

# Stanford

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## Tulio Valdez

Associate Professor of Otolaryngology (Pediatric) and, by courtesy, of Pediatrics at the Lucile Salter Packard Children's Hospital

Otolaryngology - Head & Neck Surgery Divisions

### Bio

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#### BIO

Dr. Tulio A Valdez is a surgeon scientist born and raised in Colombia with a subspecialty interest in Pediatric Otolaryngology. He attended medical school at Universidad Javeriana in Bogota Colombia before undertaking his residency in Otolaryngology, Head and Neck Surgery in Boston. He completed his Pediatric Otolaryngology Fellowship at Texas Children's Hospital (2007), Houston and obtained his Master's in Clinical and Translational Research at the University of Connecticut.

Clinically, Dr. Valdez has an interest in airway surgery and swallowing disorders. He has a special interest in the management of sinus disease in cystic fibrosis. Dr. Valdez has co-authored one textbook and numerous book chapters and scientific manuscripts. Dr. Valdez continues his clinical research in these areas, particularly with a focus on aerodigestive disorders.

Scientifically, Dr. Valdez has developed various imaging methods to diagnose otitis media and cholesteatoma a middle ear condition that can lead to hearing loss. He was part of the Laser Biomedical Research Center at Massachusetts Institute of Technology. His research includes novel imaging modalities to better diagnose ear infections one of the most common pediatric problems. His research has now expanded to include better intraoperative imaging modalities in pediatric patients to improve surgical outcomes without the need for radiation exposure.

Dr. Valdez believes in the multi-disciplinary collaborations to tackle medical problems and has co-invented various medical devices and surgical simulation models.

#### ACADEMIC APPOINTMENTS

- Associate Professor - Med Center Line, Otolaryngology - Head & Neck Surgery Divisions
- Associate Professor - Med Center Line (By courtesy), Pediatrics - Operations
- Member, Bio-X
- Member, Maternal & Child Health Research Institute (MCHRI)

#### PATENTS

- Tulio Valdez. "United States Patent 9986915 Systems and methods for a short wave infrared device", Jun 8, 2018

#### LINKS

- <https://med.stanford.edu/ohns/research/labs/tulio-valdez-lab.html>: <https://med.stanford.edu/ohns/research/labs/tulio-valdez-lab.html>

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Raana Kashfi Sadabad

#### Postdoctoral Research Mentor

Raana Kashfi Sadabad

## Publications

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### PUBLICATIONS

- **Integration of diffraction phase microscopy and Raman imaging for label-free morpho-molecular assessment of live cells** *JOURNAL OF BIOPHOTONICS*  
Pandey, R., Zhou, R., Bordett, R., Hunter, C., Glunde, K., Barman, I., Valdez, T., Finck, C.  
2019; 12 (4)
- **Biochemical Changes in Irradiated Oral Mucosa: A FTIR Spectroscopic Study.** *Biosensors*  
Ukkonen, H., Vuokila, S., Mikkonen, J. J., Dekker, H., Schulten, E. A., Bloemena, E., Koistinen, A., Valdez, T. A., Kullaa, A. M., Singh, S. P.  
2019; 9 (1)
- **Biochemical Changes in Irradiated Oral Mucosa: A FTIR Spectroscopic Study** *BIOSENSORS-BASEL*  
Ukkonen, H., Vuokila, S., Mikkonen, J. W., Dekker, H., Schulten, E. M., Bloemena, E., Koistinen, A., Valdez, T. A., Kullaa, A. M., Singh, S.  
2019; 9 (1)
- **Integration of Diffraction Phase Microscopy and Raman Imaging for Label-free Morpho-molecular Assessment of Live Cells.** *Journal of biophotonics*  
Pandey, R., Zhou, R., Bordett, R., Hunter, C., Glunde, K., Barman, I., Valdez, T., Finck, C.  
2018: e201800291
- **Teaching a tracheotomy handoff tool to pediatric first responders** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Murray, N., Valdez, T. A., Hughes, A. L., Kavanagh, K. R.  
2018; 114: 120–23
- **Initial findings of shortwave infrared otoscopy in a pediatric population.** *International journal of pediatric otorhinolaryngology*  
Valdez, T. A., Carr, J. A., Kavanagh, K. R., Schwartz, M., Blake, D., Bruns, O., Bawendi, M.  
2018; 114: 15–19
- **Teaching a tracheotomy handoff tool to pediatric first responders.** *International journal of pediatric otorhinolaryngology*  
Murray, N., Valdez, T. A., Hughes, A. L., Kavanagh, K. R.  
2018; 114: 120–23
- **Initial findings of shortwave infrared otoscopy in a pediatric population** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Valdez, T. A., Carr, J. A., Kavanagh, K. R., Schwartz, M., Blake, D., Bruns, O., Bawendi, M.  
2018; 114: 15–19
- **3-Dimensional printed haptic simulation model to teach incomplete cleft palate surgery in an international setting** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Cote, V., Schwartz, M., Vargas, J., Canfarotta, M., Kavanagh, K. R., Hamdan, U., Valdez, T. A.  
2018; 113: 292–97
- **Differential diagnosis of otitis media with effusion using label-free Raman spectroscopy: A pilot study** *JOURNAL OF BIOPHOTONICS*  
Pandey, R., Zhang, C., Kang, J. W., Desai, P. M., Dasari, R. R., Barman, I., Valdez, T. A.  
2018; 11 (6)
- **iPhone otoscopes: Currently available, but reliable for tele-otoscopy in the hands of parents?** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Shah, M., Sohal, M., Valdez, T. A., Grindle, C. R.

2018; 106: 59–63

- **Using simulators to teach pediatric airway procedures in an international setting** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Schwartz, M. A., Kavanagh, K. R., Frampton, S. J., Bruce, I. A., Valdez, T. A.  
2018; 104: 178–81
- **Differential diagnosis of otitis media with effusion using label-free Raman spectroscopy: A pilot study.** *Journal of biophotonics*  
Pandey, R., Zhang, C., Kang, J. W., Desai, P. M., Dasari, R. R., Barman, I., Valdez, T. A.  
2017
- **Pediatric laryngeal simulator using 3D printed models: A novel technique** *LARYNGOSCOPE*  
Kavanagh, K. R., Cote, V., Tsui, Y., Kudernatsch, S., Peterson, D. R., Valdez, T. A.  
2017; 127 (4): E132-E137
- **Tracheostomy for Severe Pediatric Obstructive Sleep Apnea: Indications and Outcomes.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Rizzi, C. J., Amin, J. D., Isaiah, A., Valdez, T. A., Jeyakumar, A., Smart, S. E., Pereira, K. D.  
2017: 194599817702369-?
- **Panel 8: Report on Recent Advances in Molecular and Cellular Biochemistry.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*  
Preciado, D., Granath, A., Lin, J., Val, S., Kurabi, A., Johnston, N., Vijayasekaran, S., Valdez, T., Depireux, D., Hermansson, A.  
2017; 156 (4\_): S106-S113
- **Pediatric laryngeal simulator using 3D printed models: A novel technique.** *Laryngoscope*  
Kavanagh, K. R., Cote, V., Tsui, Y., Kudernatsch, S., Peterson, D. R., Valdez, T. A.  
2017; 127 (4): E132-E137
- **Noninvasive Monitoring of Blood Glucose with Raman Spectroscopy** *ACCOUNTS OF CHEMICAL RESEARCH*  
Pandey, R., Paidi, S. K., Valdez, T. A., Zhang, C., Spegazzini, N., Dasari, R. R., Barman, I.  
2017; 50 (2): 264-272
- **Using the shortwave infrared to image middle ear pathologies** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Carr, J. A., Valdez, T. A., Bruns, O. T., Bawendi, M. G.  
2016; 113 (36): 9989-9994
- **Volume estimation of tonsil phantoms using an oral camera with 3D imaging** *BIOMEDICAL OPTICS EXPRESS*  
Das, A. J., Valdez, T. A., Vargas, J. A., Saksupapchon, P., Rachapudi, P., Ge, Z., Estrada, J. C., Raskar, R.  
2016; 7 (4): 1445-1457
- **A short-wave infrared otoscope for middle ear disease diagnostics** *PHOTONIC THERAPEUTICS AND DIAGNOSTICS XII*  
Carr, J. A., Valdez, T. A., Bruns, O. T., Bawendi, M. G.  
2016; 9689
- **Discerning the differential molecular pathology of proliferative middle ear lesions using Raman spectroscopy** *SCIENTIFIC REPORTS*  
Pandey, R., Paidi, S. K., Kang, J. W., Spegazzini, N., Dasari, R. R., Valdez, T. A., Barman, I.  
2015; 5
- **Nasal vestibulitis due to targeted therapies in cancer patients** *SUPPORTIVE CARE IN CANCER*  
Ruiz, J. N., Belum, V. R., Boers-Doets, C. B., Kamboj, M., Babady, N. E., Tang, Y., Valdez, T. A., Lacouture, M. E.  
2015; 23 (8): 2391-2398
- **Detecting tympanostomy tubes from otoscopic images via offline and online training** *COMPUTERS IN BIOLOGY AND MEDICINE*  
Wang, X., Valdez, T. A., Bi, J.  
2015; 61: 107-118
- **Multi-color reflectance imaging of middle ear pathology in vivo** *ANALYTICAL AND BIOANALYTICAL CHEMISTRY*  
Valdez, T. A., Spegazzini, N., Pandey, R., Longo, K., Grindle, C., Peterson, D., Barman, I.  
2015; 407 (12): 3277-3283

- **Current Trends in Perioperative Antibiotic Use: A Survey of Otolaryngologists** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*  
Valdez, T. A., Marvin, K., Bennett, N. J., Lerer, T., Nolder, A. R., Buchinsky, F. J.  
2015; 152 (1): 63-66
- **Development of the Connecticut Airway Risk Evaluation (CARE) system to improve handoff communication in pediatric patients with tracheotomy.** *JAMA otolaryngology-- head & neck surgery*  
Lawrason Hughes, A., Murray, N., Valdez, T. A., Kelly, R., Kavanagh, K.  
2014; 140 (1): 29-33
- **Bi modal Approach Using Spectroscopy and Digital Imaging to assist Otitis Media Diagnosis** *2014 40TH ANNUAL NORTHEAST BIOENGINEERING CONFERENCE (NEBEC)*  
Longo, K., Peterson, D., Valdez, T. A.  
2014
- **Development of the Connecticut Airway Risk Evaluation (CARE) System to Improve Handoff Communication in Pediatric Patients With Tracheotomy** *JAMA OTOLARYNGOLOGY-HEAD & NECK SURGERY*  
Hughes, A. L., Murray, N., Valdez, T. A., Kelly, R., Kavanagh, K.  
2014; 140 (1): 29-33
- **Phoma and Acremonium invasive fungal rhinosinusitis in congenital acute lymphocytic leukemia and literature review** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Roehm, C. E., Salazar, J. C., Hagstrom, N., Valdez, T. A.  
2012; 76 (10): 1387-1391
- **Bacterial Tracheitis A Varied Entity** *PEDIATRIC EMERGENCY CARE*  
Miranda, A. D., Valdez, T. A., Pereira, K. D.  
2011; 27 (10): 950-953
- **Evaluation of Pediatric Sensorineural Hearing Loss: A Survey of Pediatric Otolaryngologists** *ANNALS OF OTOTOLOGY RHINOLOGY AND LARYNGOLOGY*  
Rutherford, K. D., Lerer, T. S., Schoem, S. R., Valdez, T. A.  
2011; 120 (10): 674-681
- **Preliminary Findings on the Effects of Topical Photoactivated Antimicrobial Methyl-delta-Aminolevulinic Acid on Murine Hearing Thresholds** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*  
Roehm, C. E., Valdez, T. A., Parham, K.  
2011; 144 (6): 959-961
- **Posterior Vascular Lesions: Histopathological and Immunohistochemical Diagnosis** *LARYNGOSCOPE*  
Roehm, C. E., Chelius, D. C., Larrier, D., Hicks, M. J., Albright, J. T., Valdez, T. A.  
2011; 121 (2): 397-403
- **Enhanced Video Images for Tympanic Membrane Characterization** *2011 ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY (EMBC)*  
Cheng, L., Liu, J., Roehm, C. E., Valdez, T. A.  
2011: 4002-4005
- **Microbiology of Third and Fourth Branchial Pouch Cysts** *LARYNGOSCOPE*  
Pahlavan, S., Haque, W., Pereira, K., Larrier, D., Valdez, T. A.  
2010; 120 (3): 458-462
- **Kaposiform hemangioendothelioma (with Kasabach Merritt syndrome) of the head and neck: Case report and review of the literature** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Mukerji, S. S., Osborn, A. J., Roberts, J., Valdez, T. A.  
2009; 73 (10): 1474-1476
- **Sensorineural hearing loss in patients with inflammatory bowel disease** *AMERICAN JOURNAL OF OTOLARYNGOLOGY*  
Karmody, C. S., Valdez, T. A., Desai, U., Blevins, N. H.  
2009; 30 (3): 166-170
- **Pneumococcal mastoiditis in children and the emergence of multidrug-resistant serotype 19A isolates** *PEDIATRICS*  
Ongkasuwan, J., Valdez, T. A., Hulten, K. G., Mason, E. O., Kaplan, S. L.

2008; 122 (1): 34-39

- **Airway foreign bodies and brain abscesses: Report of two cases and review of the literature** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Roberts, J., Bartlett, A. H., Giannoni, C. M., Valdez, T. A.  
2008; 72 (2): 265-269
- **Recurrent fetal rhabdomyoma of the head and neck** *INTERNATIONAL JOURNAL OF PEDIATRIC OTORHINOLARYNGOLOGY*  
Valdez, T. A., Desai, U., Volk, M. S.  
2006; 70 (6): 1115-1118
- **Early laryngeal inhalation injury and its correlation with late sequelae** *LARYNGOSCOPE*  
Valdez, T. A., Desai, U., Ruhl, C. M., Nigri, P. T.  
2006; 116 (2): 283-287
- **Spectroscopic detection and evaluation of morphologic and biochemical changes in early human oral carcinoma** *CANCER*  
Muller, M. G., Valdez, T. A., Georgakoudi, I., Backman, V., Fuentes, C., Kabani, S., Laver, N., Wang, Z. M., BOONE, C. W., Dasari, R. R., Shapshay, S. M., Feld, M. S.  
2003; 97 (7): 1681-1692
- **Idiopathic subglottic stenosis revisited** *ANNALS OF OTOTOLOGY RHINOLOGY AND LARYNGOLOGY*  
Valdez, T. A., Shapshay, S. M.  
2002; 111 (8): 690-695
- **Pulsed-dye laser and retinoic acid delay progression of oral squamous cell carcinoma: A murine model** *LARYNGOSCOPE*  
Shah, R. K., Valdez, T. A., Wang, Z., Shapshay, S. M.  
2001; 111 (7): 1203-1208
- **Anterior window laryngoplasty: A new anatomic approach for posterior glottic and subglottic stenosis** *ANNALS OF OTOTOLOGY RHINOLOGY AND LARYNGOLOGY*  
Valdez, T. A., Wang, Z., Schumann, R., Shapshay, M.  
2001; 110 (6): 519-523
- **A new laser treatment for vocal cord papilloma-585-nm pulsed dye** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*  
Valdez, T. A., McMillan, K., Shapshay, S. M.  
2001; 124 (4): 421-425
- **Pulsed dye laser treatment of laryngeal papillomas** *BRONCHOLOGY AND BRONCHESOPHAGOLOGY: STATE OF THE ART*  
Shapshay, S. M., Valdez, T. A.  
2001; 1217: 90-94
- **Bronchoscopic management of benign stenosis.** *Chest surgery clinics of North America*  
Shapshay, S. M., Valdez, T. A.  
2001; 11 (4): 749-68