

Curriculum Vitae

Jun Won Park, D.V.M., Ph.D., DKCLAM

Assistant Professor, Department of Laboratory Animal Medicine, College of Veterinary Medicine, Seoul National University

Email: labanimal@snu.ac.kr | Website: <https://labanimal.snu.ac.kr/> | Seoul, Korea

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PROFESSIONAL PROFILE

Laboratory animal veterinarian, veterinary pathologist, and Diplomate of the Korean College of Laboratory Animal Medicine (**DKCLAM**), specializing in **laboratory animal medicine** as a professional discipline that integrates veterinary medicine, pathology, animal welfare, disease modeling, experimental design, and specialized education. Academic activities focus on developing next-generation disease models, standardizing necropsy and histopathological phenotyping, applying AI-assisted digital pathology, expanding organoid-based alternatives, and training professionals who can responsibly design, manage, and interpret animal studies. The overarching goal is to **make animal-based research scientifically valid, reproducible, ethically responsible, biologically meaningful, and more closely aligned with real disease.**

CURRENT APPOINTMENTS

2024-Present	Assistant Professor (tenure-track) Department of Laboratory Animal Medicine College of Veterinary Medicine Seoul National University, Seoul, Korea
2024-Present	Director, Laboratory Animal Center College of Veterinary Medicine Seoul National University, Seoul, Korea

EDUCATION & CERTIFICATION

2003-2009	D.V.M., College of Veterinary Medicine, Seoul National University, Seoul, Korea
2009-2011	M.S., Department of Veterinary Pathology, College of Veterinary Medicine, Seoul National University, Seoul, Korea
2011-2014	Ph.D., Department of Veterinary Pathology, College of Veterinary Medicine, Seoul National University, Seoul, Korea
Certification	DKCLAM, Diplomate of Korean College of Laboratory Animal Medicine

ACADEMIC & RESEARCH POSITIONS

2011-2016	Research Staff, Biomolecular Function Research Branch, Research Institute, National Cancer Center, Ilsan, Korea
2016-2017	Senior Researcher, Korea Mouse Phenotyping Center (KMPC), and Postdoctoral Fellow, Seoul National University, Seoul, Korea
2017-2019	JSPS Postdoctoral Fellow, Cancer Research Institute, Kanazawa University, Kanazawa, Japan
2019-2024	Assistant Professor (tenure-track), Division of Biomedical Convergence, College of Biomedical Science, Kangwon National University, Chuncheon, Korea
2024-Present	Assistant Professor (tenure-track), Department of Laboratory Animal Medicine, College of Veterinary Medicine, Seoul National University, Seoul, Korea

HONORS & AWARDS

2024 — Cell Biology Academic Award

Korean Cell Line Research Foundation (KCLRF)

2024 — Selected Member, Young Korean Academy of Science and Technology (Y-KAST)

Korean Academy of Science and Technology (KAST)

RESEARCH FOCUS & EXPERTISE

- **CRISPR-based Somatic Disease Modeling:** Genetically precise, rapid-response in vivo and organoid-integrated models to reconstruct tumor initiation, progression, microenvironmental regulation, and therapeutic vulnerabilities.
 - ✓ **Expertise:** CRISPR-Cas9 somatic genome editing | AAV-mediated in vivo perturbation | genetically engineered mouse models | tumor organoids | in vivo–ex vivo model integration | gastric and intestinal cancer models.
- **Infectious Disease Models and Pandemic Preparedness:** Reproducible animal infection models across species and biosafety contexts, including ABSL-2/3 environments, for studies of host-pathogen interactions and therapeutic/preventive evaluation.
 - ✓ **Expertise:** ABSL-2/3 animal studies | SARS-CoV-2 and influenza models | viral pathogenesis | host-response pathology | multicenter preclinical testing | pathology-based efficacy evaluation.
- **Experimental Pathology and AI-assisted Histopathology:** Standardized necropsy, tissue processing, lesion interpretation, and whole-slide image analysis pipelines that improve objectivity, reproducibility, and data reuse.
 - ✓ **Expertise:** Systematic necropsy | tissue processing | lesion scoring | immunohistochemistry | multiplex imaging | whole-slide image analysis | CNN-based deep learning | AI-assisted quantitative pathology.
- **Comparative and Companion-Animal Translational Medicine:** Modeling strategies that bridge human disease mechanisms, veterinary clinical samples, rodent avatar systems, and companion-animal oncology.
 - ✓ **Expertise:** Comparative oncology | veterinary clinical sample integration | rodent avatar models | companion-animal cancer models | immunotherapy-oriented model development | multi-omics-based target discovery.
- **Nonhuman-primate Pathology and Model Standardization**
Standardization of necropsy, tissue processing, and organ-specific histomorphological assessment in common marmosets to support reproducible nonhuman-primate research.
 - ✓ **Expertise:** Common marmoset necropsy | nonhuman-primate tissue processing | histomorphological reference data | organ-specific pathology assessment | standardized pathology workflows.

LEADERSHIP, FACILITY, & ANIMAL PROGRAM CONTRIBUTIONS

- Director-level experience in laboratory animal center operations, veterinary oversight, facility governance, and alignment of research support with animal welfare and biosafety requirements.
- Leadership in establishing and overseeing institutional rules, operational standards, and review processes for ABSL-2/3 animal research environments supporting emerging infectious disease studies.
- Institutional service in animal care and use governance, including participation in IACUC review, consultation, and oversight activities at Seoul National University and other institutions.
- Professional service supporting laboratory animal medicine and animal research governance through roles in the Korean College of Laboratory Animal Medicine and the Korean Association for Laboratory Animal Science.

TRAINING & EDUCATION

- Provides professional education tracks for laboratory animal specialists, including veterinarian and non-veterinarian pathways.
- Provides training in experimental histopathology and diagnosis, including systematic slide interpretation, lesion quantification, and correlation of pathology with experimental outcomes.
- Integrates molecular pathology, organoid systems, NGS, multiplex imaging, and digital pathology into experimental animal training to connect morphology with mechanism.
- Teaches 3Rs-based refinement, welfare assessment, humane endpoints, and reproducible animal-study design.

ACADEMIC SERVICE

- Executive Secretary, Korean College of **Laboratory Animal Medicine (KCLAM)**
- International Affairs Committee, Korean Association for **Laboratory Animal Science (KALAS)**

SELECTED CONTRIBUTIONS TO SCIENCE

- **Defining driver-gene and microenvironmental mechanisms in gastric carcinogenesis:** Led and co-led studies showing how epithelial driver alterations, including E-cadherin/p53/SMAD4 pathway disruption, WNT signaling, and BCL2-family dependencies shape cancer initiation, metastasis, immune evasion, and therapeutic vulnerability.
- **Building infectious disease animal models and pathology-based readouts:** Contributed to COVID-19 and influenza model development, multicenter preclinical testing, viral pathogenesis studies, and pathology-based interpretation of tissue injury, immune depletion, and host-response heterogeneity.
- **Standardizing necropsy and histomorphology for non-human primate research:** Established standardized necropsy and tissue-processing workflows for common marmosets and generated organ-specific histomorphology resources to support reproducible nonhuman-primate research.
- **Advancing AI-assisted experimental histopathology and preclinical scoring systems:** Developed deep learning-supported lung histopathology and digital pathology strategies to refine conventional lesion scoring, improve reproducibility, and extract biological insight from accumulated whole-slide image datasets.

SELECTED RECENT PUBLICATIONS

A full publication list is available at: <http://labanimal.snu.ac.kr>

Deep learning-assisted, pathogenesis-informed lung histopathology scoring in preclinical mouse models of SARS-CoV-2 and influenza A infection. Hyeok Won An , Hyeon Ah Kim, Tae Hoon Ha , Sang Hyeok Seok , Yu Jin Lee , Na Yun Lee , Gyeong Min Yoon , Yang-Kyu Choi , Ho Young Lee * , Won Gi Yoo * , Je Kyung Seong * and **Jun Won Park***. *Front Immunol.* 2026, in press, *co-corresponding

Nasal epithelial zonation and turbinate morphology in infant common marmosets (*Callithrix jacchus*) Gyeong Min Yoon#, Na Young Lee#, Jina Kwak, Hee Jin Choi, Hyeon Ah Kim, Sang Hyeok Seok, Yu Jin Lee, Na Yun Lee, Su-Hyung Lee, Dae-Yong Kim, **Jun Won Park***, Byeong Cheol Kang*. *Scientific Reports.* 2026 Jan 26;16(1):4561. *co-corresponding

A standardized, high-quality protocol for Necropsy and Tissue Processing of the Common Marmoset (*Callithrix jacchus*) for Histopathological Analysis. Na Young Lee#, Na Yun Lee#, Jina Kwak, Hee Jin Choi, Su-Hyung Lee, Dae-Yong Kim, **Jun Won Park***, Byeong Cheol Kang*. *Star Protocols.* 2026 Jan 20;7(1):104335. *co-corresponding

Entamoeba Muris Provides a Mouse Model for Amoebic Colitis Pathology Characterized by T Cell Associated Colonization. Tae Hun Ha#, Sang Hyeok Seok#, Heok won An, Jong-Wan Kwon, Gyeong Min Yoon, Yu Jin Lee, Na Yun Lee, Hyeon Ah Kim, Won Gi Yoo, Su-Hyung Lee*, **Jun Won Park***. *Scientific Reports.* 2025 Nov 14;15(1):39973. *co-corresponding

Combined inhibition of Bcl-2 family members and YAP induces synthetic lethality in metastatic gastric cancer with RAS/ mutations and low NF2 expression. Jong-Wan Kwon#, Jeong-Seop Oh#, Sang-Hyuk Seok, Hyeok-Won An, Yu Jin Lee, Na Yun Lee, Taehun Ha, Hyeon Ah Kim, Gyeong Min Yoon, Sung Eun Kim, Pu-Reum Oh, Su-Hyung Lee, Dominic C. Voon, Dae-Yong Kim* and **Jun Won Park***, *Molecular Cancer*, 2023, Sep 20;22(1):156. *co-corresponding

Murine COVID-19 lethality is characterized by lymphoid depletion associated with suppressed antigen presenting cell functionality. Yu Jin Lee, Sang Hyeok Seok, Na Yun Lee, Hee Jin Choi, Yoon Woo Lee, Hee Jung Chang, Ji-Yeon Hwang, Da In On, Hyun Ah Noh, Su-Bin Lee, Ho-Keun Kwon, Jun-Won Yun , Jeon-Soo Shin, Jun-Young Seo, Ki Taek Nam, Ho Lee, Ho Young Lee * , **Jun Won Park***, Je Kyung Seong*. *Am J Pathol.* 2023, Jul;193(7):866-882. *co-corresponding

SARS-CoV-2 Omicron variant causes brain infection with lymphoid depletion in a mouse COVID-19 model. Na Yun Lee, Yoon Woo Lee, Seung-Min Hong , Dain On, Gyeong Min Yoon, See-He An, Ki Taek Nam, Jun-Young Seo, Jeon-Soo Shin, Yang-Kyu Choi, Seung Hyun Oh, Jun-Won Yun, Ho Young Lee, Kang-Seuk Choi, Je Kyung Seong, **Jun Won Park***. *Lab Anim Res.* 2023 May 9;39(1):8. *co-corresponding

The loss of epithelial Smad4 drives immune evasion via CXCL1 while displaying vulnerability to combinatorial immunotherapy in gastric cancer. An HW, Seok SH, Kwon JW, Choudhury AD, Oh JS, Voon DC*, Kim DY*, **Jun Won Park***. *Cell Rep.* 2022 Dec 7;41(13):111878. *co-corresponding

A synergistic partnership between IL-33/ST2 and Wnt pathway through Bcl-xL drives gastric cancer stemness and metastasis. Kwon JW, Seok SH, Kim S, An HW, Choudhury AD, Woo SH, Oh JS, Kim JK, Voon DC*, Kim DY*, **Jun Won Park***. *Oncogene*. 2022 Dec 16. *co-corresponding

Smad4 and p53 synergize in suppressing autochthonous intestinal cancer. **Jun Won Park**, Seo MJ, Cho KS, Kook MC, Jeong JM, Roh SG, Cho SY, Cheon JH, Kim HK. *Cancer Med*. 2022 May;11(9):1925-1936.

In vivo CRISPR-Cas9 knockout screening using quantitative PCR identifies thymosin beta-4 X-linked that promotes diffuse-type gastric cancer metastasis. An HW, Kim SY, Kwon JW, Seok SH, Woo SH, Kim DY*, **Jun Won Park***. *Mol Carcinog*. 2021 Sep;60(9):597-606. *co-corresponding

Multi-omics analysis identifies pathways and genes involved in diffuse-type gastric carcinogenesis induced by E-cadherin, p53, and Smad4 loss in mice. **Jun Won Park**, Min-Sik Kim, Dominic C. Voon, Su-Jin Kim, Jengi Bae, et al. *Molecular Carcinogenesis*. 2018 Jul;57(7):947-954.

Sporadic Early-Onset Diffuse Gastric Cancers Have High Frequency of Somatic CDH1 Alterations, but Low Frequency of Somatic RHOA Mutations Compared With Late-Onset Cancers. Soo Young Cho,* **Jun Won Park**,* Yang Liu,* Young Soo Park, Ju Hee Kim, et al. *Gastroenterology*. 2017 Aug;153(2):536-549. *First authors, equally contributed