44<sup>th</sup> Annual International Herpesvirus Workshop  
Symposium Talk: Exploring the B lymphocyte-specific molecular virology of KSHV in an  
*ex vivo* infection model system  
Knoxville, Tennessee USA - July 24, 2019
- 2<sup>nd</sup> Meeting of the French National Reference Center on Castleman Disease  
Invited Guest Speaker: *In vitro* model of *de novo* infection with HHV-8  
Paris, France - June 19, 2019

**PRESENTATIONS**

- 2021 International Herpesvirus Workshop  
IL-21 signaling influences the establishment of KSHV infection in B lymphocytes –  
Poster presentation  
Virtual Conference
- 23<sup>rd</sup> International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents  
Establishing the role of plasma cells in early KSHV infection in B lymphocytes – Oral  
Presentation  
Virtual Conference
- 2019 22<sup>nd</sup> International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents  
Immunological factors influencing susceptibility of tonsil-derived B lymphocytes to KSHV  
infection – Oral Presentation  
New York, NY USA
- 2018 International Conference on EBV and KSHV  
Tropism and dynamics of KSHV infection in non-lymphocyte cell types derived from  
human palatine tonsil - Poster Presentation  
Madison, WI USA
- 2017 20th International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents  
hIL-6 signaling controls maturation in KSHV-infected B lymphocytes - Oral Presentation  
Berlin, Germany
- 20th International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents  
Unique features of KSHV infection in tonsil-derived stromal cells - Oral Presentation  
Berlin, Germany
- 2016 International Herpesvirus Workshop  
KSHV Induces Revision of B cell Receptors - Oral Presentation  
Madison, Wisconsin USA
- 19th International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents  
KSHV Induces Revision of B cell Receptors - Oral Presentation  
Los Angeles, California USA
- 2015 International Conference on Malignancies in AIDS and Other Acquired  
Immunodeficiencies  
KSHV Induces Revision of B cell Receptors - Oral Presentation  
NIH Main Campus, Bethesda, Maryland, USA
- 18th International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents

A Model System for the Establishment of KSHV Latency via de novo Infection of B cell Lymphoma Cell Lines - Oral Presentation  
 Immunophenotypic Characterization of KSHV-infected Primary Tonsil Lymphocytes - Oral Presentation  
 Hollywood, Florida, USA

- 2013 16th International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents  
 KSHV vMIP-II and Multiple NFkB-activating Factors Modulate Expression and Function of CXCR7 in Endothelial Cells - Oral Presentation  
 Puerto Vallarta, Mexico
- 2012 1st International Congress on Oncogenic Herpesviruses and Associated Diseases  
 The KSHV-encoded miRNA miRK12-1 Influences CXCR7 Expression During Latency - Poster Presentation  
 Philadelphia, Pennsylvania, USA
- 2011 13th International Conference on Malignancies in AIDS and Other Acquired Immunodeficiencies  
 KSHV Infection of Endothelial Cells Manipulates CXCR7-mediated Signaling: Implications for Kaposi Sarcoma Progression and Intervention - Oral Presentation  
 NIH Main Campus, Bethesda, Maryland, USA
- 14th International Workshop on Kaposi Sarcoma  
 KSHV Infection of Endothelial Cells Manipulates CXCR7-mediated Signaling: Implications for Kaposi Sarcoma Progression and Intervention - Oral Presentation  
 Helsinki, Finland
- 2009 4th Annual NIH National Graduate Student Research Festival  
 Differential Ligand Binding to a Human Cytomegalovirus Chemokine Receptor Determines Cell Type Specific Motility - Poster Presentation  
 NIH Main Campus, Bethesda, Maryland, USA
- 12th International Cytomegalovirus Workshop  
 Differential Ligand Binding to a Human Cytomegalovirus Chemokine Receptor Determines Cell Type Specific Motility - Oral Presentation  
 Boston, Massachusetts, USA

## TEACHING EXPERIENCE

- |  |                                  |
|--|----------------------------------|
| Immunological Basis for Diseases and Drug Action | (Spring Trimester 2018-2021)     |
| Biopharmaceuticals                               | (Fall Trimester 2018, 2020-2021) |
| Special Topics in Immunology                     | (Summer Trimester 2019)          |



Immunology and Microbiology

(Continuous Online– First offering Fall 2020)

## **SERVICE TO PROFESSION**

### **Conference Organization**

Session Chair – 23<sup>rd</sup> International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents

Session Chair - 22<sup>nd</sup> International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents

Session Chair - International Conference on EBV and KSHV

Session Chair – 20<sup>th</sup> International Workshop on Kaposi Sarcoma Herpesvirus and Related Agents

### **Manuscript Review**

Journals: Oncotarget, Virology, PLoS Pathogens, Frontiers in Pharmacology, PLoS One, Naunyn Schmiedeberg's Archives of Pharmacology

Co-editor of 2022 Viruses and Cancer Section of Current Opinion in Virology

## **UNIVERSITY SERVICE**

2021 Chair - Graduate Program and Research Committee

Co-Chair - Pharmacy Graduate Program Review Committee

Member – School of Pharmacy Academic Progression Committee

Facilitator – Health Science Graduate Programs Inter-Professional Education Event

Member – Faculty Search Committee: Crean College Tenure Track Faculty Member in Public Health

Judge/Facilitator – CUSP research day

2020 Member – Provost Search Committee

Chair - Graduate Program and Research Committee

Facilitator – Pharmacy PCL4 Journal Club Presentations

2019 Judge – Graduate Student Research Showcase

Facilitator – Health Science Graduate Programs Inter-professional Education Event

2018-2020 Faculty Unit Ambassador – Institute for Excellence in Teaching and Learning

- 2018            Judge/Facilitator – CUSP research day
- Facilitator – Health Science Graduate Programs Inter-professional Education Event
- 2017-2020    Committee Member, Graduate Program and Research Committee