



**MEDICAL AND  
HEALTH SCIENCES**

# **CURRICULUM VITAE**



**Richard George Douglas**

**MBChB, MD(Thesis), FRACS, FRACP, MRCP**

**NAME:**

Richard George Douglas

**CURRENT POSITION:** Professor, Department of Surgery, The University of Auckland  
Otolaryngologist, North Shore, Auckland City and Gillies Hospitals,  
Auckland, New Zealand

**DEPARTMENT:** Surgery

**FACULTY:** Faculty of Medicine and Health Sciences

**EDUCATIONAL QUALIFICATIONS:**

1983 Bachelor of Human Biology, The University of Auckland  
1986 MBChB, The University of Auckland  
1991 MD, The University of Auckland  
1991 MRCP  
1997 FRACP  
2005 FRACS

**CLINICAL & ACADEMIC ROLES**

1986-87	Auckland, Middlemore Hospitals	House Officer
1988-90	University of Auckland	Research Fellow
1991-92	Southampton General Hospital	Senior House Officer
1993-94	Auckland Hospital	Rheumatology Registrar
1994	Green Lane Hospital	Respiratory Registrar
1995	Alfred Hospital, Melbourne	Registrar, Asthma and Allergy Unit
1996	Alfred Hospital, Melbourne	Clinical Fellow
1996-99	Auckland Hospital	Immunologist & Allergist/General Physician
1996-99	The University of Auckland	Honorary Senior Lecturer in Medicine
1999-2000	Dunedin Hospital Registrar	Department of Surgery
2000-2004	Green Lane, Auckland, North Shore, Starship and Waikato Hospitals	Advanced Trainee in Otolaryngology
2005-2006	Queen Elizabeth and Royal Adelaide Hospitals & Flinders Medical Centre	Rhinology Fellow

**SIGNIFICANT DISTINCTIONS / AWARDS:**

1982 Senior Student, BHB,  
1982 Anatomy Prize, BHB,  
1985 Rotary Prize for Most Distinguished Graduate,  
1985 Surgery Prize, MBChB  
1989 Sir Louis Barnett Prize for Best Presentation by a NZ Surgical Trainee

**PROFESSIONAL SOCIETIES / SERVICE / OTHER ACTIVITIES:**

1997 - Associate member, Australasian Society of Clinical Immunology and Allergy  
2007 - Member, Australian and New Zealand Rhinologic Society (currently President)  
2009 - Member, American Rhinologic Society  
2007 -Member, NZ Society of Otolaryngology Head and Neck Surgery, (currently Chair of Academic Subcommittee)

**Service**

2013-2018 Board member, School of Medicine Foundation  
2013 Member of the Conference Executive, Annual Scientific Meeting, RACS, Auckland  
2011 Convenor Rhinology section, Asia Oceania ORL Conference, Auckland  
2008 Convenor, Australasian Rhinological Society Meeting, Auckland  
2016 Scientific Convenor, Australasian Rhinological Society Meeting, Queenstown  
2020 Convenor, Australasian Rhinological Society Meeting, Melbourne

**Reviewer**

Laryngoscope  
Clinical Otolaryngology  
American Journal of Rhinology and Allergy  
International Forum of Rhinology  
Rhinology  
Clinical Experimental Allergy  
Otolaryngology Head and Neck Surgery

#### **Editorial Board**

Rhinology Journal, Journal of the European Rhinologic Society  
Australasian supplement, Journal of Laryngology and Otology

#### **TEACHING:**

I am co-ordinator of year 5 undergraduate surgical teaching. I organize the teaching syllabus and lecturers for the series of ORL lectures given to the year 3 and 4 medical students. I have revised and updated undergraduate ORL teaching so it is consistent with the re-invigorated medical syllabus. In collaboration with several colleagues we have developed material for online teaching for undergraduate students, so the complete syllabus is available on the University's server. We have received very good feedback from student regarding this online teaching material. I have produced with the help of my research fellows case material and discussion points for the synchronous tutorials

I teach fourth year medical students during their clinical attachments to ORL. I also supervise ORL registrars and since 2009, clinical rhinology fellows, during their sessions with me in the operating theatre and clinics. The one year clinical rhinology fellowship has proved to be popular, and nine post-diploma fellows (from Australia, New Zealand, the United Kingdom, the United States, Singapore and Chile) have completed the program.

#### **RESEARCH SPECIALTIES / CAREER:**

##### **Summary Statement:**

When I took up a Senior Lectureship in the Department of Surgery in 2008 there were no postgraduate students in ORL and my plan was to develop an academic ORL unit. My first two PhD student have completed their degrees. We currently have seven postgraduate students engaged in doctoral level research and two BMedSci(Hons) students. I am currently supervising or co-supervising five doctoral students and supervising the BMedSci(Hons) students. We also have a post-doctoral scientist, research nurse and a histologist working for our group

This increase in personnel has been matched by an increase in peer reviewed manuscripts, presentations, grants and prizes and my research program has attracted over \$2 million in external research funds. We have had 40 peer reviewed publications, and won five prizes for oral presentations. I was invited to contribute chapters to two major ORL textbooks in 2010 and have submitted the manuscripts for both of these, and am currently working on two others. I was invited to contribute a chapter to the European Position Statement on the Management of Sinusitis in 2012 and the International Consensus Statement on Allergy and Rhinology in 2015.

The main focus of my research has been the interaction between the local immunity of the nasal and sinus mucosa and the bacteria which cause chronic rhinosinusitis. This condition is characterized by its intractability despite treatment with prolonged courses of antibiotics. A percentage of the bacterial population is highly resistant to antibiotic therapy, and our finding of bacterial colonies growing within the mucosa itself may explain at least part of this recalcitrance. Chronic rhinosinusitis is a cause of enormous morbidity in the Western world, and increasing efficacy of its treatments would bring very significant benefits. Our research projects are now a mix of laboratory based work with our scientist collaborators in The University of Auckland and clinical trials.

While the scope of my research was initially in rhinology it has subsequently extended into oral medicine, neck and surgery, laryngology and otology. I have established a number of close and productive relationships with several research groups within The University of Auckland. This includes collaborations with the molecular microbiologists from the School of Biological Sciences, immunologists from the Department of Molecular Medicine and Pathology in the Faculty of Medical

and Health Sciences, bioengineers in the Biomedical Engineering Department and the pharmacologists in the Department of Pharmacology.

We also have a number of significant collaborative projects with the Australian Centre for Ecogenomics in the University of Queensland, the Oral Medicine Department of the University of Washington, the Department of Rhinology of Stanford University, and of the Massachusetts Eye and Ear Infirmary.

We are currently involved with clinical testing of new drug delivery devices in association with biomedical companies, and are performing phase 1 trials for 480Biomedical based in Boston, and AFT Pharmaceuticals based in Auckland. I believe that both of these products have significant clinical and commercial potential.

#### Research Publications:

- Johnston, J., Hoggard, M., Biswas, K., Astudillo-García, C., Radcliff, F. J., Mahadevan, M., & Douglas, R. G. (2019). Pathogen reservoir hypothesis investigated by analyses of the adenotonsillar and middle ear microbiota.. *International journal of pediatric otorhinolaryngology*, *118*, 103-109. doi: [10.1016/j.ijporl.2018.12.030](https://doi.org/10.1016/j.ijporl.2018.12.030)
- Biswas, K., Cavubati, R., Gunaratna, S., Hoggard, M., Waldvogel-Thurlow, S., Hong, J., . . . Douglas, R. G. (2019). Comparison of Subtyping Approaches and the Underlying Drivers of Microbial Signatures for Chronic Rhinosinusitis.. *mSphere*, *4*(1). doi: [10.1128/mSphere.00679-18](https://doi.org/10.1128/mSphere.00679-18)
- Leite, S. H. P., Jain, R., & Douglas, R. G. (2019). The clinical implications of computerised fluid dynamic modelling in rhinology.. *Rhinology*, *57*(1), 2-9. doi: [10.4193/rhin18.035](https://doi.org/10.4193/rhin18.035)
- Douglas, R. G., Psaltis, A. J., Rimmer, J., Kuruvilla, T., Cervin, A., & Kuang, Y. (2019). Phase 1 clinical study to assess the safety of a novel drug delivery system providing long-term topical steroid therapy for chronic rhinosinusitis.. *International forum of allergy & rhinology*, *9*(4), 378-387. doi: [10.1002/alr.22288](https://doi.org/10.1002/alr.22288)
- Hoggard, M., Zoing, M., Biswas, K., Taylor, M. W., & Douglas, R. G. (2019). The sinonasal mycobiota in chronic rhinosinusitis and control patients. *RHINOLOGY*, *57*(3), 190-199. doi: [10.4193/Rhin18.256](https://doi.org/10.4193/Rhin18.256)
- Fokkens, W., Desrosiers, M., Harvey, R., Hopkins, C., Mullol, J., Philpott, C., . . . Lund, V. (2019). EPOS2020: development strategy and goals for the latest European Position Paper on Rhinosinusitis. *RHINOLOGY*, *57*(3), 162-168. doi: [10.4193/Rhin17.253](https://doi.org/10.4193/Rhin17.253)
- Johnston, J., McLaren, H., Mahadevan, M., & Douglas, R. G. (2019). Clinical characteristics of obstructive sleep apnea versus infectious adenotonsillar hyperplasia in children.. *International journal of pediatric otorhinolaryngology*, *116*, 177-180. doi: [10.1016/j.ijporl.2018.11.004](https://doi.org/10.1016/j.ijporl.2018.11.004)
- Johnston, J., Hoggard, M., Biswas, K., Astudillo-García, C., Radcliff, F. J., Mahadevan, M., & Douglas, R. G. (2018). Paired analysis of the microbiota between surface tissue swabs and biopsies from pediatric patients undergoing adenotonsillectomy.. *International journal of pediatric otorhinolaryngology*, *113*, 51-57. doi: [10.1016/j.ijporl.2018.07.024](https://doi.org/10.1016/j.ijporl.2018.07.024)
- Johnston, J., Hoggard, M., Biswas, K., Astudillo-García, C., Waldvogel-Thurlow, S., Radcliff, F. J., . . . Douglas, R. G. (2018). The bacterial community and local lymphocyte response are markedly different in patients with recurrent tonsillitis compared to obstructive sleep apnoea.. *International journal of pediatric otorhinolaryngology*, *113*, 281-288. doi: [10.1016/j.ijporl.2018.07.041](https://doi.org/10.1016/j.ijporl.2018.07.041)
- Hoggard, M., Vesty, A., Wong, G., Montgomery, J. M., Fourie, C., Douglas, R. G., . . . Taylor, M. W. (2018). Characterizing the Human Mycobiota: A Comparison of Small Subunit rRNA, ITS1, ITS2, and Large Subunit rRNA Genomic Targets. *FRONTIERS IN MICROBIOLOGY*, *9*, 14 pages. doi: [10.3389/fmicb.2018.02208](https://doi.org/10.3389/fmicb.2018.02208)
- Hoggard, M., Waldvogel-Thurlow, S., Zoing, M., Chang, K., Radcliff, F. J., Wagner Mackenzie, B., . . . Taylor, M. W. (2018). Inflammatory Endotypes and Microbial Associations in Chronic Rhinosinusitis.. *Frontiers in immunology*, *9*, 2065. doi: [10.3389/fimmu.2018.02065](https://doi.org/10.3389/fimmu.2018.02065)
- Johnston, J., McLaren, H., Mahadevan, M., & Douglas, R. G. (2018). Surgical treatment of otitis media with effusion in Maori children.. *ANZ journal of surgery*, *88*(11), 1141-1144. doi: [10.1111/ans.14788](https://doi.org/10.1111/ans.14788)

- Johnston, J. J., & Douglas, R. (2018). Adenotonsillar microbiome: an update.. *Postgraduate medical journal*, 94(1113), 398-403. doi:[10.1136/postgradmedj-2018-135602](https://doi.org/10.1136/postgradmedj-2018-135602)
- Johnston, J., Kinzett-Carran, G., Mahadevan, M., & Douglas, R. G. (2018). Our experience of the necessity of adenoidectomy or adenotonsillectomy at the time of ventilation tube insertion in 11 941 children with middle ear effusion.. *Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery*. doi:[10.1111/coa.13110](https://doi.org/10.1111/coa.13110)
- Jain, R., Hoggard, M., Zoing, M., Jiang, Y., Biswas, K., Taylor, M. W., & Douglas, R. G. (2018). The effect of medical treatments on the bacterial microbiome in patients with chronic rhinosinusitis: a pilot study.. *International forum of allergy & rhinology*. doi:[10.1002/alr.22110](https://doi.org/10.1002/alr.22110)
- Johnston, J., Stretton, M., Mahadevan, M., & Douglas, R. G. (2018). Peritonsillar abscess: A retrospective case series of 1773 patients.. *Clinical otolaryngology : official journal of ENT-UK ; official journal of Netherlands Society for Oto-Rhino-Laryngology & Cervico-Facial Surgery*, 43(3), 940-944. doi:[10.1111/coa.13070](https://doi.org/10.1111/coa.13070)
- Hopkins, C., Hettige, R., Soni-Jaiswal, A., Lakhani, R., Carrie, S., Cervin, A., . . . Rudmik, L. (2018). CHronic Rhinosinusitis Outcome MEasures (CHROME), developing a core outcome set for trials of interventions in chronic rhinosinusitis.. *Rhinology*, 56(1), 22-32. doi:[10.4193/rhin17.247](https://doi.org/10.4193/rhin17.247)
- Vesty, A., Gear, K., Biswas, K., Radcliff, F. J., Taylor, M. W., & Douglas, R. G. (2018). Microbial and inflammatory-based salivary biomarkers of head and neck squamous cell carcinoma. *CLINICAL AND EXPERIMENTAL DENTAL RESEARCH*, 4(6), 255-262. doi:[10.1002/cre2.139](https://doi.org/10.1002/cre2.139)
- Hoggard, M., Nocera, A., Biswas, K., Taylor, M. W., Douglas, R. G., & Bleier, B. S. (2018). The sinonasal microbiota, neural signaling, and depression in chronic rhinosinusitis.. *International forum of allergy & rhinology*, 8(3), 394-405. doi:[10.1002/alr.22074](https://doi.org/10.1002/alr.22074)
- Biswas, K., Wagner Mackenzie, B., Waldvogel-Thurlow, S., Middleditch, M., Jullig, M., Zoing, M., . . . Douglas, R. G. (2017). Differentially regulated host proteins associated with chronic rhinosinusitis are correlated with the sinonasal microbiome. *Frontiers in Cellular and Infection Microbiology*, 7, 11 pages. doi:[10.3389/fcimb.2017.00504](https://doi.org/10.3389/fcimb.2017.00504)
- Johnston, J., Mahadevan, M., & Douglas, R. G. (2017). Incidence and factors associated with revision adenoidectomy: A retrospective study.. *International journal of pediatric otorhinolaryngology*, 103, 125-128. doi:[10.1016/j.ijporl.2017.10.023](https://doi.org/10.1016/j.ijporl.2017.10.023)
- de Paiva Leite, S. H., & Douglas, R. G. (2018). How does sinus surgery affect topical irrigation distribution?. *Current opinion in otolaryngology & head and neck surgery*, 26(1), 21-26. doi:[10.1097/moo.0000000000000429](https://doi.org/10.1097/moo.0000000000000429)
- Wagner Mackenzie, B., Waite, D. W., Hoggard, M., Taylor, M. W., Biswas, K., & Douglas, R. G. (2017). Moving beyond descriptions of diversity: Clinical and research implications of bacterial imbalance in chronic rhinosinusitis. *Rhinology*, 55(4), 291-297. doi:[10.4193/Rhin17.135](https://doi.org/10.4193/Rhin17.135)
- Radcliff, F. J., Clow, F., Mahadevan, M., Johnston, J., Proft, T., Douglas, R. G., & Fraser, J. D. (2017). A potential role for staphylococcal and streptococcal superantigens in driving skewing of TCR Vβ subsets in tonsillar hyperplasia. *Medical Microbiology and Immunology*, 206(4), 337-346. doi:[10.1007/s00430-017-0510-5](https://doi.org/10.1007/s00430-017-0510-5)
- Hardcastle, T., Jain, R., Radcliff, F., Waldvogel-Thurlow, S., Zoing, M., Biswas, K., & Douglas, R. (2017). The in vitro mucolytic effect of xylitol and dornase alfa on chronic rhinosinusitis mucus. *International Forum of Allergy & Rhinology*, 7(9), 889-896. doi:[10.1002/alr.21970](https://doi.org/10.1002/alr.21970)
- Jain, R., Kumar, H., Tawhai, M., & Douglas, R. (2017). The impact of endoscopic sinus surgery on paranasal physiology in simulated sinus cavities. *International Forum of Allergy and Rhinology*, 7(3), 248-255. doi:[10.1002/alr.21879](https://doi.org/10.1002/alr.21879)
- Wood, A. J., Zhou, L., Wilkinson, S., & Douglas, R. G. (2017). Effectiveness of extensive sinus surgery with post-operative medical management for chronic rhinosinusitis. *Journal of Laryngology and Otolaryngology*, 131(S2), S19-S24. doi:[10.1017/S0022215116009361](https://doi.org/10.1017/S0022215116009361)
- Vesty, A., Biswas, K., Taylor, M. W., Gear, K., & Douglas, R. G. (2017). Evaluating the impact of DNA extraction method on the representation of human oral bacterial and fungal communities. *PLoS One*, 12(1), . doi:[10.1371/journal.pone.0169877](https://doi.org/10.1371/journal.pone.0169877)

- Mackenzie, B. W., Waite, D. W., Hoggard, M., Taylor, M. W., Biswas, K., & Douglas, R. G. (2017). Moving beyond descriptions of diversity: clinical and research implications of bacterial imbalance in chronic rhinosinusitis. *RHINOLOGY*, 55(4), 291-297. doi:[10.4193/Rhino17.135](https://doi.org/10.4193/Rhino17.135)
- Hoggard, M., Wagner Mackenzie, B., Jain, R., Taylor, M. W., Biswas, K., & Douglas, R. G. (2017). Chronic rhinosinusitis and the evolving understanding of microbial ecology in chronic inflammatory mucosal disease. *Clinical Microbiology Reviews*, 30(1), 321-348. doi:[10.1128/CMR.00060-16](https://doi.org/10.1128/CMR.00060-16)
- Wagner Mackenzie, B., Waite, D. W., Hoggard, M., Douglas, R. G., Taylor, M. W., & Biswas, K. (2017). Bacterial community collapse: A meta-analysis of the sinonasal microbiota in chronic rhinosinusitis. *Environmental Microbiology*, 19(1), 381-392. doi:[10.1111/1462-2920.13632](https://doi.org/10.1111/1462-2920.13632)
- Jain, R., Hoggard, M., Biswas, K., Zoing, M., Jiang, Y., & Douglas, R. (2017). Changes in the bacterial microbiome of patients with chronic rhinosinusitis after endoscopic sinus surgery. *International Forum of Allergy & Rhinology*, 7(1), 7-15. doi:[10.1002/alf.21849](https://doi.org/10.1002/alf.21849)
- Biswas, K., Chang, A., Hoggard, M., Radcliff, F. J., Jiang, Y., Taylor, M. W., . . . Douglas, R. G. (2017). Toll-like receptor activation by sino-nasal mucus in chronic rhinosinusitis. *Rhinology*, 55(1), 59-69. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/28025987>
- Hoggard, M., Biswas, K., Zoing, M., Wagner Mackenzie, B., Taylor, M. W., & Douglas, R. G. (2017). Evidence of microbiota dysbiosis in chronic rhinosinusitis. *International Forum of Allergy & Rhinology*, 7(3), 230-239. doi:[10.1002/alf.21871](https://doi.org/10.1002/alf.21871)
- Ou, P., Gear, K., Rahnama, F., Thomas, S., Nagappan, R., Kee, D., . . . Douglas, R. (2018). Human papillomavirus and oropharyngeal squamous cell carcinoma: a New Zealand cohort study. *ANZ journal of surgery*, 88(4), E278-E283. doi:[10.1111/ans.13759](https://doi.org/10.1111/ans.13759)
- Wu, J., Jain, R., & Douglas, R. (2017). Effect of paranasal anatomical variants on outcomes in patients with limited and diffuse chronic rhinosinusitis. *Auris, nasus, larynx*, 44(4), 417-421. doi:[10.1016/j.anl.2016.08.009](https://doi.org/10.1016/j.anl.2016.08.009)
- Neeff, M., Biswas, K., Hoggard, M., Taylor, M. W., & Douglas, R. (2016). Molecular microbiological profile of chronic suppurative otitis media. *Journal of Clinical Microbiology*, 54(10), 2538-2546. doi:[10.1128/JCM.01068-16](https://doi.org/10.1128/JCM.01068-16)
- Rudmik, L., Soler, Z. M., Hopkins, C., Schlosser, R. J., Peters, A., White, A. A., . . . Smith, T. L. (2016). Defining appropriateness criteria for endoscopic sinus surgery during management of uncomplicated adult chronic rhinosinusitis: a RAND/UCLA appropriateness study. *RHINOLOGY*, 54(2), 117-128. doi:[10.4193/Rhino16.023](https://doi.org/10.4193/Rhino16.023)
- Kim, R., Chang, G., Hu, R., Phillips, A., & Douglas, R. (2016). Connexin gap junction channels and chronic rhinosinusitis. *International Forum of Allergy & Rhinology*, 6(6), 611-617. doi:[10.1002/alf.21717](https://doi.org/10.1002/alf.21717)
- Jain, R., Waldvogel-Thurlow, S., Darveau, R., & Douglas, R. (2016). Differences in the paranasal sinuses between germ-free and pathogen-free mice. *International Forum of Allergy & Rhinology*, 6(6), 631-637. doi:[10.1002/alf.21712](https://doi.org/10.1002/alf.21712)
- Rudmik, L., Soler, Z. M., Hopkins, C., Schlosser, R. J., Peters, A., White, A. A., . . . Smith, T. L. (2016). Defining appropriateness criteria for endoscopic sinus surgery during management of uncomplicated adult chronic rhinosinusitis: a RAND/UCLA appropriateness study. *International forum of allergy & rhinology*, 6(6), 557-567. doi:[10.1002/alf.21769](https://doi.org/10.1002/alf.21769)
- Rudmik, L., Soler, Z. M., Hopkins, C., Schlosser, R. J., Peters, A., White, A. A., . . . Smith, T. L. (2016). Defining appropriateness criteria for endoscopic sinus surgery during management of uncomplicated adult chronic rhinosinusitis: a RAND/UCLA appropriateness study. *Rhinology*, 54(2), 117-128. doi:[10.4193/rhin16.023](https://doi.org/10.4193/rhin16.023)
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- Kim, R. J., Biswas, K., Hoggard, M., Taylor, M. W., & Douglas, R. G. (2015). Paired analysis of the microbiota of surface mucus and whole-tissue specimens in patients with chronic rhinosinusitis. *International Forum of Allergy & Rhinology*, 5(10), 877-883. doi:[10.1002/alr.21600](https://doi.org/10.1002/alr.21600)
- Jain, R., Kim, R., Waldvogel-Thurlow, S., Hwang, P., Cornish, J., & Douglas, R. (2015). The effects of topical agents on paranasal sinus mucosa healing: a rabbit study. *International Forum of Allergy and Rhinology*, 5(4), 310-317. doi:[10.1002/alr.21470](https://doi.org/10.1002/alr.21470)
- Kim, R. J., Park, L., Wood, A. J., Yin, T., Jain, R., & Douglas, R. G. (2015). Chronic rhinosinusitis and cystic fibrosis: The interaction between sinus bacteria and mucosal immunity. *International Forum of Allergy & Rhinology*, 5(5), 380-385. doi:[10.1002/alr.21431](https://doi.org/10.1002/alr.21431)
- Biswas, K., Hoggard, M., Jain, R., Taylor, M. W., & Douglas, R. G. (2015). The nasal microbiota in health and disease: Variation within and between subjects. *Frontiers in Microbiology*, 6, 9 pages. doi:[10.3389/fmicb.2015.00134](https://doi.org/10.3389/fmicb.2015.00134)
- Wong, W. K., Campbell, R., & Douglas, R. (2014). Manifestations of immunoglobulin G4 related disease in otolaryngology: case reports and review of the literature.. *The Journal of laryngology and otology*, 128 Suppl 2, S10-S15. doi:[10.1017/s0022215114001169](https://doi.org/10.1017/s0022215114001169)
- Tan, N. C. -W., Cooksley, C. M., Roscioli, E., Drilling, A. J., Douglas, R., Wormald, P. -J., & Vreugde, S. (2014). Small-colony variants and phenotype switching of intracellular Staphylococcus aureus in chronic rhinosinusitis.. *Allergy*, 69(10), 1364-1371. doi:[10.1111/all.12457](https://doi.org/10.1111/all.12457)
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- Jain, R., & Douglas, R. (2014). When and how should we treat biofilms in chronic sinusitis?. *Current opinion in otolaryngology & head and neck surgery*, 22(1), 16-21. doi:[10.1097/moo.000000000000010](https://doi.org/10.1097/moo.000000000000010)
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- Callejas, C. A., & Douglas, R. G. (2013). Fungal rhinosinusitis: what every allergist should know.. *Clinical and experimental allergy : journal of the British Society for Allergy and Clinical Immunology*, 43(8), 835-849. doi:[10.1111/cea.12118](https://doi.org/10.1111/cea.12118)
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### Book Chapters

1. Douglas R, Wormald PJ. Assisting in otolaryngology and head and neck surgery. In: Assisting operative procedures. Editor Whalan C. Cambridge University Press, 2006.
2. Douglas RG, Wood AJ. Contribution of systemic diseases. In: Endoscopic Sinus Surgery: Optimizing Outcomes and Avoiding Failures. Editors Schlosser R and Harvey R. Plural Publications, 2012
3. Complications following surgery of the septum and turbinates. Douglas R, Wood A. In: Bernal-Sprekelsen M et al (Eds). Complications in Otolaryngology-Head & Neck Surgery: Prevention and Management. Stuttgart, Germany: Thieme Medical Publishers. 2013
4. Postnasal Drip. Campbell R, Douglas R. In: Symptom-Oriented Otolaryngology- Head and Neck Surgery Volume 2, 50-69. 2017
5. Postoperative care and complications of orbital surgery. Rajak S, Douglas RG, Psaltis AJ. Endoscopic Surgery of the Orbit. Anatomy, Pathology, and Management Benjamin S. Bleier , Susan Freitag, Ray Sacks (Eds) Thieme Publishers, New York, Stuttgart. 2018
6. Radiological imaging of the paranasal sinuses. Yin T and Douglas R. In: Rhinology and Allergy Clinical Reference Guide. Brent Senior and Yvonne Chan (Eds). Plural Publishing 2018
7. Rhinology - microbiology of CRS

### PhD Student Supervision

Primary supervisor Raymond Kim. *Development of novel topical therapies for chronic rhinosinusitis*. Funded by GLREF PhD Scholarship and the Bryan Jones Scholarship. 2012 - 2015

Co-supervisor Andrew Wood. *Role of bacterial and fungal biofilms in the pathogenesis of chronic rhinosinusitis*. graduated May 2013. Funding body - Garnett Passe and Rodney Williams Memorial Foundation. Salary/Project Grant. 2009-2013, who win the following prizes

Surgical Research Society of Australasia Annual Scientific Meeting  
 Oral Presentation Travel grant prize 2011  
 New Zealand Microbiological Society Annual Meeting Student Oral  
 Presentation First Prize 2010  
 Auckland District Health Board Young Investigator of the Year Award 2010  
 Winner Oral Category The University of Auckland Post Graduate Research Expo 2011

HealthX (Faculty-wide student conference), The University of Auckland 2nd prize Oral Clinical Category 2010

Primary supervisor Ravi Jain. *The effect of corticosteroids on the microbiology and immunology of CRS*. Funding - RACS Research Scholarship. 2013-2016

Co-supervisor Michael Hoggard *Elucidating the host-microbe interplay in mucosal degradation associated with chronic rhinosinusitis*. 2014-

Primary supervisor Brett Wagner *Role of the microbiome in pathogenesis of chronic rhinosinusitis*. 2013-

Primary supervisor Anna Vesty. *The effect of oral microbiota on the pathogenesis of radiotherapy-induced oral mucositis*. 2014-

Primary supervisor James Johnston *Determination and manipulation of the microbiome in adenotonsillar hyperplasia* 2016-

Primary supervisor Joey Siu *Drug delivery to the paranasal sinuses* 2017-

### **MD Student Supervision**

Primary supervisor for Dr Jacqui Allen. *Type 1 collagen and TGF- $\beta$  modulation in airway stenosis using halofuginone* 2012-

Primary supervisor for Dr Michel Neeff. *Microbiology of chronic middle ear disease* 2013 -

### **BMedSci(Hons) Student Supervision**

Primary supervisor for Tary Yin, who submitted on 12 November, 2012. *The interaction between bacteria and mucosal immunity in chronic rhinosinusitis*.

Primary supervisor for Peter Ou, who submitted on 11 November, 2014. *The role of HPV in oropharyngeal carcinoma*. (awarded first class honours, and won the prize for the best BMedSci(Hons) presentation)

Primary supervisor for Epenesa Iosua, who submitted on 12 November, 2015. *Role of HPV in squamous cell carcinoma of the head and neck*

Primary supervisor for Timothy Hardcastle, who submitted on 12 November, 2015. *Investigation of novel anti-biofilm agents*. (won the prize for the best BMedSci(Hons) presentation)

Primary supervisor for Raewyn Cavubati, who submitted on 13 November, 2016. *The role of tight junctions in the pathogenesis of chronic rhinosinusitis*

Primary supervisor for Jae Jeong, who submitted on 11 November, 2016. *Chronic rhinosinusitis: The optimisation of intranasal devices in postoperative sinuses* (awarded first class honours)

Primary supervisor for Shan Gunaratna who submitted November, 2017. *The epithelial barrier in CRS*

Primary supervisor for Brian Yeom who submitted November, 2017. *The quantification and optimisation of intranasal fluticasone propionate deposition in a post-operative setting*

### **Research Grants / Funding:**

2019-2021 Determination of longitudinal changes of the sinonasal microbiome approx NZD \$245,000 Academic Surgeon-Scientist Research Scholarship (Tary Yin)

2018-2020 Drug delivery to the paranasal sinuses approx. NZD \$245,000 Academic Surgeon-Scientist Research Scholarship (Joey Siu)

2017-2019 Determination and manipulation of the microbiome in adenotonsillar hyperplasia approx. NZD \$245,000 Academic Surgeon-Scientist Research Scholarship (James Johnston)

2016 HRC scholarship to Ravi Jain to complete his PhD research

2015 Investigation of the role of the oral microbiome in the pathogenesis of radiation induced mucositis  
Auckland Hospital Research Fund  
\$30,000

2015-2017 Role of bacterial microbiome in the pathogenesis of chronic rhinosinusitis  
Garnett Passe and Rodney Williams Memorial Foundation  
A\$184,000

2014-2016 Metagenomic studies of the bacterial microbiome in the pathogenesis of chronic rhinosinusitis  
Garnett Passe and Rodney Williams Memorial Foundation  
A\$188,000

2011-2014 Green Lane Research and Educational Fund Board  
Double-blind randomised control pilot study of rifampicin and doxycycline for the treatment of chronic rhinosinusitis  
\$12,133

2011-2013 Green Lane Research and Educational Fund Board  
Staphylococcus aureus in recalcitrant chronic rhinosinusitis.  
\$20,000

2010-2012 School of Medicine Foundation  
Development of novel topical therapies for chronic rhinosinusitis  
\$50,000

2008-2012 Role of bacterial and fungal biofilms in the pathogenesis of chronic rhinosinusitis  
Green Lane Research and Educational Fund Board  
\$48,000

2009-2012 Role of bacterial and fungal biofilms in the pathogenesis of chronic rhinosinusitis  
Garnett Passe and Rodney Williams Memorial Foundation  
A\$255,000

2012-2013 Mucosal response to intramucosal bacteria - Senior fellowship for Dr Raymond Kim  
Green Lane Research and Educational Fund Board  
\$160,000

2013-2015 The mucosal response to corticosteroids in chronic sinusitis  
Garnett Passe and Rodney Williams Memorial Foundation  
A\$286,500

2013-2014 Maurice Wilkins Foundation  
Analysis of microbiome in CRS  
\$7,500

2013-2014 Maurice Wilkins Foundation  
Identification of MAIT cells in CRS  
\$6,500