

# SCOTT E. WILLIAMS, PH.D.

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## EDUCATION AND TRAINING

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Columbia University  
Ph.D., Neurobiology & Behavior  
*Thesis: Axon guidance at the optic chiasm*  
Advisor: Carol A. Mason, Ph.D.  
New York, NY  
2005

Brown University  
A.B., Biology  
Providence, RI  
1996

## PROFESSIONAL EXPERIENCE

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University of North Carolina at Chapel Hill  
Assistant Professor, Department of Pathology & Laboratory Medicine  
*Research Areas: Oriented cell divisions; Oral stem cells; Stem cells in oral cancer; Cleft palate*  
Adjunct Assistant Professor, Department of Biology (since 2015)  
Lineberger Comprehensive Cancer Center (since 2013)  
Center for Gastrointestinal Biology & Disease (since 2015)  
Graduate Curricula affiliations: Pathobiology & Translational Science (since 2013);  
Genetics & Molecular Biology (since 2013); Biology (since 2014); Oral Biology (since 2014);  
Cell Biology & Physiology (since 2016)  
Chapel Hill, NC  
2013-present

The Rockefeller University  
Postdoctoral Fellow  
*Research area: Role of oriented and asymmetric cell divisions in epidermal stratification*  
Advisor: Elaine Fuchs, Ph.D.  
New York, NY  
2006-2013

CytoTherapeutics (Stem Cells, Inc.)  
Research Associate, Device Biology group  
Lincoln, RI  
1996-1998

## HONORS AND AWARDS

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Invited speaker, *ASCB Triangle Cytoskeleton Meeting* 2018  
Joe W. Grisham Award for Excellence in Graduate Student Teaching, *Department of Pathology* 2017  
Pilot/Feasibility Award, *Center for Gastrointestinal Biology and Disease* 2016  
Kimmel Scholar Award, *Sidney Kimmel Foundation for Cancer Research* 2015  
Keynote Speaker, *UNC Mitosis Symposium* 2015  
Junior Faculty Development Award, *IBM/UNC Provost's Office* 2015  
Travel Award, *International Society for Stem Cell Research, Vancouver, Canada* 2014  
ATIP-Avenir Young Investigator, *CNRS/INSERM* 2012  
Poster Prize, *European Association for Cancer Research* 2011  
Postdoctoral Fellowship Award, *American Cancer Society* 2007  
Postdoctoral Training Grant Recipient, *NIH/NCI* 2006  
Predoctoral Training Grant Recipient, *NIH/NEI* 2001  
Dean's Scholarship, *Columbia University Graduate School of Arts and Sciences* 1998  
Elected Member, *Sigma Xi Scientific Research Society* 1995  
Merit Scholar Winner, *National Merit Scholarship Corporation* 1992

## BIBLIOGRAPHY

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### PUBLISHED REFEREED ARTICLES

#### UNC-CHAPEL HILL

1. Zhang Y, Hwang B-J, Liu Z, **Williams SE**, Peng B, Burette SW, Li N, Diaz LA, Su M and Liu Z (2018). BP180 dysfunction triggers spontaneous skin inflammation in mice. *Proc Natl Acad Sci USA* 2018 June 4. pii: 201721805. doi: 10.1073/pnas.1721805115. [PMID: 29866844](#)
2. Saito R, Smith CS, Utsumi T, Bixby LM, Kardos J, Wobker SE, Chai S, Manocha U, Byrd KM, Damrauer JS, **Williams SE**, Vincent BG and William Y. Kim (2018). Molecular subtype specific immunocompetent models of high grade urothelial carcinoma reveal differential neoantigen expression and response to immunotherapy. *Cancer Research* 2018 May 21. pii: canres.0173.2018. doi:10.1158/0008-5472.CAN-18-0173. [PMID: 29784854](#)
3. Lough KJ, Byrd KM, Spitzer DC, and **Williams SE** (2017). Closing the gap: mouse models to study adhesion in secondary palatogenesis. *J Dent Res* 96(11):1210-1220. doi: 10.1177/0022034517726284. Epub 2017 Aug 17. [Special Issue on Orofacial Clefting, Craniofacial and Dental Anomalies] [PMID: 28817360](#)
4. Byrd KM, Lough KJ, Patel JH, Descovich CP, Curtis TA and **Williams SE** (2016). LGN plays distinct roles in oral epithelial stratification, filiform papilla morphogenesis and hair follicle development. *Development* 143(15): 2803-17. [PMID: 27317810](#) [Selected for Cover, F1000 reviewed]
5. **Williams SE**<sup>‡</sup>, Garcia I, Crowther AJ, Stewart A, Li S, Stewart A, Liu H, Lough, KJ, O'Neill S, Veleta K, Oyarzabal EA, Merrill JR, Shi YI and Gershon TR<sup>‡</sup> (2015). Aspm sustains postnatal cerebellar neurogenesis and medulloblastoma growth in mice. *Development* 142(22): 3921-32. [PMID: 26450969](#) <sup>‡</sup>co-corresponding authors
6. **Williams SE**, Ratliff LA, Postiglione MP, Knoblich JA and Fuchs E (2014). Par3-mInsc and Gai3 cooperate to promote oriented epidermal cell divisions through LGN. *Nat Cell Biol* 16(8): 758-69. [PMID: 25016959](#) [F1000 reviewed]
7. **Williams SE** and Fuchs E (2013). Oriented divisions, fate decisions. *Curr Opin Cell Biol* 25(6):749–758. [PMID: 24021274](#)

#### The Rockefeller University (post-doctoral)

1. **Williams SE**, Beronja S, Pasolli HA and Fuchs E (2011). Asymmetric cell divisions promote Notch-dependent epidermal differentiation. *Nature* 470: 353-358. [PMID: 21331036](#) [Comment in *Nat Rev Genetics* 12: 226; F1000 reviewed].
2. Ezratty E, Stokes N, Chai S, Shah A, **Williams SE** and Fuchs E (2011). A role for the primary cilium in Notch signaling and epidermal differentiation during skin development. *Cell* 145: 1129-41. [PMID: 21703454](#) [F1000 reviewed]
3. Luxenburg C, Pasolli HA, **Williams SE** and Fuchs E (2011). Developmental roles for Srf, cortical cytoskeleton and cell shape in epidermal spindle orientation. *Nat Cell Biol* 13: 203-14. [PMID: 21336301](#) [F1000 reviewed]
4. Beronja S, Livshits G, **Williams SE** and Fuchs E (2010). Rapid functional dissection of genetic networks via tissue-specific transduction and RNAi in mouse embryos. *Nat Med* 16: 821-7. [PMID: 20526348](#)
5. Perez-Moreno M, Song W, Pasolli HA, **Williams SE** and Fuchs E (2008). Loss of p120 catenin and links to mitotic alterations, inflammation and skin cancer. *Proc Nat Acad Sci* 105: 15399-404. [PMID: 18809907](#) [F1000 reviewed]

#### Columbia University (doctoral)

1. **Williams SE**, Grumet M, Colman DR, Henkemeyer M, Mason CA, and Sakurai T (2006). A role for Nr-CAM in the patterning of binocular visual pathways. *Neuron* 50: 535-47. [PMID: 16701205](#) [Comment in *Neuron* 50: 519-21]

- Petros T, **Williams SE**, and Mason CA (2006). Temporal regulation of EphA4 in astroglia during murine retinal and optic nerve development. *Mol Cell Neurosci* 32: 49-66. [PMID: 16574431](#)
- Williams SE**, Mason CA, and Herrera E (2004). The optic chiasm as a midline choice point. *Curr Opin Neurobiol* 14: 51-60. [PMID: 15018938](#)
- Herrera E, Marcus R, Li S, **Williams SE**, Erskine L, Lai E, and Mason CA (2004). Foxd1/BF-2 is required for proper formation of the optic chiasm. *Development* 131: 5727-39. [PMID: 15509772](#)
- Menzies AS, Aszodi A, **Williams SE**, Pfeifer A, Wehmen AM, Goh KL, Mason CA, Fassler R, and Gertler FB (2004). Mena and VASP are required for multiple actin-dependent processes that shape the vertebrate nervous system. *J Neurosci* 24: 8029-38. [PMID: 15371503](#)
- Williams SE**, Mann F, Sakurai T, Erskine L, Wei S, Rossi DJ, Gale N, Holt CE, Mason CA, and Henkemeyer M (2003). Ephrin-B2 and EphB1 mediate retinal axon divergence at the optic chiasm. *Neuron* 39: 919-935. [PMID: 12971893](#) [Comment in *Neuron* 39: 885-8; F1000 reviewed]
- Erskine L, **Williams SE**, Brose K, Kidd T, Rachel RA, Goodman CS, Tessier-Lavigne M, and Mason CA (2000). Retinal ganglion cell axon guidance in the mouse optic chiasm: expression and function of Robos and Slits. *J Neurosci* 20: 4975-82. [PMID: 10864955](#)

*CytoTherapeutics (pre-doctoral)*

- Li RH, **Williams S**, Burkstrand M, and Roos E (2000). Encapsulation matrices for neurotrophic factor-secreting myoblast cells. *Tissue Engineering* 6:151-63. [PMID: 10941210](#)
- Li RH, **Williams SE**, White M, and Rein DR (1999). Dose control with cell lines used for encapsulated cell therapy. *Tissue Engineering* 5: 453-66. [PMID: 10586101](#)
- Li RH, White M, **Williams SE**, and Hazlett T (1998). Poly(vinyl alcohol) synthetic polymer foams as scaffolds for cell encapsulation. *J Biomaterials Sci: Polymer Ed* 9: 239-58. [PMID: 9556760](#)

*PUBLISHED REFEREED ABSTRACTS*

- Byrd KM<sup>†</sup>, Patel JH, **Williams SE** (2018). Infrequently Dividing Oral Epithelial Cells Reside in Posterior Palatal Niches. *J Dent Res* 97 Spec Iss A.
- Patiño-Descovich C, Lough KJ, Spizer D, Mac M and **Williams SE** (2017). Dissecting the function of classical cadherins in stratified epithelial morphogenesis. *Mol Biol Cell Suppl* 28:5513 (Abstract #P3414)
- Lough KJ, Byrd KM, Patiño-Descovich C, Spitzer DC, Bergman AJ and **Williams SE** (2017). Adherens Junction components regulate mitotic spindle orientation in embryonic epidermis. *Mol Biol Cell Suppl* 28:5514 (Abstract #P3415)
- Byrd KM, Patel JH, Mac MT, **Williams SE** (2017). Identification of label-retaining cells in upper aerodigestive tract epithelial niches. *J Dent Res* 96 Spec Iss A:1865. [Abstract](#)
- Carper MB, Troutman S, Byrd KM, Henry EC, Montgomery SA, **Williams SE**, Kissil JL, Amelio AL (2017). Characterizing a Novel HPV-driven GEMM of Oral Squamous Cell Carcinoma. *J Dent Res* 96 Spec Iss A:0896 [Abstract](#)
- Byrd KM, Lough KJ, Curtis TA, Patel JH and **Williams SE** (2016). Dorsal Tongue Epithelia Require Oriented Divisions to Organize Filiform Papillae. *J Dent Res* 95 Spec Iss A:73. [Abstract](#)
- Byrd KM, Lough KJ, Curtis TA and **Williams SE** (2015). LGN/GPSM2 Controls Division Orientation in Developing Murine Oral Epithelia. *J Dent Res* 94 Spec Iss A:AHAT0001. [Abstract](#)

*IN PRESS/SUBMITTED REFERRED MANUSCRIPTS*

- Hwang-B-J, Zhang Y, Brozowski J, Liu Z, Burette S, Lough KJ, Li N, **Williams SE**, Su M, Thomas N and Liu Z (2018). The Dysfunction of BP180/collagen XVII in keratinocytes leads to mast cell-dependent skin infiltration of myeloid derived suppressor cells and accelerated melanoma progression. Under review at *Oncogene*, 36 pages.

*SELECTED INVITED ORAL PRESENTATIONS AT INTERNATIONAL CONFERENCES*

“A population of oral epithelial label-retaining cells resides in a discrete niche in palatal rugae ridges.” K.M. Byrd, J.H. Patel and S.E. Williams. International Society for Stem Cell Research Annual Meeting, Boston, MA, June 13-17<sup>th</sup>, 2017.

“Rugged terrain: the search for oral epithelial stem cells.” K.M. Byrd, J.H. Patel and S.E. Williams. Epithelial Differentiation & Keratinization Gordon Research Conference, Barga, Italy, May 7-12<sup>th</sup>, 2017.

“Par3-Insc and G-alpha-i3 cooperate to promote oriented epidermal divisions,” S.E. Williams, L.A. Ratliff, M.P. Postiglione, J.A. Knoblich and E. Fuchs. International Society for Stem Cell Research Conference, Vancouver, BC, Canada, June 18-21<sup>st</sup>, 2014.

“Asymmetric cell divisions promote Notch-dependent epidermal differentiation,” S.E. Williams, S. Beronja and E. Fuchs. International Society for Stem Cell Research Conference, Toronto, ON, Canada, June 15-18<sup>th</sup>, 2011.

“LGN, NuMA, and Dctn1 regulate asymmetric cell divisions and promote Notch-dependent epidermal differentiation,” S.E. Williams, S. Beronja and E. Fuchs. Cell Cycle, Cancer and Development Conference, Saint-Malo, France, May 25-28<sup>th</sup>, 2011.

*SELECTED INVITED ORAL PRESENTATIONS BY TRAINEES AT INTERNATIONAL CONFERENCES*

“Infrequently dividing oral epithelial cells reside in posterior palatal niches.” K.M. Byrd<sup>†</sup>, J.H. Patel, N. Piehl and S.E. Williams. American Association for Dental Research (AADR) 47th Annual Meeting & Exhibition, Ft Lauderdale, FL, March 21-24<sup>th</sup>, 2018.

<sup>†</sup>First Prize winner, AADR Johnson & Johnson Hatton Competition, Post-doctoral Category

“Rolling off the tongue: Oriented cell divisions precede polarized filiform papillae morphogenesis,” K.M. Byrd, K.J. Lough, M. Mac, J.H. Patel and S.E. Williams. Triangle Developmental Biology Symposium, Duke University, Durham, NC, April 5, 2016.

“Dorsal tongue epithelia require oriented divisions to organize filiform papillae.” K.M. Byrd, K.J. Lough, T.A. Curtis, J.H. Patel and S.E. Williams. American Association for Dental Research (AADR) 45th Annual Meeting & Exhibition, Los Angeles, CA, March 16-19<sup>th</sup>, 2016.

“Tongue and cheek: LGN-mediated spindle orientation is essential for oral epithelial development.” K.M. Byrd, K.J. Lough, T.A. Curtis, J.H. Patel, S.E. Williams. Craniofacial Morphogenesis and Tissue Regeneration Gordon Research Seminar, Ventura, CA, March 12-17<sup>th</sup>, 2016.

“LGN/GPSM2 Controls Division Orientation in Developing Murine Oral Epithelia,” K.M. Byrd<sup>†</sup>, K. Lough, T.A. Curtis and S.E. Williams. American Association for Dental Research (AADR) 44th FINAL REMINDER: 2018 Faculty Elections Ballot Annual Meeting & Exhibition of the AADR. Boston, MA, March 11-14, 2015.

<sup>†</sup>First Prize winner, AADR Johnson & Johnson Hatton Competition, Senior Category

*SELECTED POSTER PRESENTATIONS AT NATIONAL CONFERENCES*

“Dissecting the function of classical cadherins in stratified epithelial morphogenesis.” C. Patiño-Descovich, K.J. Lough, D.C. Spitzer, M.T. Mac and S.E. Williams. American Society for Cell Biology/EMBO Annual Meeting, Philadelphia, PA, December 2-6<sup>th</sup>, 2017.

“Adherens Junction components regulate mitotic spindle orientation in embryonic epidermis.” K.J. Lough, K.M. Byrd, C. Patiño-Descovich, D.C. Spitzer, A.J. Bergman and S.E. Williams. American Society for Cell Biology/EMBO Annual Meeting, Philadelphia, PA, December 2-6<sup>th</sup>, 2017.

“Dissecting the function of classical cadherins in stratified epithelial morphogenesis.” C. Patiño-Descovich, K.J. Lough and S.E. Williams. Cell Contact & Adhesion Gordon Research Conference, Andover, NH, June 18-23<sup>rd</sup>, 2017.

“Identification of label-retaining cells in upper aerodigestive tract epithelial niches.” **K.M. Byrd, J.H. Patel, M.T. Mac and S.E. Williams.** American Association for Dental Research 46<sup>th</sup> Annual Meeting, San Francisco, CA, March 22-25<sup>th</sup>, 2017.

“Afadin regulates epithelial spindle orientation and adhesion maturation.” **K.J. Lough, K.M. Byrd, D.C. Spitzer, M.T. Mac, S.E. Williams.** Signaling by Adhesion Receptors Gordon Research Conference, Lewiston, ME, June 19-24<sup>th</sup>, 2016.

“Dorsal tongue epithelia require oriented divisions to organize filiform papillae.” **K.M. Byrd, K.J. Lough, J.H. Patel and S.E. Williams,** American Association for Dental Research 45<sup>th</sup> Annual Meeting, Los Angeles, CA, March 16-19<sup>th</sup>, 2016.

“Diverse roles of the spindle orientation protein LGN in oral epithelial development.” **K.M. Byrd, J.M. Patel and S.E. Williams.** Epithelial Differentiation & Keratinization Gordon Research Conference, Sunday River, ME, July 12-17<sup>th</sup>, 2015.

“*LGN/GPSM2* controls cellular division orientation in developing murine oral epithelia.” **K.M. Byrd, T.A. Curtis, K.J. Lough and S.E. Williams,** American Association for Dental Research 44<sup>th</sup> Annual Meeting, Boston, MA, March 11-14<sup>th</sup>, 2015.

#### *SELECTED INVITED SEMINARS*

“Oral epithelia in development, maintenance and disease.” Department of Physiology & Biophysics, University of Illinois-Chicago, Chicago, IL, November 2, 2018.

“How adherens junction proteins regulate spindle orientation and epidermal architecture.” Invited Faculty Speaker, 5<sup>th</sup> Annual ASCB Triangle Cytoskeleton Meeting, Saxapahaw, NC, September 24, 2018.

“Spindle orientation in oral epithelia: development, stem cells and cancer.” North Carolina Central University, Durham, NC, February 21, 2018.

“Oral epithelia: development, stem cells and cancer.” Center for Gastrointestinal Biology and Disease Seminar Series, Chapel Hill, NC, August 24, 2017.

“Divisions and decisions: spindle orientation in stratified epithelial development, stem cells and cancer.” Spanish National Cancer Research Centre (CNIO), Madrid, Spain, March 27, 2017.

“Oral epithelia: stem cells, development and cancer.” Lineberger Junior Faculty Forum, Chapel Hill, NC, February 14, 2017.

“Oral epithelia: development, stem cells and cancer.” Gastrointestinal Research Conference, Duke University, Durham, NC, January 17, 2017.

“Divisions and decisions: building stratified epithelia through oriented cell divisions.” Department of Molecular, Cell, and Developmental Biology Spring Seminar Series, University of California at Santa Cruz, Santa Cruz, CA, February 29, 2016.

“Divisions and decisions: building stratified epithelia through oriented cell divisions.” Fred Hutchinson Cancer Research Center, Seattle, WA, February 26, 2016.

“New Approaches to study oral epithelial development and cancer.” Oral Biology Seminar Series, UNC School of Dentistry, Chapel Hill, NC, February 23, 2016.

“Divisions and decisions: Spindle orientation and epithelial stem cell fate.” Center for Gastrointestinal Biology and Disease Stem Cell Seminar Series, Chapel Hill, NC, December 14, 2015.

“Applied mitosis: Spindle orientation and cell fate.” Keynote Address, Mitosis Symposium. Chapel Hill, NC, October 16, 2015.

“Divisions & decisions: spindle orientation in epithelial morphogenesis.” North Carolina State University, Department of Molecular Biomedical Sciences, Raleigh, NC, June 6, 2015.

“Spindle orientation from development to cancer.” UNC Lineberger Comprehensive Cancer Center Cancer Cell Biology/Molecular Therapeutics Retreat, Rizzo Center, Chapel Hill, NC, December 1, 2014.

“Divisions & decisions: the role of spindle orientation in epithelial morphogenesis.” UNC Chapel Hill Department of Biology Seminar Series, Chapel Hill, NC, September 2, 2014.

“Divisions and decisions: cell polarity, spindle orientation and epithelial cell fate.” UNC Chapel Hill Department of Cell Biology & Physiology Seminar Series, Chapel Hill, NC, May 5, 2014.

“Divisions and decisions: cell polarity, spindle orientation and epithelial cell fate.” UNC Chapel Hill Department of Genetics Wednesday Research Colloquium, Chapel Hill, NC, April 9, 2014.

#### DIGITAL WEBINARS

“Visualizing divisions and development in 3D.” Nature.com webcast, August 30, 2017.

<http://www.nature.com/webcasts/event/visualizing-divisions-and-development-in-3d/>

## TEACHING ACTIVITIES

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### COURSE INSTRUCTION

- Lecturer to graduate students in PATH 713, “*Molecular and Cellular Pathophysiologic Basis of Disease: Mechanisms of Disease*” on the topics of “Cancer Stem Cells/Cell Biology,” 2013-present and “Cancer Genomics,” 2015-present; enrollment: 23 students (2015); 20 students (2016); 21 students (2017)
- Lecturer to graduate students in PATH 715, “*Molecular and Cellular Pathophysiology of Disease: Systemic Pathology*” on the topic of “Diseases of the Skin,” 2015-present; enrollment: 17 students (2016), 14 students (2017), 16 students (2017)
- Lecturer to graduate students in PHCO 744 (course co-organizer), “Topics on Stem Cells and Development” on the topics of “Asymmetric Cell Division” and “Cancer Stem Cells,” 2014; “Current Topics in Stem Cell Research” and “Asymmetric Cell Division,” 2016; “Current Topics in Stem Cell Research,” “Mammary Stem Cells,” “Epidermal Differentiation I & II”; enrollment: 11 students (2014), 16 students (2016), 14 students (2018)
- Lecturer to graduate students in CBPH851 “*Modern Concepts in Cell Biology II*” on the topic of “Epidermal Cell Differentiation,” 2018-present; enrollment: 8 students (2018)
- Lecturer to graduate students in CBPH895 “*RCR- Responsible Conduct of Research*” on the topic of “Mentor/mentee relationships” (with Amy Gladfelder) (Fall 2018)
- Instructor for BBSP 902 (faculty co-mentor), “*Seminar in Biological and Biomedical Sciences*,” 2016-present; enrollment: 14 students (2016-2017), 18 students (2018-2018)
- Instructor for undergraduate research in BIOL 295/395 “*Undergraduate Research in Biology*.” Research supervisor for Valentina Rivadeneira (2015), Jeet Patel (2016), Danielle Spitzer (2016).
- Instructor for undergraduate thesis research in BIOL 692H “*Honors Research in Biology*.” Research supervisor for Jeet Patel\* and Danielle Spitzer\*, (2017).
  - \* Graduated with Highest Honors (bestowed upon only 9 Biology majors in 2017)
- Sponsor for undergraduate research in BIOL 395(H) “*Undergraduate Research in Biology*” for Jack Kabrich (2017-18), Ismael Gomez (2017-18), Jeremy Morowitz (2017-2018), Aidin Alejo (2018), Henry Tilghman (2018), Nicole Nay (2018)
- Undergraduate thesis grader for BIOL 692H “*Honors Research in Biology*,” 3 students (2017), 5 students (2018)

### GRADUATE THESIS SUPERVISOR

- Graduate student thesis supervisor for Bethany Wagner, Graduate Program in Pathobiology & Translational Science, 2017-present.
- Graduate student thesis supervisor for Carlos Patiño-Descovich, Curriculum in Cell Biology and Physiology, 2016-present.
- Graduate student thesis supervisor for Kendall Lough, Curriculum in Genetics and Molecular Biology, 2014-present

- Graduate student thesis supervisor for Kevin Byrd, Graduate Program in Oral Biology, 2014-2017 (successful defense November, 2017). Thesis title: “How to make a mouth: oral epithelia require locoregional mitotic diversity in morphogenesis and in maintenance”
- Graduate student rotation supervisor: Abigail Cleveland (2018), Bethany Wagner (2016), Carlos Patiño-Descovich (2015), Zachary Opheim (2015), Benjamin Roberts (2015), Lyndsay Ratliff (2014), Kevin Byrd (2014), Kendall Lough (2013), Justine Moore (2013)

#### *UNDERGRADUATE THESIS SUPERVISOR*

- Undergraduate thesis supervisor for Danielle Spitzer, 2016-2017. Title of thesis: “Investigating the expression of nectin-4 during palatogenesis and production of shRNA lentiviruses targeting *Nectin-2* and *-4*”; *Awarded Highest Honors*
- Undergraduate thesis supervisor for Jeet Patel, 2016-2017. Title of thesis: “Rare Label Retaining Cells in Palatal Epithelia Display Characteristics of Reserve Stem Cells”; *Awarded Highest Honors*

#### *UNDERGRADUATE RESEARCH SUPERVISOR*

- Summer undergraduate research sponsor for Christian Agosto in UNC’s Summer of Learning and Research (SOLAR) program for underrepresented minorities, 2015
- Undergraduate work study research supervisor: Valentina Rivadeneira (2013-2015); Joshua Garrett (2013-2014); Jeet Patel (2014-2017); Danielle Spitzer<sup>§</sup> (2014-2017); Savannah Loehr (2015-2016); Abby Bergman (2016-present); Jina Yom (2016-present); Jason Guo (2017-present); Natalie Piehl (2017-present)

<sup>§</sup> Recipient of National Science Foundation Graduate Research Fellowship Program Award

#### *GRADUATE THESIS COMMITTEES*

- Pathobiology & Translational Science: Abigail Shelton, Dr. Ryan Miller lab (2018-present)
- Pathobiology & Translational Science: Erin Smithberger, Dr. Ryan Miller lab (2018-present)
- Genetics & Molecular Biology: Kia Perez-Vale, Dr. Mark Peifer lab (2017-present)
- Genetics & Molecular Biology: Adele Musicant, Dr. Antonio Amelio lab (2016-present)
- Pathobiology & Translational Science: Nicole Fleming, Dr. Jiandong Liu lab (2015-present)
- Genetics & Molecular Biology: Lyndsay Ratliff Wylie, Dr. Victoria Bautch lab (2015-2018, , defense scheduled June, 2018)
- Genetics & Molecular Biology: Caralynn Wilczewski, Dr. Frank Conlon lab (2014-2018, defense scheduled June, 2018)
- Neurobiology: Nicholas Boyer, Dr. Stephanie Gupton lab (2014)
- Microbiology & Immunology: Bin-Jin Hwang, Dr. Zhi Liu lab (2013-2017, successful defense November, 2017)

#### *GRAND ROUNDS, DEPARTMENT OF PATHOLOGY & LABORATORY MEDICINE*

- “More than just cell division: why mitotic spindle orientation matters.” September 3, 2015.
- “Oral epithelia: from development to cancer.” November 13, 2014.

## GRANTS AND RESEARCH SUPPORT

### *CURRENT*

NIH/NCI Research Project Grant R01 CA215347-01A1 Role on grant: PI (Cyrus Vaziri, Lead PI) “Defining Mechanisms of Pathological Trans-Lesion Synthesis During Carcinogenesis”	2018-2023
NIH/NIDCR Exploratory/Developmental Research Grant R21 DE025725-01A1 Role on grant: Lead PI (Antonio Amelio, PI)	2016-2018

“Illuminating the Role of Oral Stem Cells in the Development of Oral Squamous Cell Carcinomas”

NIH/NIDCR 2017-2019  
Predoctoral fellowship F31 DE026956-01  
Role on grant: Mentor (Kendal Lough, trainee)  
“Cell-cell adhesion in regulation of mammalian palatogenesis”

NIH/NIDCR 2017-2022  
Mentored Clinical Scientist Research Career Development Award K08 DE026537-01  
Role on grant: Mentor (Kevin Byrd, trainee)  
“Mechanisms of Oral Epithelial Differentiation”

Center for Environmental Health and Susceptibility 2017-2018  
Interdisciplinary Pilot Project Award ID-PPP 2016-01  
Role on grant: PI (with Cyrus Vaziri)  
“Defining MAGEA4-RAD18 as a Novel Mutagenic Driver of Environmental Carcinogenesis”

NIH/NICHD 2015-2020  
Research Project Grant R01 HD060860-1A1  
Role on grant: Collaborator (Kathleen Caron, PI)  
"Adrenomedullin Signaling at the Maternal-Fetal Interface"

*COMPLETED*

Sidney Kimmel Foundation for Cancer Research 2015-2017  
Kimmel Scholar Award SKF-15-065  
Role on grant: Principal Investigator  
“Characterization of Oral Stem Cells and Their Role in Squamous Cell Carcinomas”

Center for Gastrointestinal Biology & Disease 2016-2017  
Pilot Feasibility Grant, supported by NIH P30 DK034987  
Role on grant: Principal Investigator  
“Identification of Stem Cell Niches and Quiescence Signatures in the Upper Gastrointestinal Tract”

IBM/UNC Provost Office 2015  
Junior Faculty Award  
Role on grant: Principal Investigator  
“Characterization of oral epithelial stem cells and their role in orofacial clefting and oral cancers”

American Cancer Society 2007-2010  
Postdoctoral fellowship PF-07-045-01-DDC  
Role on grant: Principal Investigator  
“Role of Asymmetric Cell Divisions in Epidermal Development and Homeostasis”