

Prosper N. Boyaka, PhD
Professor and Chair
Department of Veterinary Biosciences
The Ohio State University, USA

I will be honored to serve another term on the IUIS council and to continue advancing the training of immunologists and strengthening communication among immunologists worldwide. I am a professor of immunology at The Ohio State University, and my research focuses on mucosal immunity and mucosal vaccines.

Although the COVID19 pandemic is largely behind us, the five continents remain interconnected. As a result, emerging or re-emerging pathogens such as monkeypox or the H5N1 influenza virus have the potential to impact multiple countries across different regions. Recent measles outbreaks, primarily in unvaccinated populations, underscore how misinformation and a limited understanding of immunology and immunological tools continue to threaten global health. I have had the privilege of serving on several committees of the American Association of Immunologists, and witnessed firsthand how outstanding leadership and teamwork can advance the various missions of a Scientific society. For over a decade, I have been involved in the training of immunologists from several countries (Brazil, Ethiopia, India, Kenya, Mexico, Tanzania, Thailand and Uganda) through my participation to the One Health Summer Institute organized by the Global One Health initiative (GOHi) of The Ohio State University.

It has been a pleasure to serve on both the Education Committee and the Publications Committee of IUIS and I would like to continue contributing to these important initiatives. I remain committed to helping foster collaborations between the national and regional societies of immunology and improve the training of immunologists, the dissemination of knowledge in the field of immunology, and promote science advocacy.

CURRICULUM VITAE

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CITIZENSHIP

French and US

ACADEMIC DEGREES

- 1989 M.S.
Biochemistry, Université Paris 7, Denis Diderot, France
Organic Chemistry, Université Paris 6, Pierre et Marie Curie, France
- 1994 PhD (October 1994)
Toxicology and Immuno-Toxicology, Université Paris 7, Denis Diderot, France

PROFESSIONAL APPOINTMENTS

- 1988-1989 CNRS U400, Laboratory of Biological Organic Chemistry, Paris with Professor Jean Claude Depezay. Synthesis of carbohydrate-like molecules, Paris, France
- 1990-1994 Predoctoral Fellow and Teaching Assistant, INRA, Laboratory of Human Nutrition and Intestinal Physiology, with Professor Daniel Tomé, Paris, France
- 1995-1998 Postdoctoral Fellow, Immunobiology Vaccine Center, University of Alabama at Birmingham, Birmingham, Alabama, USA.
Mentor: Dr. Jerry R. McGhee,
- 1998-1999 Research Associate, Immunobiology Vaccine Center, University of Alabama at Birmingham, Birmingham, Alabama USA.
- 1999-2006 Research Assistant Professor, Department of Microbiology, University of Alabama at Birmingham, Birmingham, Alabama USA.
- 2006 Visiting Associate Professor. Department of Veterinary Biosciences, The Ohio State University, Columbus, OH, USA
- 2006 Associate Professor, Department of Veterinary Biosciences, The Ohio State University, Columbus, OH, USA
- 2006 Associate Professor, Department of Internal Medicine, The Ohio State University, Columbus, OH, USA
- 2008-present Visiting Professor, AgroParisTech, Paris, France
- 2010-present Professor, Department of Veterinary Biosciences, The Ohio State University, Department of Veterinary Biosciences, Columbus, OH, USA

2017-present **Program Director**, Host Defense and Microbial Biology, Infection Disease Institute (IDI), The Ohio State University, Columbus, OH, USA
 2020-2021 Interim Chair, Department of Veterinary Biosciences, The Ohio State University
 2021-present Chair, Department of Veterinary Biosciences, The Ohio State University

HONORS, AWARDS, AND EDITORIAL MEMBERSHIPS

1990-1993	European Union - Institut National de Recherche Agronomique Fellowship
1994-1996	Institut National de Recherche Agronomique Outstanding Young Scientist Fellowship
2000-2002	Editorial Board Member: <i>Infection and Immunity</i>
2001-2005	Associate Editor: <i>Journal of Immunology</i>
2005-present	Editorial Board Member: <i>Current Immunology Reviews</i>
2011-present	Editorial Board Member: <i>Frontiers in Immunology</i>
2012-present	Academic Editor: <i>Plos One</i>
2012-present	Editorial Board Member (Committee of 100): <i>Vaccine</i>
2013	The American Association of Immunologists (AAI) Distinguished Service Award
2016	Vanguard Award: Association of Immunologists (AAI). Lecture at the 2016 Annual Meeting of AAI
2019	Zoetis Award for Veterinary Research Excellence
2024	Distinguished Fellow American Association of Immunologists
2025	American Association of Advancement of Science Fellow

PROFESSIONAL ACTIVITIES AND SERVICE

Ad Hoc Reviewer

Journal of Immunology, Immunity, Infection and Immunity, Nature Medicine, Proceedings of the National Academy of Science (USA), Mucosal Immunology, Journal of Leukocyte Biology, Journal of Experimental Medicine, Journal of Clinical Investigations, Journal of Allergy and Clinical Investigations, Cell Host and Microbes, Scientific reports, and ... many more.

Scientific Review Boards

National:

National Institutes of Health (NIH) standing Study Sections

2006	NIH, Immunity and Host Defense Study Section (June 2006)
2007	NIH, Immunity and Host Defense Study Section (February 2007)
2009	NIH, Immunity and Host Defense Study Section (January 2009)
2009-13	NIH, Immunity and Host Defense Study Section (Standing Member)
2014	NIH, Immunity and Host Defense Study Section (October 2014)
2016	NIH, Oral, Dental and Craniofacial Sciences Study Section (June 2016)
2016	NIH, Immunity and Host Defense Study Section (October 2016)
2019	NIH, Innate Immunity and Inflammation Study Section (February and October)
2020-2024	NIH, Innate Immunity and Inflammation Study Section (Standing Member)

2022-2024 NIH, Innate Immunity and Inflammation Study Section (Chair)

National Institutes of Health (NIH) Special Emphasis Panel Study Sections and other committees

- * Partnership for Vaccine and Diagnostic Development (February 2004)
- * Cooperative Research Partnerships for Biodefense (October 2007)
- * Exploratory Investigations in Food Allergy (April 2008, November 2009)
- * Immune Defense Mechanisms at the Mucosa (March 2009)
- * Adjuvant Development Program (April 2008)
- * Partnerships in Biodefense (November 2014)
- * ZAI1-AWA-M-J (January 2014)
- * ZAI1-LAR-I-J1 (January 2014)
- * ZRG1-F07-J-20 (February 2015)
- * ZRG1-IMM-J-81 (February 2015)
- * ZRG1-F07-S-20 (June 2015)
- * ZRG1-IMM-S-81 (June 2015)
- * ZRG1-F07-T-20 (February 2016)
- * ZRG1-IMM-T-8 (February 2016)
- * ZAI1-LAR-I-M1 (March 2016)
- * ZRG1-F07-T-20 (January 2017)
- * ZAI1-LAR-I-J1 (January 2017)
- * ZAI1-LG-M-M3 ((May 2017)
- * ZRG1-IMM-T-90 (June 2017)
- * ZAI1-EC-M-C2 (February 2018)
- * ZRG1-IMM-T-57(February 2018)
- * ZRG1-IMM-T-57 (October 2018)
- * ZRG1-IMM-T-57 (February 2020)
- * ZAI1-SB-I-M1 (March 2021)
- * NIH, National Eye Institute (NEI) Board of Scientific Counselors (July 2023)
- * NIH Director's Transformative Research Award (2024-2025)

International:

2008-present	AgroParisTech, France: Nutrition, Immunology and Food Safety
2012-present	European Research Council (ERC)
2017-present	Italian Ministry of Education, Universities and Research (MIUR)
2022-present	ANRS Emerging Infectious Diseases, INSERM, France
2022-Present	Chiba University Synergy Institute for Futuristic Mucosal Vaccine Research and Development (cSIMVa), Japan

Institutional service

2008-2014	Faculty Advisory Committee, Department of Veterinary Biosciences, The Ohio State University
2009-2014	<u>Chair</u> , Faculty Advisory Committee Department of Veterinary Biosciences, The Ohio State University
2010-2016	Senator, The Ohio State University Senate
2012-2015	Senate Rules Committee, The Ohio State University

2012-2015	Graduate Council, The Ohio State University
2014-2015	<u>Chair</u> , Graduate Council, The Ohio State University
2015	<u>Chair</u> , Graduate School Investigation Committee, The Ohio State University
2016-2017	Senate Rules Committee, The Ohio State University
2017-2020	Faculty Hearing Committee, OSU Senate, The Ohio State University
2018-2020	College Investigation Committee, College of Veterinary Medicine, The Ohio State University
2018-2020	College Promotion and Tenure Committee, College of Veterinary Medicine, The Ohio State University
2021	<u>Chair</u> , Postdoctoral Excellence Task Force, The Ohio State University

National / International service

2006 –2012	Member Minority Affairs Committee, American Association of Immunologists
2007	<u>Chair</u> , Block Symposium: Strategies and challenges for mucosal vaccination. Annual Meeting AAI. May 19, 2007. Miami Beach, FL
2009 –2012	<u>Chair</u> , Minority Affairs Committee, American Association of Immunologists
2009-2013	American Association of Immunologists, Annual Meeting Program <u>Chair</u> : Mucosal and Regional Immunology Section
2013	<u>Chair</u> , Block Symposium: The induction and resolution of inflammation in epithelial tissues. Annual Meeting AAI. May 7, 2013. Hoonolulu, Hi.
2014	<u>Chair</u> , Block Symposium: Mucosal immunization. Annual Meeting AAI. May 3, 2014. Pittsburgh, PA.
2014-2017	Member Award Committee, American Association of Immunologists
2017	<u>Chair</u> , Block Symposium: Allergic mechanisms. Annual Meeting AAI, May, 16 2017. Washington, DC.
2018	<u>Chair</u> , Block Symposium: Food allergy and hypersensitivity. Annual Meeting AAI, May 7, 2018. Austin, Tx.
2019	<u>Chair</u> , Block Symposium: Mechanisms of atopic disease. Annual Meeting AAI, May 12, 2019. San Diego, CA
2022-Present	Council Member: International Union of Immunological Societies (IUIS)
2022-Present	Member Education Committee: IUIS
2024-Present	Member Publication Committee: IUIS

ORIGINAL PUBLICATIONS

Portier, A., **P.N. Boyaka**, F. Bougoudogo, M. Dubarry, J.F. Huneau, D. Tomé, A. Dodin and M. Coste. 1993. Fermented milks and increased antibody responses against cholera in mice. *International Journal of Immunotherapy* 4: 207-210.

Boyaka PN, Coste M, Tomé D. 1995. Desialylation of rat intraepithelial lymphocytes: effects on proliferation and dipeptidyl peptidase IV activity. *Adv Exp Med Biol*.371A:133-6. (PMID: 8525889).

- Marinaro M, Staats HF, Hiroi T, Jackson RJ, Coste M, **Boyaka PN**, Okahashi N, Yamamoto M, Kiyono H, Bluethmann H, Fujihashi K, McGhee JR. 1995. Mucosal adjuvant effect of cholera toxin in mice results from induction of T helper 2 (Th2) cells and IL-4. *J Immunol.* 155(10):4621-9. (PMID: 7594461).
- Marinaro M, **Boyaka PN**, Jackson RJ, Finkelman FD, Kiyono H, McGhee JR. 1996. Interleukin-12 alters helper T-cell subsets and antibody profiles induced by the mucosal adjuvant cholera toxin. *Ann N Y Acad Sci.* 795:361-5. (PMID: 8958955).
- Marinaro M, **Boyaka PN**, Finkelman FD, Kiyono H, Jackson RJ, Jirillo E, McGhee JR. 1997. Oral but not parenteral interleukin (IL)-12 redirects T helper 2 (Th2)-type responses to an oral vaccine without altering mucosal IgA responses. *J Exp Med.* 185(3):415-27. (PMCID: PMC2196042).
- Kawabata S, **Boyaka PN**, Coste M, Fujihashi K, Hamada S, McGhee JR, Kiyono H. 1997. A novel alkaline phosphatase-based isolation method allows characterization of intraepithelial lymphocytes from villi tip and crypt regions of murine small intestine. *Biochem Biophys Res Commun.* 241(3):797-802. (PMID:9434789).
- Pascual DW, Coste M, **Boyaka PN**, Kiyono H, McGhee JR. 1997. Spontaneously hypertensive rat: cholera toxin converts suppression to immunity through a Th2 cell-IL-4 pathway. *Am J Physiol.* 273(4 Pt 2): R1509-18. (PMID:9362318).
- Cornet-Boyaka E, Huneau JF, Mordrelle A, **Boyaka PN**, Carbon C, Rubinstein E, Tomé D. 1998. Secretion of sparfloxacin from the human intestinal Caco-2 cell line is altered by P-glycoprotein inhibitors. *Antimicrob Agents Chemother.* 42(10):2607-11. (PMCID: PMC105905).
- Kawabata S, **Boyaka PN**, Coste M, Fujihashi K, Yamamoto M, McGhee JR, Kiyono H. 1998. Intraepithelial lymphocytes from villus tip and crypt portions of the murine small intestine show distinct characteristics. *Gastroenterology.* 115(4):866-73. (PMID: 9753489).
- Nguyen HH, **Boyaka PN**, Moldoveanu Z, Novak MJ, Kiyono H, McGhee JR, Mestecky J. 1998. Influenza virus-infected epithelial cells present viral antigens to antigen-specific CD8+ cytotoxic T lymphocytes. *J Virol.* 72(5):4534-6. (PMCID: PMC109702).
- Lillard JW Jr, **Boyaka PN**, Chertov O, Oppenheim JJ, McGhee JR. 1999. Mechanisms for induction of acquired host immunity by neutrophil peptide defensins. *Proc Natl Acad Sci U S A.* 96(2): 651-6. (PMCID: PMC15191).
- Lillard JW Jr, **Boyaka PN**, Hedrick JA, Zlotnik A, McGhee JR. 1999. Lymphotoxin acts as an innate mucosal adjuvant. *J Immunol.* 162(4):1959-65. (PMID: 9973465).
- Marinaro M*, **Boyaka PN***, Jackson RJ, Finkelman FD, Kiyono H, Jirillo E, McGhee JR. 1999. Use of intranasal IL-12 to target predominantly Th1 responses to nasal and Th2 responses to oral vaccines given with cholera toxin. *J Immunol.* 162(1):114-21. (PMID: 9886376) (*Equal contribution).
- Boyaka PN**, Marinaro M, Jackson RJ, Menon S, Kiyono H, Jirillo E, McGhee JR. 1999. IL-12 is an effective adjuvant for induction of mucosal immunity. *J Immunol.* 162(1):122-8. (PMID: 9886377).

- Naren AP, Di A, Cormet-Boyaka E, **Boyaka PN**, McGhee JR, Zhou W, Akagawa K, Fujiwara T, Thome U, Engelhardt JF, Nelson DJ, Kirk KL. 2000. Syntaxin 1A is expressed in airway epithelial cells, where it modulates CFTR Cl(-) currents. *J Clin Invest*. 105(3):377-86. (PMCID: PMC377449).
- Boyaka PN**, Wright PF, Marinaro M, Kiyono H, Johnson JE, Gonzales RA, Ikizler MR, Werkhaven JA, Jackson RJ, Fujihashi K, Di Fabio S, Staats HF, McGhee JR. 2000. Human nasopharyngeal-associated lymphoreticular tissues. Functional analysis of subepithelial and intraepithelial B and T cells from adenoids and tonsils. *Am J Pathol*. 157(6):2023-35. (PMCID: PMC1885777).
- Lillard JW Jr, **Boyaka PN**, Taub DD, McGhee JR. 2001. RANTES potentiates antigen-specific mucosal immune responses. *J Immunol*. 166(1):162-9. (PMID: 11123289).
- Lillard JW Jr, **Boyaka PN**, Singh S, McGhee JR. 2001. Salmonella-mediated mucosal cell-mediated immunity. *Cell Mol Biol (Noisy-le-grand)*. 47(7):1115-20. (PMID: 11838959).
- Boyaka PN**, Marinaro M, Jackson RJ, van Ginkel FW, Cormet-Boyaka E, Kirk KL, Kensil CR, McGhee JR. 2001. Oral QS-21 requires early IL-4 help for induction of mucosal and systemic immunity. *J Immunol*. 166(4):2283-90. (PMID: 11160283).
- Boyaka PN**, Ohmura M, Fujihashi K, Koga T, Yamamoto M, Kweon MN, Takeda Y, Jackson RJ, Kiyono H, Yuki Y, McGhee JR. 2003. Chimeras of labile toxin one and cholera toxin retain mucosal adjuvanticity and direct Th cell subsets via their B subunit. *J Immunol*. 170(1):454-62. (PMID: 12496431).
- Lillard JW Jr, Singh UP, **Boyaka PN**, Singh S, Taub DD, McGhee JR. 2003. MIP-1alpha and MIP-1beta differentially mediate mucosal and systemic adaptive immunity. *Blood*. 101(3):807-14. Epub 2002 Sep 12. PubMed PMID: 12393512.
- Boyaka PN**, Tafaro A, Fischer R, Leppla SH, Fujihashi K, McGhee JR. 2003. Effective mucosal immunity to anthrax: neutralizing antibodies and Th cell responses following nasal immunization with protective antigen. *J Immunol*. 170(11):5636-43. (PMID: 12759444).
- Ben Nasser I, **Boyaka PN**, Fennira Ben Aissa F, Jeddi M, Tome D. 2003. The ^[173-196] fragment of ovalbumin suppresses ovalbumin-specific rat IgE responses. *Int Immunopharmacol*. 3(12):1569-79. (PMID: 14555282).
- Sfeir RM, Dubarry M, **Boyaka PN**, Rautureau M, Tomé D. 2004. The mode of oral bovine lactoferrin administration influences mucosal and systemic immune responses in mice. *J Nutr*. 134(2):403-9. (PMID: 14747680).
- Singh UP, Singh S, **Boyaka PN**, McGhee JR, Lillard JW Jr. 2004. Granulocyte chemotactic protein-2 mediates adaptive immunity in part through IL-8R beta interactions. *J Leukoc Biol*. 76(6):1240-7. (PMID: 15356099).
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- Ben Nasser I, Fennira-Ben Aïssa F, **Boyaka PN**, Jeddi M, Tome D. 2005. Prior exposure to the carrier regulates rat immune responses to a conjugate vaccine. *Int Immunopharmacol*. 5(11):1633-40. (PMID: 16039553).
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- Fischer R, Debbabi H, Dubarry M, **Boyaka P**, Tomé D. 2006. Regulation of physiological and pathological Th1 and Th2 responses by lactoferrin. *Biochem Cell Biol*. 84(3):303-11. (PMID: 16936801).
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- Fischer R, Tomé D, McGhee JR, **Boyaka PN**. 2007. Th1 and Th2 cells are required for both eosinophil- and neutrophil-associated airway inflammatory responses in mice. *Biochem Biophys Res Commun*. 357(1):44-9. (PMCID: PMC2566706).
- Fischer R, Debbabi H, Blais A, Dubarry M, Rautureau M, **Boyaka PN**, Tome D. 2007. Uptake of ingested bovine lactoferrin and its accumulation in adult mouse tissues. *Int Immunopharmacol*. 7(10):1387-93. (PMID: 17673154).
- Youn HJ, Ko SY, Lee KA, Ko HJ, Lee YS, Fujihashi K, **Boyaka PN**, Kim SH, Horimoto T, Kweon MN, Kang CY. 2007. A single intranasal immunization with inactivated influenza virus and alpha-galactosylceramide induces long-term protective immunity without redirecting antigen to the central nervous system. *Vaccine*. 25(28):5189-98. (PMID: 17548137).
- Rennolds J, **Boyaka PN**, Bellis SL, Cormet-Boyaka E. 2008. Low temperature induces the delivery of mature and immature CFTR to the plasma membrane. *Biochem Biophys Res Commun*. 366(4):1025-9. (PMID: 18096515).
- Fukuiwa T, Sekine S, Kobayashi R, Suzuki H, Kataoka K, Gilbert RS, Kurono Y, **Boyaka PN**, Krieg AM, McGhee JR, Fujihashi K. 2008. A combination of Flt3 ligand cDNA and CpG ODN as nasal adjuvant elicits NALT dendritic cells for prolonged mucosal immunity. *Vaccine*. 26(37):4849-59. (PMCID: PMC2601556).
- Cormet-Boyaka E, Hong JS, Berdiev BK, Fortenberry JA, Rennolds J, Clancy JP, Benos DJ, **Boyaka PN**, Sorscher EJ. 2009. A truncated CFTR protein rescues endogenous DeltaF508-CFTR and corrects chloride transport in mice. *FASEB J*. 23(11):3743-51. (PMCID: PMC2775001).
- Toribio RE, Brown HA, Novince CM, Marlow B, Hernon K, Lanigan LG, Hildreth BE 3rd, Werbeck JL, Shu ST, Lorch G, Carlton M, Foley J, **Boyaka P**, McCauley LK, Rosol TJ. 2010. The

- midregion, nuclear localization sequence, and C terminus of PTHrP regulate skeletal development, hematopoiesis, and survival in mice. *FASEB J.* 24(6):1947-57. (PMCID: PMC3140789).
- Duverger A, Carré JM, Jee J, Leppla SH, Cormet-Boyaka E, Tang WJ, Tomé D, **Boyaka PN**. 2010. Contributions of edema factor and protective antigen to the induction of protective immunity by *Bacillus anthracis* edema toxin as an intranasal adjuvant. *J Immunol.* 185:5943-52. (PMCID: PMC4053574).
- Rennolds J., Butler S, Maloney K, **Boyaka PN**, Davis IC, Knoell DL, Parinandi NL, Cormet-Boyaka E. 2010. Cadmium regulates the expression of the CFTR chloride channel in human airway epithelial. *Toxicol Sci.* 116(1):349-58. (PMCID: PMC2886859).
- Krogh Andersen K., Marcotte H, Alvarez B, **Boyaka PN**, Hammarstrom L. 2011. In situ gastrointestinal protection against anthrax edema toxin by single-chain antibody fragment producing lactobacilli. *BMC Biotechnol.* 11(1):126. (PMCID: PMC3295704).
- Cormet-Boyaka E, Jolivet K, Bonnégarde-Bernard A, Rennolds J, Hassan F, Mehta P, Tridandapani S, Webster-Marketon J, **Boyaka PN**. 2012. An NF- κ B-Independent and Erk1/2-Dependent Mechanism Controls CXCL8/IL-8 Responses of Airway Epithelia Cells to Cadmium. *Toxicol Sci.* 125(2):418-29. (PMCID: PMC3262857).
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- Hassan F, Nuovo GJ, Crawford M, **Boyaka PN**, Kirkby S, Nana-Sinkam SP, Cormet-Boyaka E. 2012. MiR-101 and miR-144 regulate the expression of the CFTR chloride channel in the lung. *PLoS One.* 7(11): e50837. (PMCID: PMC3511328).
- Yasmeen R, Meyers JM, Alvarez CE, Thomas JL, Bonnégarde-Bernard A, Alder H, Papenfuss TL, Benson DM Jr, **Boyaka PN**, Ziouzenkova O. 2013. Aldehyde dehydrogenase-1a1 induces oncogene suppressor genes in B cell populations. *Biochim Biophys Acta.* 1833(12):3218-27. (PMCID: PMC3853404).
- Bonnégarde-Bernard A, Jee J, Fial MJ, Steiner H, DiBartola S, Davis IC, Cormet-Boyaka E, Tomé D, **Boyaka PN**. 2014. Routes of allergic sensitization and myeloid cell IKK β differentially regulate antibody responses and allergic airway inflammation in male and female mice. *PLoS One.* 9(3): e92307. (PMCID: PMC3965427).
- Bonnégarde-Bernard A., Jee j, Fial MJ, Aeffner F, Cormet-Boyaka E, Davis IC, Lin M, Tome D, Karin M, Sun Y, **Boyaka, P.N.** 2014. IKK β in intestinal epithelial cells regulates allergen-specific IgA and allergic inflammation at distant mucosal sites. *Mucosal Immunol.* 7(2):257-67. (PMCID: PMC4053573).
- Ali MM, Newsom DL, González JF, Sabag-Daigle A, Stahl C, Steidley B, Dubena J, Dyszel JL, Smith JN, Dieye Y, Arsenescu R, **Boyaka PN**, Krakowka S, Romeo T, Behrman EJ, White P, Ahmer BM. 2014. Fructose-Asparagine Is a Primary Nutrient during Growth of Salmonella in the Inflamed Intestine. *PLoS Pathog.* 10(6): e1004209. (PMCID: PMC4072780).

- Jee J, Bonnegarde-Bernard A, Duverger A, Iwakura Y, Cormet-Boyaka E, Martin TL, Steiner HE, Bachman RC, **Boyaka PN**. 2015. Neutrophils negatively regulate induction of mucosal IgA responses after sublingual immunization. *Mucosal Immunol*. 8(4):735-45. (PMCID: PMC4481173).
- Xu X, Balsiger R, Tyrrell J, **Boyaka PN**, Tarran R, Cormet-Boyaka E. 2015 Cigarette smoke exposure reveals a novel role for the MEK/ERK1/2 MAPK pathway in regulation of CFTR. *Biochim Biophys Acta*. 1850(6):1224-32. (PMCID: PMC4398641).
- Ngunjiri JM, Ali A, **Boyaka PN**, Marcus PI, Lee CW. 2015 In vivo assessment of NS1-truncated influenza virus with a novel SLSYSINWRH motif as a self-adjuvanting live attenuated vaccine. *PLoS One*;10(3): e0118934. (PMCID: PMC4366013).
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- Quispe Calla NE, Vicetti Miguel RD, **Boyaka PN**, Hall-Stoodley L, Kaur B, Trout W, Pavelko SD, Cherpes TL. 2016. Medroxyprogesterone acetate and levonorgestrel increase genital mucosal permeability and enhance susceptibility to genital herpes simplex virus type 2 infection. *Mucosal Immunol*. 9(6):1571-1583. (PMCID: PMC5035233).
- Hussein H, **Boyaka P**, Dulin J, Bertone A. 2016. Cathepsin K inhibition renders equine bone marrow nucleated cells hypo-responsive to LPS and unmethylated CpG stimulation in vitro. *Comp Immunol Microbiol Infect Dis*. 45:40-7. (PMID: 27012920).
- Sabag-Daigle A, Blunk HM, Gonzalez JF, Steidley BL, **Boyaka PN**, Ahmer BMM. 2016. Use of Attenuated but Metabolically Competent *Salmonella* as a Probiotic to Prevent or Treat *Salmonella* Infection. *Infect Immun*.84(7):2131-2140. (PMCID: PMC4936366).
- Martin TL, Jee J, Kim E, Steiner HE, Cormet-Boyaka E, **Boyaka PN**. 2017. Sublingual targeting of STING with 3'3'-cGAMP promotes systemic and mucosal immunity against anthrax toxins. *Vaccine*. 35(18):2511-2519. (PMCID: PMC5719503).
- Hussein H, **Boyaka P**, Dulin J, Russell D, Smanik L, Azab M, Bertone AL. 2017. Cathepsin K Localizes to Equine Bone In Vivo and Inhibits Bone Marrow Stem and Progenitor Cells Differentiation In Vitro. *J Stem Cells Regen Med*. 13(2):45-53. (PMCID: PMC5786646).
- Comiskey DF Jr, Jacob AG, Sanford BL, Montes M, Goodwin AK, Steiner H, Matsa E, Tapia-Santos AS, Bebee TW, Grieves J, La Perle K, **Boyaka P**, Chandler DS. 2018. A novel mouse model of rhabdomyosarcoma underscores the dichotomy of MDM2-ALT1 function in vivo. *Oncogene*. 37(1):95-106. (PMCID: PMC5756115).
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REVIEWS AND BOOK CHAPTERS

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- Boyaka, P.N.**, J.W. Lillard, Jr., S. Yamamoto and J.R. McGhee. 1999. Mutant enterotoxins and mucosally administered cytokines for safe targeting of Th1- and Th2-type responses by mucosal adjuvants. *In: Induction and Modulation of Gastrointestinal Inflammation*. Kluwer Academic Publishers, Dordrecht, Boston, London pp. 81-93.
- Boyaka, P.N.**, M. Marinaro, J.L. VanCott, I. Takahashi, K. Fujihashi, M. Yamamoto, F.W. van Ginkel, R. Jackson, H. Kiyono and J.R. McGhee. 1999. Strategies for mucosal vaccine development. *American Journal of Tropical Medicine and Hygiene* 60: 35-45.
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- Fujihashi, K., H. Kato, F.W. van Ginkel, T. Koga, **P.N. Boyaka**, R.J. Jackson, R. Kato, Y. Hagiwara, Y. Etani, I. Goma, K. Fujihashi, H. Kiyono and J.R. McGhee. 2001. A revisit of mucosal IgA immunity and oral tolerance. *Acta Odontologica Scandinavica* 59: 301-8.
- Boyaka, P.N.**, R.J. Jackson, F.W. van Ginkel and J.R. McGhee. 2001. Mucosal immunization for sexually transmitted diseases. *Mucosal Immunology Update* 9: 3-11.
- Boyaka, P.N.**, and J.R. McGhee. 2001. Cytokines as adjuvants for the induction of mucosal immunity. *Advanced Drug Delivery Reviews* 51: 71-9.
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- Boyaka, P.N.**, and J.R. McGhee. 2002. Immune defense at mucosal surfaces. *In: Immunotherapy for Infectious Diseases*. Editor: J.M. Jacobson. Humana Press, pp. 39-60.
- Boyaka, P.N.**, A. Tafaro, R. Fischer, K. Fujihashi, E. Jirillo, and J.R. McGhee. 2003. Therapeutic manipulation of the immune system: enhancement of innate and adaptive mucosal immunity. *Current Pharmaceutical Design* 9:1965-1672. (PMID: 12871182)
- Boyaka, P.N.**, J.R. McGhee, C. Czerkinsky, and M. Mestecky. 2005. Mucosal vaccines: an overview. *In: Mucosal Immunology*. 3rd Edition. Mestecky, J., Bienenstock, J., Lamm, M., Mayer, L., McGhee, J.R., and Strober, W. (Eds.). Academic Press, Amsterdam. pp 855-874
- Fujihashi, K., **P.N. Boyaka**, and J.R. McGhee. 2005. Mucosal immune responses. *In: Topley and Wilson's Microbiology and Microbial Infections*. 10th Edition. S.H.E. Kaufmann (Ed.), Edward Arnold Limited, London, United Kingdom. pp 519-555.
- Duverger A., R. Kobayashi, T. Fukuiwa, K. Fujihashi, D. Tome, K. Fujihashi, J. R. McGhee, and **P.N. Boyaka**. 2005. Non-GM1 Ganglioside-Targeting Bacterial Toxins and Derivatives with Mucosal Adjuvant Activity. *Int J Oral Med Sci*. 4; 53-60.
- Fujihashi, K., **P.N. Boyaka**, and J.R. McGhee. 2008. Host defense at mucosal surfaces. *In: Clinical Immunology: Principles and Practice* 3rd edition. Editors: R.R. Rich, T.A. Fleisher,

W.T. Shearer, H.W. Schroeder Jr., A.J. Frew, CM. Weyand. Mosby International Limited. Chapter 19, pp 287-303.

Boyaka, P.N., A. Duverger, E. Cormet-Boyaka, and J.-N. Tournier. 2008. Mucosal immunity against anthrax. *In: Immunity against mucosal pathogens*. Editor: M.Vajdy. Springer Science. Chapter 13, pp367-381.

Boyaka, P.N. 2017. Inducing Mucosal IgA: A Challenge for Vaccine Adjuvants and Delivery Systems. *J Immunol*. 199(1):9-16. (PMCID: PMC5719502).

Boyaka, P.N., and K. Fujihashi. 2018. Host defense at mucosal surfaces. *In: Clinical Immunology: Principles and Practice 5nd edition*. Editors: R.R. Rich, T.A. Fleisher, W.T. Shearer, H.W. Schroeder Weyland. er Jr., A.J. Frew, C.M. Weyland. Elsevier. 2018. Chapter 20, pp 285-298.

Kim E, Z Attia, E. Cormet-Boyaka, and **P.N. Boyaka**. 2020. Toxin-based Modulators for Regulation of Mucosal Immune Responses. *In. Mucosal Vaccines: Innovation for preventing infectious diseases*. Chapter 11, 185-201. (2nd Edition, 2020 Elsevier)

Abu Khweek A, Kim E, Joldrichsen MR, Amer AO, and **Boyaka PN**. 2020. Insights into mucosal innate immune responses in house dust mite-induced allergic asthma. *Front. Immunology*.11:534501. (PMID: 33424827)

GRANT SUPPORT

Active grant support

NIH R01 AI145144 2.4 months effort 01/1/20- 12/31/25

PI: Boyaka, PN

Targeting myeloid cells for regulation of alum-based immunity

This grant will test new approaches for modulation of alum-based immunity and generation of high affinity antibodies in the blood stream and mucosal IgA responses.

NIH R01AI157205 1.2 months effort 04/1/21- 03/31/26

PI: Boyaka, PN (MPI)

Host responses to the pore-forming toxin Listeriolysin O

This grant will address the mechanisms of host cell invasion by Listeriolysin O and host innate responses to cell membrane alteration by this toxin.

NIH R01AI152223 0.6 months effort 08/01/21 - 07/31/26

PD/PI: Rikihisa Y

Co-I: Boyaka, PN

Targeted Prevention of Human Ehrlichiosis

This grant will address identify protein involved in the pathogenesis of Human Ehrlichiosis and their efficacy as vaccine antigen for protection against Ehrlichia infection.

NIH P01AI175399 2.4 months effort 04/10/2024 – 03/31/2029

Role of the Non-canonical Inflammasome in SARS-CoV-2-mediated Pathology and Coagulopathy

PI: Amer, AO

PI: Project 1: Boyaka, PN

Role of CASP-11 in SARS-CoV-2-induced lung pathologies and long-term immune protection

This Program will spearhead efforts to better understand the mechanisms of COVID-19 pathology in different organs and to identify novel drug targets to limit the severity of COVID-19 and the development of Long-COVID.

Past grant support

NIH 1R01 DK101323 2.4 months effort 07/01/15- 06/30/21

PI: Boyaka, PN

Regulation of mucosal IgA and allergic inflammation by intestinal epithelial cells

This grant will address how activation of the non-canonical NFκ-B pathway in intestinal epithelial cells regulate induction of IgA responses in the gut and the migration to distant mucosal sites of regulatory IgA+ B cells capable of limiting allergic inflammation.

Cystic Fibrosis Foundation: Research & Development Program (RDP)

Pilot & Feasibility Studies grant 0.6 months effort 7/1/2019- 6/30/21

PI: Boyaka, PN

Adaptive Immunity in CF: Understanding B Cell Functions

This grant examines how lack of functional CFTR ion channel affects the function of B cells and B cell-mediate adaptive immunity.

NIH R01 AI123661 1.2 months effort 3/3/16- 2/28/21

PI: Boyaka, PN (MPI)

A novel lactic acid bacteria-based norovirus vaccine

This grant will test the ability of a new lactic acid-based vaccine and delivery system to promote protective immunity against enteric infection with noroviruses.

NIH R01 AI107250 1.2 months effort 2/1/14- 1/31/19

Co-Investigator, PI Seveau, S

Multifaceted activity of listeriolysin O during host cell invasion by Listeria

This grant will examine contribution of listeriolysin O (LLO) to the pathogenesis of Listeria and strategies for providing protective immunity via induction of anti-LLO responses.

Millenium Pharmaceuticals Inc. Sudy TAK-981 0.6 months effort 11/03/2016- 11/03/18

Co-Investigator, PI: Kisseberth, W

Exploratory study of the safety and efficacy of TAK-981 in dog with lymphoma

This contract will assess the safety and effects (including on immune cell subsets) of TAK-981 in dog with lymphoma

NIH /NCCAM R01 AT006552 0.6 months effort 05/01/12- 04/30/17

Co-Investigator, PI: Bailey, MT

Role of stress-induced reduction in Lactobacillus reuteri on colonic inflammation

This grant will examine how stress affects the immune responses in the mucosal tissues of the GI tract and implications for resistance to infection by enteric bacteris

NIH R21/33 AI102252 1.2 months effort 7/1/12- 6/30/17

Co-Investigator, PI: Ainslie, KM

Celecoxib derivative: Host cell-directed inhibitors of intracellular pathogens

This grant will explore new delivery approaches for cox2 inhibitor as a mean to improve protection against infection by intracellular bacteria

NIH 1R21HL109969-01A1 0.6 months effort 01/07/13-12/31/15

Co-Investigator, PI: Cormet-Boyaka, E

Role of ion channels in the development of COPD

The main purpose of this application is to test the hypothesis that impairment of the function of ion channels such as CFTR expression lead to the development of COPD.

NIH R01 AI 043197 12/01/08 -11/31/2014

Principal Investigator, 40 % effort

Direct Cost/yr: \$ 250, 000

Alternative approaches for NALT-Based Immunity to Respiratory Pathogens

European Biodefense initiative

08/1/07-07/31/09

PI Subcontract: Prosper Boyaka

Direct Cost/yr: \$ 20, 000

Program Project Director: Lennard Hammarstrom Karolinska Institutet, Sweden

Single chain Ab for passive immunity against anthrax

NIH R01 AI 043197

04/01/03 – 03/31/09

Principal Investigator, 40 % effort

Direct Cost/yr: \$ 250, 000

Molecular Adjuvants for NALT-Based Immunity to Anthrax

NIH R01 AI 18958

08/01/03 - 07/31/06

Co-Investigator, 20 % effort; (PI: Dr. Kohtao Fujihashi)

Cellular and Molecular Mechanisms for Mucosal Immunity

NIH R01 DE12242

04/01/02 – 12/31/06

Investigator, 20 % effort

Direct Cost/yr: \$ 194, 000

A Role for Innate Immunity in Salivary IgA Responses

(PI: Dr. Kohtaro Fujihashi)

NIH – NIAID R01 AI18958

08/01/01 - 07/31/06

Co-Investigator, 20 % Effort

Cellular and Molecular Mechanisms for Mucosal Immunity

(PI: Dr. Jerry McGhee)

NIH 1P01DK 44240

09/1/99 -08/31/04

Co-Investigator/Project 2: Mucosal Immunity in IBD

Chronic Intestinal Inflammation: Mechanisms and Effects

(PI: Dr. Charles O. Elson)

PATENTS

1. QS-21 as Oral Adjuvant for Induction of Mucosal Immunity.
2. Bacterial Sialidases are Effective Mucosal Adjuvants.

3. Methods for inducing mucosal IgA responses by vaccines
(WO 2016/168696 A1; PCT US2016/027891)

TEACHING

- 1999 - 2006. "Cytokine Regulation of Immune Responses". University of Alabama at Birmingham, Cellular and Molecular Biology (CMB) Ph.D. Program
- April 2006. Advanced Veterinary Sciences Gastrointestinal Seminar (Vet Clin Sci 822.02): "Gastrointestinal Immunology". The Ohio State University. One-hour lecture.
- 2007-present "Functional Histology of the Gastrointestinal tract". The Ohio State University CVM Course 5530. (4hours lecture, 2 hours lab)
- 2009-present Advanced Veterinary Sciences Gastrointestinal Seminar (Vet Clin Sci 822.02): "Gastrointestinal Immunology". The Ohio State University. One-hour lecture (offer every other year)
- 2012-2019 Immunology. Micro 5122. The Ohio State University. Two lectures: One lecture on Immunological tolerance and one lecture on Mucosal Immunity
- 2014 Large animal pathology VCS 8844.14: Immunity at mucosal surfaces
- 2014 Immunology MVIMG 8010. The Ohio State University. Fifteen (15) hours: Topics in Mucosal immunology
- 2013-present Global Opportunities in Veterinary Medicine VPM 7760. One-hour lecture.
- 2019 Cellular and Molecular Immunology MEDCIM7010/MICRO7010. Allergy and hypersensitivity. One-hour lecture
- 2019-present Immunology. Micro 5122. The Ohio State University. Course co-leader.

STUDENTS / POSTDOCTORAL TRAINEES MENTORED

GRADUATE STUDENTS

PhD candidates

Salieu M. Abraham (1996-1998) (Co-mentored with Dr. Hiroshi Kiyono)
PhD candidate. The University of Alabama at Birmingham, Biomedical Engineering and The Immunobiology Vaccine Center
Ph.D. 1998. *An Automated Immunofluorescence Microscopy System For The Characterization Of Mucosally Derived Single Cell Immune Responses.*

Romy Fischer (2001-2005)

Ph.D candidate. The University of Alabama at Birmingham and INA Paris-Grignon

PhD December 2005. *Molecular Basis of Cross-Reactive Inflammatory Responses In A Mouse Model of Food Allergy.*

Alexandra Duverger (2003-2007)

Ph.D candidate. AgroParis Tech and The Ohio State University

PhD. December 2007. *Regulation of Mucosal Immunity by Anthrax Edema Toxins Derivatives*

Astrid Bonnégarde-Bernard (2009-2013)

Ph.D candidate. AgroParis Tech and The Ohio State University

PhD. December 2013. *Regulation of allergic immune responses by IKK β in intestinal epithelial cells: Effect on allergic inflammation at distant mucosal sites*

Eunsoo Kim (2014-2018)

Ph.D candidate. The Ohio State University

Innate and microbial regulation of allergic sensitization in the GI tract

Zayed Attia (2015-2019)

Ph.D. candidate. Sadat City University, Sadat City, Egypte

Innate regulation of the adjuvant activity of Alum

Marissa Joldrichsen (2017-2023)

Ph.D candidate. The Ohio State University

Role Paneth cells in gut microbiota and immune homeostasis

Rachel Woodfint (2019-present)

Ph.D candidate. The Ohio State University

Role neutrophils in shaping systemic and mucosal immunity to vaccine

Sungjun Sun (2021-present)

Ph.D candidate. The Ohio State University

CFTR Regulation adaptive immunity to vaccines

Douglas Natoce (2024-present)

Ph.D candidate. The Ohio State University

Neutrophil elastase regulation of immunity against SARS-CoV-2 infection

Master's candidates

Cecilia Vuillard (April-September 2004)

MS candidate: Institut National Agronomique Paris-Grignon/UAB

Elodie Muraz (April-September 2005)

MS candidate: Institut National Agronomique Paris-Grignon/UAB

Edith Crenn (April-September 2005)

MS candidate: Institut National Agronomique Paris-Grignon/UAB

Chloe Manificat (June-December 2006)
MS candidate: Institut National Agronomique Paris-Grignon/OSU

Juliette Trepreau (June-December 2006)
MS candidate: Institut National Agronomique Paris-Grignon/OSU

Jeanne-Marie Carre (June-December 2007)
MS candidate: AgroParisTech (Paris, France) /OSU

Xavier Duportet (June-December 2008)
MS candidate: AgroParisTech (Paris, France) /OSU

Xavier Stzepourginski (June December 2008)
MS candidate: AgroParisTech (Paris, France) /OSU

Caroline Desclee (June-December 2009)
MS candidate: AgroParisTech (Paris, France) /OSU

Morgane Thierry-Mieg (June December 2009)
MS candidate: AgroParisTech (Paris, France) /OSU

Maelle Lenhardt (February - July 2010)
MS candidate: AgroParisTech (Paris, France) /OSU

Fanny Nguyen-Duy (June -December 2010)
MS candidate: AgroParisTech (Paris, France) /OSU

Lauriane Remy (February 2012)
MS candidate: AgroParisTech (Paris, France) /OSU

Tara Martin (2014-2016)
Laboratory Animal resident and MS candidate: OSU

John Rowe (2018-2021)
DVM and MS candidate: OSU

Logan Mazik (2020-2021)
MS candidate: OSU

POSTDOCTORAL TRAINEES

Angela Tafaro (2002-2003).
The University of Alabama at Birmingham: *Mucosal Immunity to Anthrax Toxins*

Sanjay Singh (2007-2008).
The Ohio State University, Veterinary Biosciences: *Alteration of mucosal APCs in obesity*

Junbae Jee (2009-2015).

The University of Alabama at Birmingham: *Mucosal Immunity to Anthrax Toxins*

Eunsoo Kim (2018-2021)

The Ohio State University, Veterinary Biosciences: *Innate and microbial regulation of allergic sensitization in the GI tract.*

Gnesh Yaidiri (2022-Present)

The Ohio State University, Veterinary Biosciences. Mucosal vaccine adjuvants and delivery systems

Marissa Joldrichsen (2023-present)

The Ohio State University, Veterinary Biosciences. Role Paneth cells in gut immune homeostasis and host susceptibility to non-infectious diseases (i.e., obesity and allergy)

OSU VETERINARY STUDENTS SUMMER STUDENT TRAINEES

2009. Lauren Mattei

2011. Jennilee Morrison

2013. Kelsey Cornelius

2016. Drew J. Burnett

OSU UNDERGRADUATE STUDENT TRAINEES

2008-2011	Michael J. Fial
2008-2009	Emily Cason
2011-2012	Stephanie DiBartola
2011	Ian Oglesbee
2013-2014	Ryan Bachman
2015-2017	John Rowe
2017	Marissa Joldrichsen
2018	Rachel Woodfint
2020	Logan Mazik

SELECTED INVITED SEMINARS AND MEETINGS (NATIONAL/INTERNATIONAL)

(Selected since 2012)

2012 Saint-Judes Children Hospital, Memphis, TN, March 2012

2012 University of Michigan, Immunology Program. December 2012.

2013 NIH- National Eye Institute: Molecular Immunology Section. March 2013

2013. Brown University, Department of Molecular Microbiology and Immunology. April 2013

2013. Pennsylvania State University, June 6, 2013.

2015. Duke University, July 29, 2015.

2015. Oklahoma University Health Science Center, December 8, 2015.

2016 Virginia Tech, December 21, 2016

2017 Oklahoma State University, Oklahoma, January 25, 2017

2017 Keystone Symposia: Pattern Recognition Signaling: From Innate Immunity to Disease. March 19-23, 2017. Banff, Alberta, Canada.

2018 FASEB 2018 Summer Research Conference” Nutritional immunology and microbiota: rules of engagement in health and Disease June 24-29, 2018. Leesburg, VA)

2018 Symposium “Infectious Diseases:New approaches in Immunology and Therapies” November 12-14, 2018, Pedro Kourí Institute of Tropical Medicine (IPK), Havana, Cuba.

2019 Symposium “Advances in immunology and therapy of infectious diseases: from Bench to Bed” 2nd edition. Interplay between environmental pollutants, commensal microbes and gut microenvironment regulate the development of allergic diseases. Melia Habana, October 29-31, 2019. Havana, Cuba.

2019. Society of Leukocyte Biology: Tissue Specific Immunity: Translating our Discoveries November 15–18, 2019. Boston, MA.

2021. Virginia Tech, March 2021

2021. Duke University. April 2021

2021. University of Massachusetts, May 2021

2022. University of Iowa, Center for Immunology and Immune-based Diseases. August 2022

2023. Louisiana State University, Lung Conference. September 2023

2023. Society of Mucosal Immunology (SMI) Webinar Series: Mucosal Vaccines. October 2023

2024. Loyola University, Department of Microbiology and Immunology, November 2024

2025. Chiba University, Japan, February 2025

2025. UTMB Galveston, Infectious Disease and Immunity Colloquium at UTMB, Feb 2025

PRESENTATION TO MEETINGS

- Boyaka, P.N.**, M. Coste, and D. Tomé. 1991. Effects of neuraminidase treatment on the proliferative response of the rat intraepithelial lymphocytes. *BSI/SFI Joint Meeting*, October 15-16, 1991, London, United Kingdom.
- Boyaka, P.N.**, M. Coste, and D. Tomé. 1992. Desialylation of rat intraepithelial lymphocytes : effect on the proliferation and dipeptidyl peptidase IV activity. *7th International Congress of Mucosal Immunology*, Prague, Czech Republic. August 16-20, 1992.
- Coste, M., **P.N. Boyaka**, Dubarry M., Tomé. 1993. Desialylation of rat intraepithelial lymphocytes: relation with cell proliferation and gamma interferon production. *Experimental Biology (FASEB) 1993*, March 28 - April 1, New Orleans, USA.
- Boyaka, P.N.**, M. Dubarry, M. Coste, and D. Tomé. 1993. La neuraminidase de *Clostridium perfringens* inhibe la prolifération des IEC-17 et stimule leur production d'IL-6. *Club d'Etude des Cellules Epithéliales Digestives (CECED) 1993*. December 16-17, Nantes, France.
- Boyaka, P.N.**, Dubarry M., Rautureau M., Tomé D. La neuraminidase de *Clostridium perfringens* module les fonctions des cellules épithéliales intestinales. *Journée Francophones de Pathologie Digestives*, 21-23 March 1994, Paris, France.
- Boyaka, P.N.**, Dubarry M., Rautureau M., Tomé D. *Clostridium perfringens* neuraminidase stimulates IL-6 production by the intestinal epithelial cell line, IEC-17. *3rd International Congress on Cytokines 1994*. March 28-30, 1994. Firenze, Italy.
- Boyaka, P.N.**, Dubarry M., Rautureau M., Coste M., Tomé D. 1994. Differential susceptibility of Caco-2 cell line brush border associated enzymatic activities to *Clostridium perfringens* neuraminidase. *Experimental Biology (FASEB) 1994*, April 24-28, Anaheim, California, USA.
- Coste, M., **P.N. Boyaka**, S. Kawabata, K. Fujihashi, M. Yamamoto, J.R. McGhee, H. Kiyono. 1995. Differential expression of IL-7 by epithelial cells isolated from tip and crypt portions of intestinal villi. *Eighth International Congress of Mucosal Immunology*. San Diego, California, July 17-20, 1995.
- Kawabata, S., M. Coste, **P.N. Boyaka**, K. Fujihashi, J.R. McGhee, H. Kiyono. 1995. Unique characterization of Intestinal T cells from tip and crypt epithelium. *Eighth International Congress of Mucosal Immunology*. San Diego, California, July 17-20, 1995.
- Boyaka, P.N.**, K. Fujihashi, J.R. McGhee, S. Kawabata and H. Kiyono. Tip and crypt intestinal epithelial cells express different levels of CD80 and CD86 molecules. *ASBMB/ ASIP/ AAI Joint Meeting*, New Orleans, Louisiana, June 3-6, 1996.
- Marinaro, M., **P.N. Boyaka**, R.J. Jackson, F.D. Finkelman, M.K. Gately, H. Kiyono and J.R. McGhee. Mucosal administration of rIL-12 to mice modulates Th2-type responses

- induced by an oral vaccine. *ASBMB/ ASIP/ AAI Joint Meeting*. New Orleans, Louisiana, June 3-6, 1996.
- Yamamoto, M., J.R. McGhee, H. Kurazono, Y. Shimpuku, **P.N. Boyaka**, M. Marinaro, R.J. Jackson and H. Kiyono. Effect of LT on mucosal immune response in IL-4 knockout mice. *ASBMB/ASIP/AAI Joint Meeting*. New Orleans, Louisiana. June 3-6, 1996.
- Marinaro, M., **P.N. Boyaka**, R.J. Jackson, F.D. Finkelman, H. Kiyono and J.R. McGhee. 1996. IL-12 modulates mucosal and systemic immune responses induced by the mucosal adjuvant cholera toxin. *2nd Interleukin IL-12 Meeting*. New York, New York. November 4-8, 1996.
- Marinaro, M., **P.N. Boyaka**, R.J. Jackson, F.D. Jackson, H. Kiyono, and J.R. McGhee. 1997. Intranasal IL-12 delivery enhances Th2-type while oral IL-12 redirects Th2- to Th1-type responses. *AAAAI/AAI/CIS Joint Meeting*, San Francisco, California, February 21-26, 1997.
- Boyaka, P.N.**, M. Marinaro, R.J. Jackson, F.W. van Ginkel and J.R. McGhee. 1997. Orally delivered saponin-derived QS-21 adjuvant elicits systemic and mucosal antibody responses to co-administered protein antigen. *AAAAI/AAI/CIS Joint Meeting*, San Francisco, California, February 21-26, 1997.
- Lillard, Jr. J.W., **P.N. Boyaka**, M-N. Kweon, M. Yamamoto, O. Chertov, J.J. Oppenheim and J.R. McGhee. 1998. Mucosal administration of defensins with antigen induces Th1- and IL-4-independent Th2-type responses. *Experimental Biology 98*, San Francisco, California, April 18-22, 1998.
- Boyaka, P.N.**, and J.R. McGhee. 1998. Regulatory effects of mucosally administered IL-12. *10th Annual Microbiology Research Retreat*, Chattanooga, Tennessee, November 13-15, 1998.
- Boyaka, P.N.**, C.J. Miller and J.R. McGhee. 1999. Mucosal immunity and HIV infection. *12th Century Gardes Meeting: Retroviruses of Human AIDS and Related Animal Diseases*. Marnes la Coquette (Paris), France, October 25-27, 1999.
- Boyaka, P.N.**, and J.R. McGhee. 1999. Aging, sleep and mucosal immunity. *NCSDR, NHLBI and NIA Joint Workshop on Sleep and Host Defense Mechanisms*. Bethesda, Maryland, August 24-26, 1999.
- Boyaka P.N.**, J.W. Lillard, Jr., R.J. Jackson, F.W. van Ginkel, M. Marinaro, H. Kiyono and J.R. McGhee. 1999. Endogenous IL-12 regulates mucosal immune responses. *10th International Congress of Mucosal Immunology*. Amsterdam, The Netherlands, 27 June–1 July, 1999. Abstract in *Immunology Letters* 69: 75.
- Lillard, Jr. J.W., **P.N. Boyaka**, and J.R. McGhee. 1999. Link between innate and adaptive immunity. *10th International Congress of Mucosal Immunology*. Amsterdam, The Netherlands, 27 June–1 July, 1999. Abstract in *Immunology Letters* 69: 75.
- Marinaro, M., **P.N. Boyaka**, R.J. Jackson, H. Kiyono, and J. R. McGhee. 1999. Mucosal administration of IL-12 to target Th1- or Th2-type responses to mucosal vaccines. *10th International Congress of Mucosal Immunology*. Amsterdam, The Netherlands, 27 June–1 July, 1999. Abstract in *Immunology Letters*. 69: 92.

- Boyaka, P.N.**, D. Zagury, R.J. Jackson, H. Kiyono and J.R. McGhee. 2000. HIV tat regulation of mucosal immunity. 2000. *International Meeting of the Institute of Human Virology*. Baltimore, Maryland, September 10-15, 2000.
- Boyaka, P.N.**, J.W. Lillard, Jr., J. Mestecky and J.R. McGhee. 2000. Impaired mucosal immunity in IL-12 knockout mice. *Immunology 2000*. Seattle, Washington, May 12-16, 2000. Abstract in *The FASEB Journal* 16: 200.7.
- Lillard, J.W., Jr., **P.N. Boyaka**, D.D. Taub, and J.R. McGhee. 2000. RANTES potentiates acquired mucosal immunity. *Immunology 2000*. Seattle, Washington, May 12-16, 2000. Abstract in *The FASEB Journal*. 16: 185.5.
- Boyaka, P.N.**, J.W. Lillard, Jr., R.J. Jackson and J.R. McGhee. 2001. Th1 cell regulation of mucosal IgA responses. *Experimental Biology 2001*. Orlando, Florida, March 31- April 4, 2001. Abstract in *The FASEB Journal* 15: A1043.
- Jackson, R.J., **P.N. Boyaka**, F.W. van Ginkel, and J.R. McGhee. 2001. Intranasal immunization with type 3 polysaccharide and QS-21 or QS-7 affords protection in mice challenged with *S. pneumoniae* by the respiratory route. *Experimental Biology 2001*. Orlando, Florida, March 31-April 4, 2001. Abstract in *The FASEB Journal* 15: A1189.
- Etani, Y., J.R. McGhee, T. Koga, **P.N. Boyaka**, and K. Fujihashi. 2001. Impaired mucosal Th1-type immune responses in aged mice. *Experimental Biology 2001*. Orlando, Florida, March 31- April 4, 2001. Abstract in *The FASEB Journal* 15: A365.
- Boyaka, P.N.**, K. Fujihashi, N.H. Salzman, D. Ghosh, C.L. Bevins and J.R. McGhee. 2002. Mucosal immunity to oral antigens in defensin transgenic mice. *11th International Congress of Mucosal Immunology*, Orlando, Florida, June 16-20, 2002.
- Fischer, R., J.R. McGhee, R.J. Jackson, D. Tomé, and **P.N. Boyaka**. 2002. A mouse model of peanut allergy reveals distinct mechanisms for primary and cross-reactive mucosal responses to food proteins. MIP-1a and MIP-1b differ as nasal adjuvants for mucosal and systemic immunity. *11th International Congress of Mucosal Immunology*, Orlando, Florida, June 16-20, 2002.
- Lillard, J.W., Jr., **P.N. Boyaka**, D.D. Taub, and J.R. McGhee. 2002. MIP-1a and MIP-1b differ as nasal adjuvants for mucosal and systemic immunity. *11th International Congress of Mucosal Immunology*, Orlando, Florida, June 16-20, 2002.
- Jackson, R.J., F.W. van Ginkel, **P.N. Boyaka**, and J.R. McGhee. 2002. Evidence that cholera toxin adjuvant activity is mediated by nerve growth factor. *11th International Congress of Mucosal Immunology*, Orlando, Florida, June 16-20, 2002.
- Boyaka, P.N.** 2003. Molecular approaches to mucosal immunity, safe vaccines and biodefense. *The 3rd International Meeting of the Edward Jenner Institute for Vaccine Research*. 12th - 16th April, 2003. Keble College, Oxford, United Kingdom.
- Boyaka PN**, R. Fischer, M. Marinaro, R.J. Jackson, H. Kiyono, and J.R. McGhee. 2004. Regulation of Mucosal Adaptive Immunity by Bacterial Sialidases. FOCIS. Montreal, Canada.

- Fischer, R., J.R. McGhee, H.L. Vu, Daniel Tome, and **P.N. Boyaka**. 2004. Mucosal routes of peanut sensitization influence lung inflammatory responses to unrelated antigens. FOCIS. Montreal, Canada.
- Tafaro, A., A. Duverger, R. Fischer, K. Kataoka, H. Kiyono, K. Fujihashi, J.R. McGhee, and **P.N. Boyaka**. 2004. Anthrax Lethal Toxin Impairs the Function of Mucosal B and T cells. FOCIS. Montreal, Canada.
- Duverger, A., R.J. Jackson, F.W. vanGinkel, R. Fischer, T. Loughlin, A. Tafaro, S.H. Leppla, K. Fujihashi, H. Kiyono, J.R. McGhee, and **P.N. Boyaka**. 2005. Bacillus anthracis edema toxin acts as an adjuvant for mucosal immune responses to nasally administered antigens. 12th International Congress of Mucosal Immunology, Boston, Massachusetts, June 25-30.
- Fukuiwa, T., R. Kobayashi, S. Sekine, H. Suzuki, K. Kataoka, Y. Kurono, **P.N. Boyaka**, A.M. Krieg, J.R. McGhee, and K. Fujihashi. 2005. A Combination of Flt3 Ligand cDNA And CpG ODN As Mucosal Adjuvants Enhances A Balanced Th1- And Th2-Mediated Ag-Specific Ab Responses. 12th International Congress of Mucosal Immunology, Boston, Massachusetts, June 25-30.
- Mizuno, T., H. Suzuki, K. Kataoka, **P.N. Boyaka**, J. Mega, J.R. McGhee and K. Fujihashi. 2005. Induction of Prolonged Antigen-Specific Mucosal S-IgA Antibody Responses Using Chemokine Expressing Plasmids as Nasal Adjuvants. 12th International Congress of Mucosal Immunology, Boston, Massachusetts, June 25-30.
- Kobayashi, R., H. Suzuki, **P.N. Boyaka**, T. Fukuiwa, S. Sekine, J.R. McGhee and K. Fujihashi. 2005. Induction of CD4⁺ Th1 Cell Independent S-IgA Antibodies With Oral rSalmonella-Tox C. 12th International Congress of Mucosal Immunology. Boston, Massachusetts, June 25-30.
- Boyaka, P.N.**, A. Duverger, W.J. Tang, and S.H. Leppla. 2007. *Bacillus anthracis* edema toxin derivatives: A new class of adjuvants for nasal and transcutaneous vaccines. 13th International Congress of Mucosal Immunology, Tokyo, Japan. 9-12 July 2007. (Invited Oral presentation)
- Fukuiwa, T., S. Sekine, R. Kobayashi, H. Suzuki, K. Kataoka, **P.N. Boyaka**, A.M. Krieg, J.R. McGhee, Y. Kurono, and K. Fujihashi. 2007. Nasal vaccination with new DNA adjuvant elicit NALT dendritic cell activation for prolonged mucosal immunity. 13th International Congress of Mucosal Immunology, Tokyo, Japan. 9-12 July 2007
- Duverger, A., W.J. Tang, S.H. Leppla, and **P.N. Boyaka**. 2007. Differential regulation of mucosal immunity by *Bacillus anthracis* edema toxin and cholera toxin as adjuvants for transcutaneous vaccine. *AAI Annual Meeting*, Miami Beach, FL 18-22 May 2007.
- Duverger, A., S.H. Leppla, W.J. Tang, K. Fujihashi, H. Kiyono, J.R. McGhee, and **P.N. Boyaka**. 2006. *Bacillus anthracis* edema toxin acts as an adjuvant for enhanced immunity to PA and to unrelated vaccine antigens co-administered by the nasal or the transcutaneous route. *AAI Annual Meeting*, Boston Massachusetts 12-16 May 2006.
- Boyaka, P.N.**, A. Duverger, W.J. Tang, and S.H. Leppla. 2008. An edema toxin-based sublingual vaccine promotes immunity against both anthrax toxin and yersinia pestis

- antigens. Experimental Biology 2008 (EB2008) Meeting. San Diego, CA, April 5-8, 2008.
- Boyaka, P.N.**, A. Duverger, W.J. Tang, and S.H. Leppla. 2008. An edema toxin-based sublingual vaccine promotes immunity against both anthrax toxin and yersinia pestis antigens. Experimental Biology 2008 (EB2008) Meeting. San Diego, CA, April 5-8, 2008.
- Papenfuss T.L., S. Singh, C.C. Whitacre, and **P.N. Boyaka**. 2008. Characterization of B16 mFL-expanded DC populations in peripheral and GI lymphoid tissues. Experimental Biology. 2008 (EB2008) Meeting. San Diego, CA, April 5-8, 2008.
- Boyaka, P.N.** 2008. Mucosal immunity and food safety. National Forum on globalization and food safety. Paris, France February 15, 2008.
- Boyaka, P.N.**, S. Iwakura, and D.D. Chaplin. 2009. Role of IL-17 in the mucosal adjuvant activity of cholera toxin for epicutaneous vaccines. 96th AAI Annual Meeting (May 8-12th, 2009), in Seattle, WA.
- Tracey T.L., Tracey L. A. Satoskar, B. Lu, and **P.N. Boyaka**. 2009. PI3Kgamma regulates mucosal immune responses to epicutaneous immunization with cholera toxin as adjuvant. 96th AAI Annual Meeting (May 8-12th, 2009), in Seattle, WA.
- Boyaka, P.N.**, Y. Iwakura and D.D. Chaplin. 2010. Role for IL-17 in the IgA responses to epicutaneous vaccines with enterotoxin-based adjuvants. International Congress of Immunology. August 22-27, 2010. Kobe, Japan.
- Jee J, H. E. Steiner, A. Bonnegarde, M.J. Fial, **P.N. Boyaka** 2010. Macrophage I κ B kinase regulates mucosal adjuvant activity of edema toxin for sublingual vaccines. International Congress of Immunology. August 22-27, 2010. Kobe, Japan.
- Cormet-Boyaka E, J. Rennolds, K. Jolivet, F. Hassan, P. Mehta, S. Tridandapani, J. Webster-Marketon, and **P.N. Boyaka**. 2011. An NF- κ B-independent and Erk1/2-dependent mechanism controls CXCL8/IL-8 responses of airway epithelial cells to cadmium. International Congress of Mucosal Immunology, July 5-9, 2011 Paris, France
- Bonnegarde-Bernard A., J. Jee, H.E. Steiner, M.J. Fial, I.C. Davis, and **P.N. Boyaka**. 2011. Lineage-specific IKK β deficiency reveals a role for intestinal epithelial cells in lung immune response to ingested antigens. International Congress of Mucosal Immunology, July 5-9, 2011 Paris, France
- Bonnegarde-Bernard A. J. Jee, I.C. Davis, and **P.N. Boyaka**. 2012. Intestinal epithelial cells regulate airway allergic inflammation through induction of IgA Abs and IL-17A. American Association of Immunologists, Annual Meeting, May 4-8, 2012. Boston. MA
- Jee J, A. Bonnegarde-Bernard, Y. Iwakura, M. Karin, E. Cormet-Boyaka, and **P.N. Boyaka** 2012. An IKK β -IL-17 Axis fine-tunes Ab responses to sublingual immunization. American Association of Immunologists, Annual Meeting, May 4-8, 2012. Boston. MA

- Bonnegarde-Bernard A., J. Jee, I.C. Davis, and **P.N. Boyaka**. 2013. Intestinal epithelial cells IKK β regulate allergic responses in the skin. American Association of Immunologists, Annual Meeting, May 3-7, 2013. Honolulu, HI
- Jee J, A. Bonnegarde-Bernard, L. Remy, H.E. Steiner, M.J. Fial, and **P.N. Boyaka**. 2013. NALP3 regulates NALT B220⁺ cell-responses to ricin toxoid and induction of secretory IgA Abs. American Association of Immunologists, Annual Meeting, May 3-7, 2013. Honolulu, HI
- Kim E., J. Jee, H.E. Steiner, E. Cormet-Boyaka, and **P.N. Boyaka**. 2014. Chronic exposure to Cadmium alters gut immune homeostasis and innate immunity. American Association of Immunologists, Annual Meeting, May 2-6, 2014. Pittsburgh, PA.
- Jee J, E. Kim, A. Bonnegarde-Bernard, Y. Iwakura, E. Cormet-Boyaka and **P.N. Boyaka**. 2014. Neutrophils negatively regulate induction of mucosal IgA Ab responses to sublingual immunization. American Association of Immunologists, Annual Meeting, May 2-6, 2014. Pittsburgh, PA.
- Jee J, E. Kim, E. Cormet-Boyaka, T.L. Martin, H.E. Steiner, and **P.N. Boyaka**. 2015. Neutrophils regulation of mucosal IgA responses to experimental sublingual vaccines. 9th Vaccine and ISV Congress. October 18-20, 2015. Seoul, Korea.
- Kim E., X. Xu, S.O. Opiyo, H.E. Steiner, B.M. Ahmer, E. Cormet-Boyaka, and **P.N. Boyaka**. 2015. Chronic ingestion of low doses of cadmium alters the gut microbiome and immune homeostasis leading to enhanced allergic sensitization. International Congress of Mucosal Immunology, July 14-18, 2015. Berlin, Germany.
- Kim E., X. Xu, S.O. Opiyo, H.E. Steiner, B.M. Ahmer, E. Cormet-Boyaka, and **P.N. Boyaka**. 2015. Chronic ingestion of low doses of cadmium alters the gut microbiome and immune homeostasis leading to enhanced allergic sensitization. American Association of Immunologists, Annual Meeting, May 8-12, 2015. New Orleans, LA.
- Kim E, Lambert MM, Martin TL, Rowe JC, Steiner HE, Cormet-Boyak E, and Boyaka PN. 2016. Epithelial cell IKK α regulates eosinophil levels in the intestine and severity of allergic responses to ingested allergens. American Association of Immunologists, Annual Meeting, May 13-17, 2016. Seattle, Washington.
- Kim E, Lambert MM, Opiyo SO, Ahmer BM, Cormet-Boyak E, and Boyaka PN. 2017. Differential role of oxidative stress pathways and the microbiota in the development of allergen specific IgE following chronic ingestion of low doses of cadmium. American Association of Immunologists, Annual Meeting, May 12-16, 2017. Washington, DC.
- Kim E, Burnett DJ, Rudinsky AJ, Mori-Akiyama Y, Cormet-Boyak E, and **Boyaka PN**. 2018. Differential role of oxidative stress pathways and the microbiota in Paneth cells regulate allergic sensitization in the gastrointestinal tract. American Association of Immunologists, Annual Meeting, May 4-8, 2018. Austin, Texas.
- E. Kim, A. Bonnegarde-Bernard, S.O. Opiyo, B.M. Ahmer, E. Comet-Boyaka and **P.N. Boyaka**. 2019. Gut oxidative responses by chronic exposure to pollutants enhance IgE production via PGE2-dependent mechanism. American Association of Immunologists, Annual Meeting, May 9-13, 2019. San Diego, California.

M.R. Joldrichsen, E. Kim, Z. Attia, I.C. Davis, E. Comet-Boyaka and **P.N. Boyaka**. 2019. Sox9 deletion in the intestinal epithelium increases house dust mite induced allergic asthma symptoms in mice. American Association of Immunologists, Annual Meeting, May 9-13, 2019. San Diego, California.

Clara Hijano

From: Mary Litzinger <mlitzinger@aai.org>
Sent: Friday, 11 April 2025 19:00
To: IUIS
Cc: Loretta Doan
Subject: AAI Nomination of Prosper Boyaka for 2025-2028 IUIS Council
Attachments: AAI Nomination_Prospers Boyaka.pdf
Categories: Clara

To: IUIS Secretary General João P. B. Viola

AAI enthusiastically nominates AAI member and current IUIS Councilor Prosper Boyaka for the 2025-2028 IUIS Council election. Please find attached a PDF which includes his nomination statement and current CV.

We believe that Dr. Boyaka's knowledge and experience will continue to be beneficial to IUIS in this leadership role. Please let us know if more information is needed.

Best regards,
Mary



Mary T. Litzinger, Ph.D.
Senior Director, Science & Education
she/her

The American Association of Immunologists, Inc.
1451 Rockville Pike, Suite 650
Rockville, MD 20852

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