# Koenraad Van Doorslaer, Ph.D.

#### **Assistant Professor**

School of Animal and Comparative Biomedical Sciences

College of Agriculture and Life Sciences

Department of Immunobiology

College of Medicine

BIO5 Institute

Genetics GIDP

Cancer Biology GIDP

Arizona Cancer Center

University of Arizona

# **CHRONOLOGY of EDUCATION**

2005-2010 Albert Einstein College of Medicine

Bronx, NY

**Doctor of Philosophy, Biomedical Sciences** 

January 2011

Dissertation: The evolution of papillomavirus carcinogenicity.

Advisor: Dr. Robert D. Burk

Major Fields: Virology, Molecular & Cellular Biology, Evolution, Epidemiology

2002-2004 University of Leuven

Leuven, Belgium

M.S., Biomedical sciences

MS with Honors, Magna cum Laude

June 2004

Dissertation: Genetic characterization of the *Procyon lotor* papillomavirus type 1

Advisor: Dr. Marc Van Ranst

Major Fields: Virology, Evolution, Epidemiology

2000-2002 University of Leuven

Leuven, Belgium

**B.S.**, Biomedical Sciences

June 2002

# CHRONOLOGY of EMPLOYMENT

2017- University of Arizona, Tucson, Arizona

Assistant Professor, Cancer Biology Graduate Interdisciplinary Program

Assistant Professor, Genetics Graduate Interdisciplinary Program

Assistant Professor, Department of Immunobiology

Member, Arizona Cancer Center

Member, Arizona Ecosystem Genomics Initiative

2016- University of Arizona, Tucson, Arizona

Assistant Professor, School of Animal and Comparative Biomedical

Sciences

Assistant Professor, BIO5 Institute

2016-2016 National Institute of Allergy and Infectious Diseases,

National Institutes of Health

Bethesda, MD Research fellow

2011-2015 National Institute of Allergy and Infectious Diseases,

National Institutes of Health

Bethesda, MD

**Postdoctoral Fellow** 

Mentor: Dr. Alison A. McBride

# **GRANTS and AWARDS**

# **Total Support (Federal, State, and Foundation)**

Total cost submitted grants: \$38,610,452.00

Total cost funded: \$5,184,351.00 Indirect cost funded: \$970,384.20

# **Current Research Support**

NIH 1R01AI165638 - 01A1

07/01/2022 - 06/30/2026

**Sponsor:** National Institutes of Health (NIAID)

Title: Characterizing the role of cellular differentiation in productive papillomavirus amplification.

Goal: Determine how PRMT1 affects viral replication.

**Role:** PI (100%; \$ 1,901,556.00)

ACS RSG-22-054-01-IBCD

07/01/2022 - 06/30/2025

**Sponsor:** American Cancer Society

**Title:** Interplay of the cGAS/STING Immune Pathway and Oncogenic Papillomaviruses **Goal:** Determine how HPV interacts with the cGAS/STING innate sending pathway

Role: PI (100%; 792,000.00)

ABRC 07/01/2021 - 06/30/2024

**Sponsor:** Arizona Biomedical Research Center

**Title:** Comparative genomic insights into papillomavirus evolution and oncogenicity **Goal:** Use evolutionary analysis to determine how specific papillomaviruses became oncogenic

**Role:** PI (100%; \$224,907.00)

NIH 1R03DE030211 01/10/2021 – 12/31/2023

**Sponsor:** National Institutes of Health (NIDCR)

**Title:** Characterizing the role of cellular differentiation in productive papillomavirus amplification.

**Goal:** Determine host and viral factors in regulating productive viral replication

Role: PI (100%; \$307,000)

NIH 1R01GM136853 07/01/2020 – 06/30/2025

**Sponsor:** National Institutes of Health (NIGMS)

**Title:** Mechanisms and Consequences of L2-Dependent Subcellular Trafficking of the HPV Genome **Goal:** This project aims to understand the furin-dependent mechanisms of L2 trafficking and potential

evasion of cGAS/STING by HPV

Role: Collaborator (Dr. Campos; 5% effort; \$1,843,812.00)

USDA 1012632 10/01/2020 – 09/30/2022

Sponsor: USDA

Title: Detection and Control of Porcine Reproductive and Respiratory Syndrome Virus and

**Emerging Viral Diseases of Swine** 

Goal: Identify novel viruses affecting swine

Role: University of Arizona Project Director for multistate HATCH grant

#### **Completed Research Support**

Modulation of Intrinsic Immune Pathways by Oncogenic Papillomaviruses.

Alfred P. Sloan Foundation

Key Person, (**total: \$10,000.00**, effort: 50%, Total to KVD: \$5,000.00, Indirect: \$0.00)

Interplay of the cGAS/STING Immune Pathway and Oncogenic Papillomaviruses

American Cancer Society (Institutional Research Grant)

PI, (total: \$30,000.00, effort: 100%, Total to KVD: \$30,000.00, Indirect: \$0.00)

## **Pending Research Support**

Fecal Virome Characterization of the Endangered Sonoran Jaguar and Sympatric Pumas Association of Zoos and Aquariums

Co-Investigator, (total: \$19,815.00, effort: 50%, Total to KVD: \$0.00, Indirect: \$0.00)

Probing the mechanistic basis for T cell fate decisions (R01)

National Institutes of Health

Co-Investigator, (total: \$2,420,872.00, effort: 5%, Total to KVD: \$121,043.60, Indirect:

\$40,967.35)

Characterizing Viromes and Genomes in the Four Sonoran Felids

Association of Zoos and Aquariums

Co-Investigator, (total: \$23,393.00, effort: 50%, Total to KVD: \$11,696.50, Indirect: \$0.00)

Advancing Biomedical Training in Arizona

National Institutes of Health

Co-Investigator, (total: \$2,380,555.00, effort: 25%, Total to KVD: \$476,111.00, Indirect:

\$27,309.00)

Role of cGAS/STING During Persistent Papillomavirus Infection

National Institutes of Health

MPI, (total: \$2,276,973.00, effort: 50%, Total to KVD: \$1,138,486.50, Indirect: \$384,425.00)

Probing the mechanistic basis for T cell fate decisions

National Institutes of Health

Co-Investigator, (total: \$2,420,345.00, effort: 5%, Total to KVD: \$121,017.25, Indirect:

\$40,941.00)

Role of viral mRNA modifications in the progression of HPV positive cancers Concern Foundation

Principal Investigator, (**total: \$120,000.00**, effort: 100%, Total to KVD: \$120,000.00, Indirect: \$0.00)

Cis-acting Elements in the Regulation of Papillomavirus Gene Expression National Institutes of Health

Principal Investigator, (**total: \$408,977.00**, effort: 100%, Total to KVD: \$408,977.00, Indirect: \$133,977.00)

## **Unfunded Research Proposals**

Deciphering the interaction of epithelial differentiation with productive papillomavirus infection

Canadian Institute of Health Research (Canada)

Key Person, (total: \$105.076.00, effort: 0%, Total to KVD: \$0.00, Indirect: \$0.00)

Impact of the Cellular Niche on Human Papillomavirus Mediated Oncogenicity American Cancer Society

Principal Investigator, (**total: \$786,640.00**, effort: 100%, Total to KVD: \$393,320.00, Indirect: \$65,553.50)

Engineering modular receptor complexes via biomimicry

National Institutes of Health

Co-Investigator, (**total: \$2,920,080.00**, effort: 5%, Total to KVD: \$73,002.00, Indirect: \$25,443.70)

Emerging Viral Diseases in Southwestern Felids

United States Geological Survey

Co-Investigator, (total: \$87,372.00, effort: 50%, Total to KVD: \$87,372.00, Indirect: \$11,396.00)

The Importance and Evolution of Viral Oncogenes in Virus-Host Interactions National Institutes of Health

Principal Investigator, (total: \$1,884,842.00, effort: 100%, Total to **KVD: \$1,884,842.00,** Indirect: \$634,842.00)

Interplay of the cGAS/STING Immune Pathway and Oncogenic Papillomaviruses American Cancer Society

Principal Investigator, (**total: \$792,000.00**, effort: 100%, Total to KVD: \$792,000.00, Indirect: \$132,000.00)

Emerging Viral Diseases in At-risk Populations of Felids and Ungulates Morris Animal Foundation

Co-Investigator, (**total: \$149,956.00**, effort: 50%, Total to KVD: \$74,978.00, Indirect: \$5,554.00)

Emerging Viral Diseases in At-risk Populations of Felids and Ungulates Morris Animal Foundation

Co-Investigator, (**total: \$95,618.00**, effort: 50%, Total to KVD: \$47,809.00, Indirect: \$3,541.50)

Antagonism of cGAS/STING by oncogenic papillomaviruses.

National Institutes of Health

Co-Investigator, (**total: \$1,857,460.00**, effort: 50%, Total to KVD: \$928,730.00, Indirect: \$296,339.50)

Interplay of the cGAS/STING Immune Pathway and Oncogenic Papillomaviruses American Cancer Society

Principal Investigator, (**total: \$792,000.00**, effort: 100%, Total to KVD: \$792,000.00, Indirect: \$132,000.00)

Development of a SARS-CoV-2 entry inhibitor while preserving ACE2 function American Heart Association, Incorporated

Co-Investigator, (**total: \$100,000.00**, effort: 25%, Total to KVD: \$5,000.00, Indirect: \$454.55)

Women's Health Associated Microbiota Mimetic (WHAMM) for STI Basic and Translational Research

National Institute of Allergy and Infectious Disease

Co-PI, (**total: \$7,550,785.00**, effort: 37.5%, Total to KVD: \$2,491,759.05, Indirect: \$771,778.26)

Emerging Viral Diseases in At-Risk Populations of Felids and Ungulates Morris Animal Foundation

Co-Investigator, (**total: \$67,526.00**, effort: 50%, Total to KVD: \$33,763.00, Indirect: \$2,501.00)

Determining the impact of the cervico-vaginal microbiota on HPV cancer

Burroughs Wellcome Fund

Principal Investigator, (**total: \$500,000.00**, effort: 100%, Total to KVD: \$500,000.00, Indirect: \$0.00)

Antagonism of cGAS/STING by oncogenic papillomaviruses.

National Institutes of Health

Co-Investigator, (**total: \$1,857,466.00**, effort: 50%, Total to KVD: \$928,733.00, Indirect: \$296,139.00)

Identifying the mechanisms underlying increased severity of COVID19 induced pulmonary dysfunction in diabetes

National Institutes of Health

PI/Multiple, (**total: \$1,131,508.00**, effort: 33%, Total to KVD: \$339,452.40, Indirect: \$114,452.40)

The role of asymmetric protein dimethylation during the human papillomavirus lifecycle National Institutes of Health

Principal Investigator, (**total: \$1,884,842.00**, effort: 100%, Total to KVD: \$1,884,842.00, Indirect: \$634,842.00)

Interplay of the cGAS/STING Immune Pathway and Oncogenic Papillomaviruses American Cancer Society

Principal Investigator, (**total: \$792,000.00**, effort: 100%, Total to KVD: \$792,000.00, Indirect: \$132,000.00)

# **INTELLECTUAL PROPERTY and PATENTS**

US Patent Application No.: 17/345,300 (filed 6/11/2021)

Title: Rapid Image-based Screening for Bioactive Compounds that block Viral Replication

Inventors: Drs. Campos, Elaheh, Thorne, and Van Doorslaer

# Consulting

2022 - Consulting Contract with NIAID to consult for the development of the PaVE database

# **HONORS and AWARDS**

2022	University of Arizona award for Excellence in Postdoctoral Mentoring (Awarded)
2021	University of Arizona award for Excellence in Postdoctoral Mentoring (Nominated)
2017	Award for best oral presentation at the 2017 DNA tumor virus meeting
2014	ASM Conference on Viral Manipulation of Nuclear Processes Travel Award
2010	Albert Einstein College of Medicine Student Service Award
2009	International Papillomavirus Society Travel Award
2007	International Papillomavirus Society Travel Award
2006	International Papillomavirus Society Travel Award

# **PUBLICATIONS and CREATIVE ACTIVITY**

Refereed Journal Articles (h-index = 29)

# https://orcid.org/0000-0002-2985-0733

(\*Work performed in graduate school, \$Corresponding Author, &trainee authorships)

Since joining the University of Arizona I published 25 papers (13 as corresponding author).

- 1. Lee MS, Tuohy PJ, Kim CY, Lichauco K, Parrish HL, Van Doorslaer K\$, Kuhns MS. Enhancing and inhibitory motifs regulate CD4 activity. Elife. 2022 Jul 21;11:e79508. doi: 10.7554/eLife.79508. PMID: 35861317; PMCID: PMC9333989.
- 2. King K<sup>&</sup>, Larsen BB, Gryseels S, Richet C, Kraberger S, Jackson R<sup>&</sup>, Worobey M, Harrison JS, Varsani A, <u>Van Doorslaer K</u><sup>\$</sup>. Coevolutionary Analysis Implicates Toll-Like Receptor 9 in Papillomavirus Restriction. mBio. 2022 Apr 26;13(2):e0005422. doi: 10.1128/mbio.00054-22. Epub 2022 Mar 21. PMID: 35311536.
- 3. Zerbini FM, Siddell SG, Mushegian AR, Walker PJ, Lefkowitz EJ, Adriaenssens EM, Alfenas-Zerbini P, Dutilh BE, García ML, Junglen S, Krupovic M, Kuhn JH, Lambert AJ, Łobocka M, Oksanen HM, Robertson DL, Rubino L, Sabanadzovic S, Simmonds P, Suzuki N, <u>Van Doorslaer K,</u> Vandamme AM, Varsani A. Differentiating between viruses and virus species by writing their names correctly. Arch Virol. 2022 Apr;167(4):1231-1234. doi: 10.1007/s00705-021-05323-4. PMID: 35043230.
- 4. Kraberger S, Austin C, Farkas K, Desvignes T, Postlethwait JH, Fontenele RS,Schmidlin K, Bradley RW, Warzybok P, Van Doorslaer K, Davison W, Buck CB, Varsani A. Discovery of novel fish papillomaviruses: From the Antarctic to the commercial fish market. Virology. 2022 Jan 2;565:65-72. doi: 10.1016/j.virol.2021.10.007. Epub 2021 Nov 2. PMID: 34739918.
- 5. Schmidlin K, Kraberger S, Cook C, DeNardo DF, Fontenele RS, **Van Doorslaer K,** Martin DP, Buck CB, Varsani A. A novel lineage of polyomaviruses identified in bark scorpions. Virology. 2021 Nov;563:58-63. doi: 10.1016/j.virol.2021.08.008.Epub 2021 Aug 18. PMID: 34425496.
- Kraberger S, Serieys LE, Richet C, Fountain-Jones NM, Baele G, Bishop JM, Nehring M, Ivan JS, Newkirk ES, Squires JR, Lund MC, Riley SP, Wilmers CC, van Helden PD, <u>Van Doorslaer K</u>, Culver M, VandeWoude S, Martin DP, Varsani A. Complex evolutionary history of felid anelloviruses. Virology. 2021 Oct;562:176-189. doi: 10.1016/j.virol.2021.07.013. Epub 2021 Jul 29. PMID: 34364185.
- 7. Changes to virus taxonomy and to the International Code of Virus Classification and Nomenclature ratified by the International Committee on Taxonomy of Viruses. Walker PJ., Siddell SG., Lefkowitz EJ., Mushegian AR., Adriaenssens EM., Alfenas-Zerbini P., Davison AJ., Dempsey DM., Dutilh BE., García ML., Harrach B., Harrison RL., Hendrickson RC., Junglen S., Knowles NJ., Krupovic M., Kuhn JH., Lambert AJ., Łobocka M., Nibert ML., Oksanen HM., Orton RJ., Robertson DL., Rubino L., Sabanadzovic S., Simmonds P., Smith DB., Suzuki N., Van Doorslaer, K., Vandamme AM., Varsani A., Zerbini FM. Arch Virol. 2021 Jul 6. doi: 10.1007/s00705-021-05156-1. PMID: 34231026
- 8. Coursey, TL., Van Doorslaer, K., & McBride, AA. Sequences in the Human papillomavirus Type 18 (HPV18) Upstream Regulatory Region regulate Viral Genome Replication, Establishment and Persistence. J Virol. 2021 Jul 7: JVI0068621. doi: 10.1128/JVI.00686-21. Online ahead of print. PMID: 34232709
- 9. Lee, MS., Tuohy, PJ., Kim, C., Lichauco, K., Parrish, HL., <u>Van Doorslaer, K<sup>\$</sup>.,</u> & Kuhns, MS. Enhancing and inhibitory motifs have coevolved to regulate CD4 activity. bioRxiv, 2021.04.29.441928. https://doi.org/10.1101/2021.04.29.441928.

- 10. HPV32-related Heck's disease in a chronic graft-versus-host disease patient with long-term successful KTP laser treatment: A rare case report., Nguyen JT, Allen CT, Dodge JT, <u>Van Doorslaer K, McBride AA, Pavletic SZ, Mays JW., Clin Case Rep. 2021 May 15;9(5):e04253.</u> doi: 10.1002/ccr3.4253. PMID: 34026202; PMCID: PMC8123741.
- 11. 3D Oral and Cervical Tissue Models for Studying Papillomavirus Host-Pathogen Interactions., Jackson R<sup>&</sup>, Maarsingh JD, Herbst-Kralovetz MM, <u>Van Doorslaer K<sup>\$</sup>.,</u> Curr Protoc Microbiol. 2020 Dec;59(1):e129. doi: 10.1002/cpmc.129. PMID: 33232584.
- 12. Vesicular trafficking permits evasion of cGAS/STING surveillance during initial human papillomavirus infection., Uhlorn BL, Jackson R<sup>&</sup>, Li S, Bratton SM, <u>Van Doorslaer K<sup>\$</sup></u>, Campos SK., PLoS Pathog. 2020 Nov 30;16(11):e1009028. doi: 10.1371/journal.ppat.1009028. PMID: 33253291; PMCID: PMC7728285.
- 13. Payne N<sup>&</sup>, Kraberger S, Fontenele RS, Schmidlin K, Bergeman MH<sup>&</sup>, Cassaigne I, Culver M, Varsani A, <u>Van Doorslaer K<sup>\$</sup>.</u>, Novel Circoviruses Detected in Feces of Sonoran Felids., Viruses. 2020 Sep 15;12(9):1027. doi: 10.3390/v12091027. PMID: 32942563; PMCID: PMC7551060.
- 14. PuMA: A papillomavirus genome annotation tool. Virus Evol. 2020 Aug 26;6(2):veaa068., Pace J<sup>&</sup>, Youens-Clark K, Freeman C<sup>&</sup>, Hurwitz B, <u>Van Doorslaer K<sup>\$</sup>.,</u> doi: 10.1093/ve/veaa068. PMID: 33381306; PMCID: PMC7751161.
- 15. A Novel Divergent Geminivirus Identified in Asymptomatic New World Cactaceae Plants., Fontenele RS, Salywon AM, Majure LC, Cobb IN, Bhaskara A, Avalos-Calleros JA, Argüello-Astorga GR, Schmidlin K, Khalifeh A, Smith K, Schreck J, Lund MC, Köhler M, Wojciechowski MF, Hodgson WC, Puente-Martinez R, <u>Van Doorslaer K</u>, Kumari S, Vernière C, Filloux D, Roumagnac P, Lefeuvre P, Ribeiro S, Kraberger S, Martin DP, Varsani A., Viruses 2020, 12, 398. doi: 10.3390/v12040398. PMID 32260283
- Rules of Expansion: an Updated Consensus Operator Site for the CopR-CopY Family of Bacterial Copper Exporter System Repressors. O'Brien H, Alvin JW, Menghani SV, Sanchez-Rosario Y, <u>Van Doorslaer K</u>, Johnson MDL. mSphere. 2020 May 27;5(3):e00411-20. doi: 10.1128/mSphere.00411-20. PMID: 32461276
- 17. Insertional oncogenesis by HPV70 revealed by multiple genomic analyses in a clinically HPV-negative cervical cancer. Van Arsdale A, Patterson NE, Maggi EC, Agoni L, <u>Van Doorslaer K</u>, Harmon B, Nevadunsky N, Kuo DYS, Einstein MH, Lenz J, Montagna C. Genes Chromosomes Cancer 2019 Aug 13. doi: 10.1002/gcc.22799. PMID: 31407403
- Neisseria gonorrhoeae evades autophagic killing by downregulating CD46-cyt1 and remodeling lysosomes. Kim WJ, Mai A, Weyand NJ, Rendón MA, <u>Van Doorslaer K</u>, So M. PLoS Pathog. 2019 Feb 12;15(2):e1007495. doi: 10.1371/journal.ppat.1007495. eCollection 2019 Feb. PMID: 30753248
- 19. The Launch of an International Animal Papillomavirus Reference Center. **Van Doorslaer K**<sup>\$</sup> and Dillner J.Viruses. 2019 Jan 14;11(1). pii: E55. doi: 10.3390/v11010055. PMID: 30646493. PMCID: PMC7173537
- 20. Mechanisms of DNA Virus Evolution. Szpara ML, <u>Van Doorslaer K</u>\$. Reference Module in Life Sciences. 2019 : Published online 2019 Dec 5.
- 21. Metagenomic Discovery of 83 New Human Papillomavirus Types in Patients with Immunodeficiency. Pastrana DV, Peretti A, Welch NL, Borgogna C, Olivero C, Badolato R, Notarangelo LD, Gariglio M, FitzGerald PC, McIntosh CE, Reeves J, Starrett GJ, Bliskovsky V, Velez D, Brownell I, Yarchoan R, Wyvill KM, Uldrick TS, Maldarelli F, Lisco A, Sereti I, Gonzalez CM, Androphy EJ, McBride AA, <a href="Van Doorslaer K">Van Doorslaer K</a>, Garcia F, Dvoretzky I, Liu JS, Han J, Murphy PM, McDermott DH, Buck CB.mSphere. 2018 Dec 12;3(6). pii: e00645-18. doi: 10.1128/mSphereDirect.00645-18. PMID: 30541782
- 22. Building (viral) phylogenetic trees using a Maximum Likelihood approach. King K<sup>&</sup>, <u>Van Doorslaer K<sup>\$</sup>.</u> *Curr Protoc Microbiol*. 2018 Nov;51(1):e63. doi: 10.1002/cpmc.63. PMID: 30265446
- 23. ICTV Virus Taxonomy Profile: *Papillomaviridae*. <u>Van Doorslaer K\$,</u> Chen Z; Bernard HU; Chan PKS, DeSalle R, Dillner J, Forslund O, Haga T, McBride AA, Villa LL, Burk RD, ICTV

- Consortium. J Gen Virol. 2018 Aug;99(8):989-990. doi: 10.1099/jgv.0.001105. Epub 2018 Jun 21. PMID: 29927370
- 24. Fish polyomaviruses belong to two distinct evolutionary lineages. **Van Doorslaer K**\$, Kraberger S, Austin C, Farkas K, Bergeman M<sup>&</sup>, Paunil E<sup>&</sup>, Davison W, Varsani A. *J Gen Virol*. 2018 Apr;99(4):567-573. doi: 10.1099/jgv.0.001041. Epub 2018 Mar 8. PMID:29517483
- 25. Diverse papillomaviruses identified in Weddell seals. Smeele ZE, Burns JM, <a href="Van Doorslaer">Van Doorslaer</a>
  <a href="K">K</a>, Fontenele RS, Waits K, Stainton D, Shero MR, Beltran RS, Kirkham AL, Berngartt R, Kraberger S, Varsani A. *J Gen Virol*. 2018 Apr;99(4):549-557. doi: 10.1099/jgv.0.001028. Epub 2018 Feb 22. PMID:29469687
- 26. Persistence of an Oncogenic Papillomavirus Genome Requires cis Elements from the Viral Transcriptional Enhancer. **Van Doorslaer K**, Chen D, Chapman S, Khan J, McBride AA. *MBio*. 2017 Nov 21;8(6). pii: e01758-17. doi: 10.1128/mBio.01758-17. PMID:29162712
- 27. Unique genome organization of non-mammalian papillomaviruses provides insights into the evolution of viral early proteins. <a href="Van Doorslaer K">Van Doorslaer K</a>, Ruoppolo V, Schmidt A, Lescroël A, Jongsomjit D, Elrod M, Kraberger S, Stainton D, Dugger KM, Ballard G, Ainley DG, Varsani A. *Virus Evol.* 2017 Oct 6;3(2):vex027. doi: 10.1093/ve/vex027. eCollection 2017 Jul. PMID:29026649
- 28. Roles of APOBEC3A and APOBEC3B in Human Papillomavirus Infection and Disease Progression. Warren CJ, Westrich JA, <u>Van Doorslaer K</u>, Pyeon D. *Viruses*. 2017 Aug 21;9(8). pii: E233. doi: 10.3390/v9080233. PMID:28825669
- 29. The Papillomavirus Episteme: a major update to the papillomavirus sequence database. <a href="Van Doorslaer K">Van Doorslaer K</a>, Li Z, Xirasagar S, Maes P, Kaminsky D, Liou D, Sun Q, Kaur R, Huyen Y, McBride AA. <a href="Nucleic Acids Res">Nucleic Acids Res</a>. 2017 Jan 4;45(D1):D499-D506. doi: 10.1093/nar/gkw879. Epub 2016 Oct 5. PMID:28053164
- 30. Novel recombinant papillomavirus genomes expressing selectable genes., **Van Doorslaer K**, Porter S, McKinney C, Stepp WH, McBride AA. *Sci Rep.* 2016 Nov 28;6:37782. doi: 10.1038/srep37782. PMID:27892937
- 31. Detection and Genotyping of Human Papillomaviruses from Archival Formalin-Fixed Tissue Samples. <u>Van Doorslaer K</u>, Chen Z, McBride AA. *Curr Protoc Microbiol*. 2016 Nov 18;43:14B.9.1-14B.9.20. doi: 10.1002/cpmc.16. PMID:27858973
- 32. Molecular archeological evidence in support of the repeated loss of a papillomavirus gene. Van Doorslaer K<sup>\$</sup>, McBride AA. Sci Rep. 2016 Sep 8;6:33028. doi: 10.1038/srep33028. PMID:27604338
- 33. The Ancient Evolutionary History of Polyomaviruses. Buck CB, <u>Van Doorslaer K</u>, Peretti A, Geoghegan EM, Tisza MJ, An P, Katz JP, Pipas JM, McBride AA, Camus AC, McDermott AJ, Dill JA, Delwart E, Ng TF, Farkas K, Austin C, Kraberger S, Davison W, Pastrana DV, Varsani A. *PLoS Pathog.* 2016 Apr 19;12(4):e1005574. doi: 10.1371/journal.ppat.1005574. eCollection 2016 Apr. PMID:27093155
- 34. UbSRD: The Ubiquitin Structural Relational Database. Harrison JS, Jacobs TM, Houlihan K, <a href="Van Doorslaer K">Van Doorslaer K</a>, Kuhlman B. *J Mol Biol*. 2016 Feb 22;428(4):679-687. doi: 10.1016/j.jmb.2015.09.011. Epub 2015 Sep 25. PMID:26392143
- 35. Degradation of Human PDZ-Proteins by Human Alphapapillomaviruses Represents an Evolutionary Adaptation to a Novel Cellular Niche. <a href="Van Doorslaer K">Van Doorslaer K</a>, DeSalle R, Einstein MH, Burk RD. PLoS Pathog. 2015 Jun 18;11(6):e1004980. doi: 10.1371/journal.ppat.1004980. eCollection 2015 Jun. PMID:26086730
- 36. A proteomic approach to discover and compare interacting partners of papillomavirus E2 proteins from diverse phylogenetic groups. Jang MK, Anderson DE, <u>Van Doorslaer K</u>, McBride AA. *Proteomics*. 2015 Jun;15(12):2038-50. doi: 10.1002/pmic.201400613. Epub 2015 Apr 28. PMID:25758368
- 37. Role of the host restriction factor APOBEC3 on papillomavirus evolution. **Van Doorslaer K**, Warren CJ, Pandey A, Espinosa JM, Pyeon D. *Virus Evol.* 2015 Jan;1(1). pii: vev015. Epub 2015 Jan 1. PMID:27570633

- 38. Evolution of the papillomaviridae. <u>Van Doorslaer K.</u>\$ *Virology*. 2013 Oct;445(1-2):11-20. doi: 10.1016/j.virol.2013.05.012. Epub 2013 Jun 14. PMID:23769415
- 39. Condylomatous genital lesions in cynomolgus macaques from Mauritius. Harari A, Wood CE, <a href="Van Doorslaer K">Van Doorslaer K</a>, Chen Z, Domaingue MC, Elmore D, Koenig P, Wagner JD, Jennings RN, Burk RD. *Toxicol Pathol.* 2013 Aug;41(6):893-901. doi: 10.1177/0192623312467521. Epub 2012 Dec 21. PMID:23262641
- 40. The Papillomavirus Episteme: a central resource for papillomavirus sequence data and analysis. <a href="Van Doorslaer K">Van Doorslaer K</a>, Tan Q, Xirasagar S, Bandaru S, Gopalan V, Mohamoud Y, Huyen Y, McBride AA. <a href="Nucleic Acids Res.">Nucleic Acids Res.</a> 2013 Jan;41(Database issue):D571-8. doi: 10.1093/nar/gks984. Epub 2012 Oct 23. PMID:23093593
- 41. \*Association between hTERT activation by HPV E6 proteins and oncogenic risk. <u>Van Doorslaer K</u>, Burk RD. *Virology*. 2012 Nov 10;433(1):216-9. doi: 10.1016/j.virol.2012.08.006. Epub 2012 Aug 25. PMID:22925336
- 42. \*Sequence imputation of HPV16 genomes for genetic association studies. Smith B, Chen Z, Reimers L, <u>Van Doorslaer K</u>, Schiffman M, Desalle R, Herrero R, Yu K, Wacholder S, Wang T, Burk RD. *PLoS One*. 2011;6(6):e21375. doi: 10.1371/journal.pone.0021375. Epub 2011 Jun 23. PMID:21731721
- 43. \*Papillomaviruses: evolution, Linnaean taxonomy and current nomenclature. **Van Doorslaer K**, Bernard HU, Chen Z, de Villiers EM, zur Hausen H, Burk RD. *Trends Microbiol*. 2011 Feb;19(2):49-50; author reply 50-1. doi: 10.1016/j.tim.2010.11.004. Epub 2010 Dec 7. No abstract available. PMID:21144754
- 44. \*Evolution of human papillomavirus carcinogenicity. **Van Doorslaer K**, Burk RD. *Adv Virus Res.* 2010;77:41-62. doi: 10.1016/B978-0-12-385034-8.00002-8. PMID:20951869
- 45. \*Novel betapapillomavirus associated with hand and foot papillomas in a cynomolgus macaque. Wood CE, Tannehill-Gregg SH, Chen Z, <u>Van Doorslaer K</u>, Nelson DR, Cline JM, Burk RD. *Vet Pathol.* 2011 May;48(3):731-6. doi: 10.1177/0300985810383875. Epub 2010 Oct 4. PMID:20921322
- 46. \*Degradation of p53 by human Alphapapillomavirus E6 proteins shows a stronger correlation with phylogeny than oncogenicity. Fu L, **Van Doorslaer K**, Chen Z, Ristriani T, Masson M, Tray G, Burk RD. *PLoS One.* 2010 Sep 17;5(9). pii: e12816. doi: 10.1371/journal.pone.0012816. PMID:20862247
- 47. \*Overexpression of miR-21 promotes an in vitro metastatic phenotype by targeting the tumor suppressor RHOB. Connolly EC, <u>Van Doorslaer K</u>, Rogler LE, Rogler CE. *Mol Cancer Res.* 2010 May;8(5):691-700. doi: 10.1158/1541-7786.MCR-09-0465. Epub 2010 May 11. PMID:20460403
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- 49. \*Lack of heterogeneity of HPV16 E7 sequence compared with HPV31 and HPV73 may be related to its unique carcinogenic properties. Safaeian M, <u>Van Doorslaer K</u>, Schiffman M, Chen Z, Rodriguez AC, Herrero R, Hildesheim A, Burk RD. *Arch Virol.* 2010 Mar;155(3):367-70. doi: 10.1007/s00705-009-0579-2. Epub 2010 Jan 6. PMID:20049619
- 50. \*Genomic diversity and interspecies host infection of alpha12 Macaca fascicularis papillomaviruses (MfPVs). Chen Z, <u>Van Doorslaer K</u>, DeSalle R, Wood CE, Kaplan JR, Wagner JD, Burk RD. *Virology*. 2009 Oct 25;393(2):304-10. doi: 10.1016/j.virol.2009.07.012. Epub 2009 Aug 28. PMID:19716580
- 51. \*Human papillomaviruses: genetic basis of carcinogenicity. Burk RD, Chen Z, **Van Doorslaer K**. *Public Health Genomics*. 2009;12(5-6):281-90. doi: 10.1159/000214919. Epub 2009 Aug 11. PMID:19684441
- 52. \*Serological response to an HPV16 E7 based therapeutic vaccine in women with high-grade cervical dysplasia. **Van Doorslaer K**, Reimers LL, Studentsov YY, Einstein MH, Burk RD.

- *Gynecol Oncol.* 2010 Feb;116(2):208-12. doi: 10.1016/j.ygyno.2009.05.044. Epub 2009 Jun 24. PMID:19555999
- 53. \*Identification of unusual E6 and E7 proteins within avian papillomaviruses: cellular localization, biophysical characterization, and phylogenetic analysis. **Van Doorslaer K**, Sidi AO, Zanier K, Rybin V, Deryckre F, Rector A, Burk RD, Lienau EK, van Ranst M, Travé G. *J Virol.* 2009 Sep;83(17):8759-70. doi: 10.1128/JVI.01777-08. Epub 2009 Jun 24. PMID:19553340
- 54. \*Macaca fascicularis papillomavirus type 1: a non-human primate betapapillomavirus causing rapidly progressive hand and foot papillomatosis. Joh J, Hopper K, *Van Doorslaer K*, Sundberg JP, Jenson AB, Ghim SJ. *J Gen Virol*. 2009 Apr;90(Pt 4):987-94. doi: 10.1099/vir.0.006544-0. Epub 2009 Mar 4. PMID:19264664
- 55. \*A single amino acid substitution in a segment of the CA protein within Gag that has similarity to human immunodeficiency virus type 1 blocks infectivity of a human endogenous retrovirus K provirus in the human genome. Heslin DJ, Murcia P, Arnaud F, **Van Doorslaer K**, Palmarini M, Lenz J. *J Virol*. 2009 Jan;83(2):1105-14. doi: 10.1128/JVI.01439-08. Epub 2008 Nov 12. PMID:19004950
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- 57. Genomic characterization of novel dolphin papillomaviruses provides indications for recombination within the *Papillomaviridae*. Rector A, Stevens H, Lacave G, Lemey P, Mostmans S, Salbany A, Vos M, <u>Van Doorslaer K</u>, Ghim SJ, Rehtanz M, Bossart GD, Jenson AB, Van Ranst M. *Virology*. 2008 Aug 15;378(1):151-61. doi: 10.1016/j.virol.2008.05.020. Epub 2008 Jun 24. PMID:18579177
- 58. Ancient papillomavirus-host co-speciation in Felidae. Rector A, Lemey P, Tachezy R, Mostmans S, Ghim SJ, <u>Van Doorslaer K</u>, Roelke M, Bush M, Montali RJ, Joslin J, Burk RD, Jenson AB, Sundberg JP, Shapiro B, Van Ranst M. *Genome Biol.* 2007;8(4):R57. 2007. PMID:17430578
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- 60. Genetic characterization of the first chiropteran papillomavirus, isolated from a basosquamous carcinoma in an Egyptian fruit bat: the Rousettus aegyptiacus papillomavirus type 1. Rector A, Mostmans S, **Van Doorslaer K**, McKnight CA, Maes RK, Wise AG, Kiupel M, Van Ranst M. *Vet Microbiol*. 2006 Oct 31;117(2-4):267-75. Epub 2006 Jul 18. PMID:16854536
- 61. Genetic characterization of the Capra hircus papillomavirus: a novel close-to-root artiodactyl papillomavirus. <a href="Van Doorslaer K">Van Doorslaer K</a>, Rector A, Vos P, Van Ranst M. Virus Res. 2006 Jun;118(1-2):164-9. Epub 2006 Jan 23. PMID:16430985
- 62. Isolation and cloning of the raccoon (Procyon lotor) papillomavirus type 1 by using degenerate papillomavirus-specific primers. Rector A, <u>Van Doorslaer K</u>, Bertelsen M, Barker IK, Olberg RA, Lemey P, Sundberg JP, Van Ranst M. *J Gen Virol*. 2005 Jul;86(Pt 7):2029-33. PMID:15958682
- 63. Isolation and cloning of a papillomavirus from a North American porcupine by using multiply primed rolling-circle amplification: the Erethizon dorsatum papillomavirus type 1. Rector A, Tachezy R, **Van Doorslaer K**, MacNamara T, Burk RD, Sundberg JP, Van Ranst M. *Virology*. 2005 Jan 20;331(2):449-56. PMID:15629787

#### Scholarly Book Chapters

- 1. Mechanisms of DNA virus evolution. Szpara ML and **Van Doorslaer K.**, 2020, *In* Ecyclopedia of Virology, 4th edition. Edited by Bamford and Zuckerman. Elsevier
- 2. Replication and Maintenance of Viral Genomes by Association with Host Chromatin. <a href="Van Doorslaer K">Van Doorslaer K</a>, Sekhar V, Khan J, McBride AA., 2012. <a href="In In Small DNA Viruses">In Small DNA Viruses</a>. Edited by Kevin L. Gaston. Horizon Press.
- \*Recent developments in the interactions between caveolin and pathogens. Machado FS, Rodriquez NE, Adesse D, Garzoni LR, Esper L, Lisanti MP, Burk RD, Albanese C, <u>Van</u> <u>Doorslaer K</u>, Weiss LM, Nagajyothi F, Nosanchuk JD, Wilson ME, Tanowitz HB., 2010. *In* Caveolins and caveolae: Role in signaling and Disease mechanisms. Edited by Jasmin JF, Frank PG and Lisanti MP. Landes Bioscience. Pubmed PMID: 22411314

#### Course Materials

2021

Viral Classification and Taxonomy. <u>Van Doorslaer, K.</u> Offered as part of "Virology and Epidemiology in the Time of COVID-19" by the American Museum of Natural History (https://www.amnh.org/learn-teach/seminars-on-science/courses/virology-and-epidemiology-in-the-time-of-covid-19; https://www.coursera.org/amnh).

#### General Public Publications

**2016** PaVE: The Papillomavirus Episteme. McBride AA and <u>Van Doorslaer, K.</u> HPV today (number 26)

#### **Electronic Publications**

Websites

The Papillomavirus Episteme (PaVE), https://pave.niaid.nih.gov/

Computer Code/scripts

GitHub Repository https://github.com/Van-Doorslaer

GitHub Repository https://github.com/KVD-lab

#### Popular press and local Media

May 2022 How worried should you be about monkeypox? We asked some Arizona experts

#### **AZ** Central

https://www.azcentral.com/story/news/local/arizona-

science/2022/05/21/monkeypox-spreading-several-countries-what-we-know-so-far/9864669002/

**ExBulletin** 

https://exbulletin.com/world/health/1635939/

May 2022 He wasn't a smoker, but still got throat cancer. The cause? A virus that could've been in his body for decades.

**USA Today** 

https://www.usatoday.com/in-depth/news/health/2022/05/23/human-papillomavirus-research-may-help-lead-cancer-immunotherapy/9766207002/

AZ Central

https://www.azcentral.com/in-depth/news/local/arizona-science/2022/05/05/human-papillomavirus-research-may-help-lead-cancer-immunotherapy/9464171002/

Oct 2021 FACT FINDERS: How Merck's COVID Pill Works

**KOLD13** (article and video)

https://www.kold.com/2021/10/12/fact-finders-how-mercks-covid-pill-works/

Aug 2021 UArizona professors rank most effective masks to protect against COVID-19

**KVOA news4 Tucson** (article and video)

https://www.kvoa.com/coronavirus/uarizona-professors-rank-most-effective-masks-to-protect-against-covid-19/article 28e78dc1-b133-5d62-9a1e-b3434781275a.html

Jun 2020 UA assistant professors testing thousands of drugs against COVID-19

**KOLD13** (article and video)

https://www.kold.com/video/2020/06/10/ua-assistant-professors-testing-thousands-drugs-against-covid-/

# SCHOLARLY PRESENTATIONS

\*Delayed due to COVID-19

#### Selected Presentations by trainees

Jul 2022 DNA Tumour Virus Meeting 2022, Cambridge University, UK

Williams DEJ, Banka A, Jackson R, King K, Van Doorslaer K

Single Cell mRNA Sequencing Identifies Protein Arginine Methyltransferase 1 as

a Host Factor that Promotes HPV Infection

UArizona Cancer Center's Office of Cancer Research Training and Education

Coordination (CRTEC) Travel award

Jul 2022 DNA Tumour Virus Meeting 2022. University of Cambridge, UK.

> Jackson R, Rajadhyaksha EV, Williams D, Flores CE, Banka A, Van Doorslaer K. Single-cell transcriptomics of HPV16's productive lifecycle in 3D oral epithelia.

Jul 2022 DNA Tumor Virus Meeting 2022. University of Cambridge, UK

Tobey I, Uhlorn B, Jackson R, King K, Campos S, Van Doorslaer K

HPV Inhibition of cGAS/STING Pathway

UArizona Cancer Center's Office of Cancer Research Training and Education

Coordination (CRTEC) Travel award

Jul 2022 DNA Tumour Virus Meeting 2022. University of Cambridge, UK.

Banka A, Williams D, Jackson R, Van Doorslaer K.

Single cell transcriptomic analysis of primary human cervical keratinocytes

following HPV18 infection.

UArizona Cancer Center's Office of Cancer Research Training and Education

Coordination (CRTEC) Travel award

College of Medicine Tucson Research Day 2022, University of Arizona, USA, May 2022

Williams DEJ, Banka A, Jackson R, King K, Van Doorslaer K

Single Cell Sequencing Identifies Protein Arginine Methyltransferase 1 as a Regulator of Persistent HPV Infection in Primary Cervical Keratinocyte

Apr 2022 Joint Biology Research Retreat 2022, University of Arizona, USA,

Williams DEJ, Banka A, Jackson R, King K, Van Doorslaer K

Identification of Protein Arginine Methyltransferase 1 as a Regulator of

Persistent HPV Infection Through Single Cell Sequencing

Awarded best oral presentation

University of Arizona Genetics Core Seminar on Single Cell Services & Apr 2022

Technologies.

University of Arizona, Tucson, AZ, USA.

Jackson R, Van Doorslaer K.

UAGC single cell seminar: HPV16's viral lifecycle in 3D oral epithelia.

Mar 2022 17th Annual Frontiers in Immunobiology & Immunopathogenesis Symposium.

University of Arizona, Tucson, AZ, USA.

Jackson R, Rajadhyaksha EV, Flores CE, Williams D, Van Doorslaer K.

HPV16's differentiation-dependent viral lifecycle in 3D oral epithelia.

Feb 2022 17th Frontiers in Immunobiology & Immunopathogenesis Symposium 2022,

University of Arizona, USA

Williams DEJ, Banka A, Jackson R, King K, Van Doorslaer K

Single Cell Sequencing Identifies a Role for Arginine Methylation in Persistent

**HPV Infection** 

Jan 2022 Invited speaker for 16/17/18 Field Ambulance virtual training night.

Canadian Armed Forces, Regina, SK

Winnipeg, MB; Thunder Bay, ON, Canada.

The wild west of viruses.

Jackson R.

Nov 2021 34th International Papillomavirus Conference.

Virtual.

Tobey I, Uhlorn B, Jackson R, King K, Van Doorslaer K, Campos S

Interplay of HPV and the cGAS/STING pathway

UArizona Cancer Center's Office of Cancer Research Training and Education

Coordination (CRTEC) Travel award

Nov 2021 34th International Papillomavirus Conference.

Virtual.

Williams DEJ, King K, Jackson R, Van Doorslaer K

Single-cell Transcriptomic Analysis of Primary Cervical Keratinocytes Following HPV18 Infection Identifies Protein Arginine Methyltransferase 1 as a Regulator of HPV Gene Expression

UArizona Cancer Center's Office of Cancer Research Training and Education Coordination (CRTEC) Travel award

Award for best oral presentation in Basic Science

Apr 2021 Discover BIO5: Research to Innovation Showcase.

University of Arizona, Tucson, AZ, USA.

<u>Jackson R, Williams D, Łaniewski P, McKenzie R, King K, Herbst-Kralovetz MM,</u>

Van Doorslaer K. Deciphering HPV infection in lab-grown 3D tissues.

Dec 2020 American Physician Scientists Association (APSA) West Regional Meeting

University of Arizona, USA,

Williams DEJ, King K, Jackson R, Van Doorslaer K

Single Cell Transcriptomic Analysis Reveals Early Events of Oncogenic HPV

Infection

Nov 2020 Viroholics Seminar Series

Arizona State University, Tempe, AZ, USA Modeling HPV infection in 3D epithelium.

Jackson R, Van Doorslaer K.

Oct, 2020 ImmunobiologyTrainee Seminar Series

University of Arizona, Tucson, AZ, USA Modeling HPV infection in 3D epithelium.

Jackson R, Van Doorslaer K.

\*Apr 2020 ASU-UA Virology Symposium Biodesign Institute, Arizona State University, AZ, USA Jackson R, Uhlorn BL, King KM, Jandova J, Campos SK, Van Doorslaer K. Attenuation of cytosolic DNA sensing by human papillomaviruses in keratinocytes. \*Apr 2020 Viroholics Seminar Series Biodesign Institute, Arizona State University, AZ, USA Jackson R, Williams DE, Van Doorslaer K A single cell view of HPV infection Cancelled/postponed due to COVID19 15th Annual Frontiers in Immunobiology & Immunopathogenesis Symposium Mar 2020 University of Arizona, Tucson, AZ, USA Jackson R, Uhlorn BL, King KM, Jandova J, Van Doorslaer K, Campos SK. Attenuation of cytosolic DNA sensing by human papillomaviruses in keratinocytes. Mar 2020 15th Annual Frontiers in Immunobiology & Immunopathogenesis Symposium University of Arizona, Tucson, AZ, USA Williams DE, King KM, Jackson R, Van Doorslaer K. Modeling human papillomavirus oncogenesis from infection to transformation. Winner Best Poster Award Dec 2019 Methods in Evolution and Cancer Bootcamp Arizona Cancer Evolution Center, Arizona State University, AZ, USA (poster). Williams DE, King KM, Jackson R, Van Doorslaer K. Modeling human papillomavirus oncogenesis from infection to transformation. Winner Best Poster Award Apr 2018 Annual Meeting for the Arizona-Nevada Branch of the American Society for Microbiology. University of Nevada Las Vegas. Las Vegas, NV. Jackson J, King K, Van Doorslaer K Detecting Papillomavirus Recombination in vivo Winner Best Poster Award Selected Talks at International/National Conferences March 2023 35th International Papillomavirus Conference **Invited Plenary Session** Kyoto, Japan TBD \*Jul 2020 DNA tumor virus meeting Montreal, Canada Single Cell sequencing of HPV infected cells provides insights into viral establishment \*Jun 2020 Gordon Conference: Single-Cell Cancer Biology Newry, ME, USA Analyzing HPV at the single cell level 33<sup>rd</sup> International Papillomavirus Conference \*Mar 2020 **Invited Plenary Session** Barcelona, Spain Towards Uniform and Consistent Papillomavirus bioinformatics

Oct 2018 32<sup>nd</sup> International Papillomavirus Conference Sydney, Australia

Sydney, Australia

Proposing a new scheme for papillomavirus classification

32<sup>nd</sup> International Papillomavirus Conference

Oct 2018

Non-mammalian viruses provide insights into the evolution of viral oncogenes

Aug 2018	DNA Tumor Virus Meeting
7 tag 2010	Madison, WI
	Viral transcriptional enhancer cis elements are necessary for persistent HPV18 replication
Aug 2018	DNA Tumor Virus Meeting
	Madison, WI
	Fish Associated Viruses Provide Insights into the Evolution of Viral Oncogenes
Jul 2018	American Society for Virology Annual Meeting
	College Park, MD
I.J. 2019	Viral transcriptional enhancer cis elements are necessary for persistent HPV18 replication
Jul 2018	American Society for Virology Annual Meeting College Park, MD
	The Papillomavirus Episteme
Jul 2018	American Society for Virology Annual Meeting
Ju. 2010	College Park, MD
	Fish Associated Viruses Provide Insights into the Evolution of Viral Oncogenes
Jun 2018	Virus Genomics and evolution
	Cambridge, UK
	Fish associated viruses provide insights into the evolution of viral oncogenes
Jul 2017	DNA Tumor Virus Meeting (Winner of best talk award)
	Birmingham, UK
Apr 2017	Genomic plasticity neat the root of the papillomavirus evolutionary tree 56th Annual Meeting of the Arizona/Southern Nevada ASM Branch
Αρι 2017	Tucson, AZ
	Comparative Genomics as a Tool to Understand Papillomavirus Evolution and Disease
Jul 2016	DNA tumor virus meeting
	Montreal Canada
	Viral transcriptional enhancer is required for optimal persistence of an oncogenic
	papillomavirus genome
Jul 2016	DNA tumor virus meeting
	Montreal, Canada
Sep 2015	Molecular archeological evidence in support of the repeated loss of a papillomavirus gene 30 <sup>th</sup> International Papillomavirus Conference (invited plenary seminar)
3ep 2013	Lisbon, Portugal
	PaVE: The Papillomavirus Episteme
Jul 2015	DNA tumor virus meeting
	Trieste, Italy
	Viral transcriptional enhancer is required for optimal persistence of an oncogenic
	papillomavirus genome
Jul 2015	DNA tumor virus Meeting
	Trieste, Italy
Aug 2014	Fish papillomavirus! 29 <sup>th</sup> International Papillomavirus Conference
Aug 2014	Seattle, WA, USA
	Degradation of Human PDZ-Proteins by Human Aphapapillomavirus represents an
	evolutionary adaptation to a novel cellular niche
Jul 2014	DNA tumor virus meeting
	Madison, WI, USA
	Viral transcriptional enhancer is required for optimal persistence of an oncogenic
	papillomavirus genome
Aug 2013	Octet user meeting
	Bethesda, MD, USA  The population of DNA hinding functions.
	The papillomavirus E2 protein; evolutionary analysis of DNA binding functions

Jul 2013 DNA tumor virus meeting

Birmingham, UK

Viral transcriptional enhancer is required for optimal persistence of an oncogenic

papillomavirus

Nov 2012 28<sup>th</sup> International Papillomavirus Conference (invited plenary speaker)

San Juan, Puerto Rico

PaVE: The Papillomavirus Episteme

Jul 2012 DNA tumor virus meeting

Montreal, Canada

Viral transcriptional enhancer is required for optimal persistence of an oncogenic

papillomavirus

Jul 2011 DNA tumor virus meeting

Trieste, Italy

Conservation of a tri-peptide implicated in tethering of viral genomes to host chromosomes

Jul 2010 26<sup>th</sup> International Papillomavirus Conference

Montreal, Canada

Association between hTERT activation by E6 proteins and oncogenic risk

May 2009 25<sup>th</sup> International Papillomavirus Conference

Malmo, Sweden

Macaca fascicularis papillomaviruses (MfPVs)

Nov 2007 24<sup>th</sup> International Papillomavirus Conference

Beijing, China

Identification of unusual E6 and E7 proteins within avian papillomaviruses: cellular

localization, biophysical characterization, and phylogenetic analysis.

Sep 2006 23<sup>rd</sup> International Papillomavirus Conference

Prague, Czech Republic

Genetic characterization of the Capra hircus papillomavirus: a novel close-to-root artiodactyl

papillomavirus

Apr 2005 22<sup>nd</sup> International Papillomavirus Conference

Vancouver, Canada

Isolation and cloning of the raccoon papillomavirus type one by using degenerate

papillomavirus-specific primers

#### Invited Seminars from Outside Institutions

April 2022 Viroholics Seminar Series

Biodesign Institute Tempe, AZ, USA

Cellular determinants of papillomavirus persistence

March 2022 Departmental Seminar

Department Microbiology & Molecular Genetics

Michigan State University East Lansing, MI, USA

Cellular determinants of papillomavirus persistence

\*May 2020 NIH Career Symposium

National Institutes of Health

Bethesda, MD, USA

Aug 2019 Departmental Seminar

Louisiana State University Health Shreveport

Shreveport, LA, USA

Papillomavirus evolution and innate immunity

Apr 2019 Immunotherapy, Vaccines, and Virotherapy symposium

Biodesign Institute Tempe, AZ, USA

Structural Insights into the evolution of viral oncogenes

Dec 2017 Arizona Cancer well-being commons

Phoenix, AZ, USA

Papillomaviruses, persistent infections and cancer

Nov 2017 Joint Virology Symposium

Arizona State University Phoenix, AZ, USA

Comparative Genomics as a Tool to Understand Papillomavirus Evolution and

Disease

Mar 2017 CIDD seminar

Penn State University

Hershey, PA

Comparative Genomics as a Tool to Understand Papillomavirus Evolution and

Disease

Oct 2016 Inaugural CME collaborative seminar

Arizona State University Phoenix, AZ, USA

Comparative Genomics as a Tool to Understand Papillomavirus Evolution and Disease

Mar 2016 University of Arizona

Tucson, AZ, USA

Comparative Genomics as a Tool to Understand Papillomavirus Evolution and Disease

Sep 2015 University of Western Ontario

London, Ontario, Canada

Viral Transcriptional Enhancer is Required for the Optimal Persistence of a Papillomavirus

genome

Jul 2014 Comparative Biomedical Science Day symposium

National Institutes of Health

Bethesda, MD

Papillomavirus diversity and evolutionary history

Jan 2009 Ecole Supérieure de Biotechnologies de Strasbourg

Strasbourg, France

Evolution of the Papillomavirus E6 oncoprotein

#### Invited Seminars at the University of Arizona

Jul 2022 UACC Skin P01 seminar series

Use of 3D organotypic rafts to study skin cancer.

\*Apr 2020 Ag100 Council Meeting

The New Coronavirus

Mar 2018 Mini symposium on virus genomics and phylodynamics

Potential Role of APOBEC Enzymes in papillomavirus evolution

Apr 2017 MicroLunch, Cross Campus Microbiology Focus Group, UA

Papillomaviruses as tools to study evolution

Mar 2017 UA Microbiology Club meeting

Papillomaviruses; replication and cancer

Nov 2016 Head and Neck Cancer collaborative seminar

*In vitro* tools to study the papillomavirus lifecycle

Nov 2016 AZCC, Cancer Biology Program Seminar

Comparative Genomics as a Tool to Understand Papillomavirus Evolution and Disease

Oct 2016 MicroLunch, Cross Campus Microbiology Focus Group, UA

Comparative Genomics as a Tool to Understand Papillomavirus Evolution and Disease

Symposia and Colloquia

Jun 2018 MARC Biomedical Research Colloquium

Tucson, AZ, USA

Structural Insights into the evolution of viral oncogenes

Mar 2017 MARC Biomedical Research Colloquium

Tucson, AZ, USA

Papillomaviruses, replication and cancer

Aug 2008 Microbial Evolution & Genomics NYC Area Symposium

New York, NY, USA

Unusual features of the avian papillomavirus early proteins

# PROFESSIONAL SERVICE and OUTREACH

## National and International Service

Scientific Advisory, Review, and Organizing Committees

2022 - President-Elect (with Dr. Duca)

Arizona and Southern Nevada Branch of the American Society for

Microbiology

June 2022 Ad hoc Reviewer for NIH study section VirA March 2022 Ad hoc Reviewer for NIH study section VirB

2021 - Participant, Early Career Reviewer (ECR) program at the Center for Scientific

Review (CSR), National Institutes of Health

2021 - Recommended eLife's Early-Career Reviewers Pool

2020 – International Committee for the Nomenclature of Viruses (ICTV)

Executive Committee Elected Member

July 2020 33<sup>rd</sup> International Papillomavirus Conference

Session Chair Plenary Session

Barcelona, Spain

Online due to COVID-19

June 2020 American Society for Virology (ASV)

Session Organizer and Chair

Papilloma-, polyoma,- and adenovirus biology

Online due to COVID-19

\*March 2020 33<sup>rd</sup> International Papillomavirus Conference

Session Chair Plenary Session

Barcelona, Spain

Delayed due to COVID-19

2019 Grant Reviewer

Natural Sciences and Engineering Research Council of Canada

Genes, Cells, and Molecules (EG 1501)

2018 – Director, Animal Papillomavirus Reference Center

2018 Abstract Reviewer

ASM Micro 2018

2017 - Chair, International Committee for the Nomenclature of Viruses (ICTV),

Papillomavirus Study Group

2017 Invited Session Chair, DNA tumor virus meeting

Birmingham, UK. July 17<sup>th</sup>-July 21<sup>st</sup>, 2017

2016 Organizer, David J. Heslin memorial Symposium

Regeneron Pharmaceuticals, October 19, 2016

2015 Organizer, David J. Heslin memorial Symposium

Albert Einstein College of Medicine, July 8, 2015

2012 – Ad hoc grant reviewer for Research Foundation - Flanders (Fonds

Wetenschappelijk Onderzoek - Vlaanderen, FWO).

2011 – 2017 Member, International Committee for ICTV papillomavirus study group

Editorial Service

2021 - Associate Editor

Tumour Virus Research

**2019 – 2022 Associate Editor** 

Journal of Medical Virology

2017 – Review Editor

#### Frontiers in Cellular and Infection Microbiology

# Ad Hoc Manuscript review

Veterinary Microbiology, Molecular biology and evolution, Vaccine, PLoS Medicine, Journal of Virological Methods, PLoS Pathogens, Virology, Journal of General Virology, Journal of Virology, Infection, Genetics and Evolution, Journal of Medical Virology, Journal of Molecular Biology, Scientific Reports, Virology Reports, Archives of Virology, Papillomavirus Research, Viruses, Frontiers in Microbiology, PLOS Neglected Tropical Diseases, Journal of Visualized Experiments, Virus Research, Frontiers in Cellular and Infection Microbiology, PeerJ, Journal of Evolutionary Biology, eLife, Cell.

# Professional Societies and Affiliations

2018 –	Member, American Society of Naturalists
2016 –	Member, International Papillomavirus Society
2016 –	Member, American Society for Microbiology
2016 –	Member, American Society for Virology
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2005 – Member, American Association for the Advancement of Science

#### **University of Arizona**

2022	Reviewer, Cancer Biology Pilot Award for Intra-programmatic Collaboration
	University of Arizona Cancer Center
2020	Participant, UA COVID-19 Research Coordination Group
2018 – 2019	Co-organizer, Microlunch Cross Campus Microbiology Focus Group spring
	seminar series, with Dr. V.K. Viswanathan.
2017 – 2018	Member, Arizona ecosystems Genomics Initiative
2017 –	Faculty Mentor, MARC program (Maximizing Access to Research Careers)

#### **UA College of Agriculture and Life Sciences (CALS)**

2022 –	Member, Faculty Council (ACBS representative)
2022	Chair, review committee for New AES Hatch Proposal
	Arizona Experiment Station; Hatch, Animal Health & McIntire Stennis
2021 -	Member, Executive Committee developing the Microbiology Major within
	CALS
2021 -	Member, ACBS Director Search committee
2018	Member, ACBS Director Search committee
2018 –	Member, CALS data science teaching committee

# **UA College of Medicine (COM)**

2020 –	Mentored NSURP students in the lab
2020 -	Invited panelist to "How to effectively mentor online" as part of the NSURP
	program
2016 –	Participated in the Otolaryngology new faculty applicant interviews
2017 –	Participated in recruitment of MD/PhD students

#### **BIO5 Institute**

Summer 2022	Faculty Mentor, KEYS program (Keep Engaging Youth in Science) Michelle Kim
10 Apr 2018	Laboratory Tour/Presentation for Saints Peter and Paul Catholic School
	students interested in science and health related studies

6 Dec 2017	Laboratory Tour/Presentation for Saints Peter and Paul Catholic School
	students interested in science and health related studies.
16 Nov 2017	Laboratory Tour/Presentation for Gale Elementary School students interested
	in science and health related studies.
Summer 2017	Faculty Mentor, KEYS program (Keep Engaging Youth in Science)
	Ms. Gabrielle Russell (2018 Freshman at the University of Arizona)

#### **Graduate programs**

Microbiology

2018 – Member, Microbiology Graduate Program Executive Committee

Graduate Interdisciplinary Program Cancer Biology (CBIO)

2020 - Member, Annual student performance review Committee
 2018 Member, Cancer Biology GIDP APR self-study Committee

# **School of Animal and Comparative Biomedical Sciences (ACBS)**

2022	Chair, ACBS Annual Performance Review Committee
2021 -	Faculty member, Microbial Symbioses and Diversity Research Experience for
	Undergraduates (NSF funded REU)
2021 -	Chair, ACBS Research Focus Group
2021	Member, Hiring Committee IT professional
2020 –	Member, ACBS COVID-19 re-entry Committee
2020 - 2022	Member, ACBS Annual Performance Review Committee
2018	Member, ACBS Space Committee
2017 – 2019	Member, ACBS Diversity & Inclusiveness Committee
2017 – 2019	Member, ACBS IT Advisory Committee

#### **Professional Development**

2022	Inaugural cohort of the UArizona 4IR Translational Research Workshop
2019	Participant, "Alan Alda Center for Communicating Science" Workshop
2018	Participant." Research: Write Winning Grant Proposals" Workshop
	UA's Research Development Services (RDS)
2018	Participant, "Structuring Successful NIH Proposals & Revisions" Workshop
	UA's Research Development Services (RDS)
2017	Participant, Course Level Assessment (online course), UA Office of
	Instructional assessment
2017	Participant, Faculty Learning Communities, UA Academic Affairs
2017	Participant, "University Teaching 101", Johns Hopkins University (through
	Coursera MOOC)
2016	Participant, "NSF career" Workshop, UA's Research Development Services
	(RDS)