**CURRICULUM VITAE**

**Melissa Hirose Wong**

Associate Professor, Vice Chair

Department of Cell, Developmental & Cancer Biology

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**I. Education:**

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| --- | --- | --- | --- |
| 1983-1987 | University of Colorado | B.A. | Molecular, Cellular and Dev Biology |
| 1989-1994 | Wake Forest Univ/Bowman Gray SOM | Ph.D. | Molecular Cellular Pathobiology |
| 1995-1998 | Washington Univ School of Medicine | Post-doctoral Fellow | Dept of Molecular Bio and Pharmacology |
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**II. Principal Positions Held:**

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| --- | --- | --- | --- |
| 1998-2001 | Washington University School of Medicine | Instructor | Molecular Biology and Pharmacology |
| 2001-2008 | Oregon Health & Science Univ | Assistant Professor | Dermatology; Cell and Dev Biology |
| 2008-2013 | Oregon Health & Science Univ | Associate Professor | Dermatology; Cell and Dev Biology |
| 2013-Present | Oregon Health & Science Univ | Associate Professor  Vice Chair | Cell Dev & Cancer Bio |
| 2013-Present | Oregon Health & Science Univ | Knight Investigator | Knight Cancer Inst |

**OTHER POSITIONS HELD CONCURRENTLY:**

|  |  |  |  |
| --- | --- | --- | --- |
| 2013-present | Oregon Health & Science Univ | Knight Cancer Institute Program Co-Leader | Program 1, Cancer Biology |
| 2014-present | Cellular and Molecular Gastroenterology and Hepatology | Editorial Board |  |

III. HONORS AND AWARDS:

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| --- | --- | --- |
| 1987 | Cum laude, Dean’s list | University of Colorado |
| 1991-94 | F31 DK008718 | NIDDK |
| 1989-91 | Dean’s Fund Scholarship | Wake Forest/Bowman Gray SOM |
| 1995-06 | T32 HL007275 Cardiovascular System: Function, Regulation & Pharmacology | Washington Univ SOM |
| 2002 | Rose award for teaching | Oregon Health & Sci Univ |
| 2006-07  2018  2019  2019 | Excellence in Graduate Teaching award  First place, Poster, Paying it Forward: A Unique Approach to Junior Faculty Professional Development in the Basic Sciences  Gast et al highlighted by Science Magazine  Featured in the Women of the Knight | Oregon Health & Sci Univ  OHSU, SOM Symposium on Educational Excellence  National recognition  Knight Cancer Institute, OHSU |

**IV. PROFESSIONAL ACTIVITIES**

**Local, National and International Meetings Organized:**

|  |  |
| --- | --- |
| 2007 | Walter C. Lobitz Visiting Professorship |
| 2012 | Intestinal Stem Cell Consortium Steering Committee Meeting, Portland, OR, USA |
| 2014 | OCSSB/CDCB Annual Retreat, Co-organizer with Drs. Jeffrey Tyner, Heidi Feiler, Stevenson, WA, USA |
| 2015 | FASEB, Gastrointestinal Tract XV, Co-organizer with Drs. Richard Peek (Vanderbilt) and Jason Mills (Wash U SOM), Steamboat Springs, CO, USA |

**SERVICE TO PROFESSIONAL SOCIETIES**

Northwest Developmental Biology Conference

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| --- | --- |
| 2002  2004 | Session Chair, San Juan Islands, WA  Session Chair, San Juan Islands, WA |

American Gastroenterology Association (Member 2003-present)

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| --- | --- |
| 2007 | Session Co-Chair (Cancer Stem Cells), Digestive Disease Week, Washington D.C. |
| 2009-present | Member, Abstract and Talk Review (Cancer Stem cell, Gastrointestinal Stem Cells), Digestive Disease Week |
| 2010 | Session Co-Chair (Cancer Stem Cells), Digestive Disease Week, New Orleans, LA |
| 2010 | Special session mini-symposium Co-Chair (Stem Cells), Digestive Disease Week, New Orleans, LA |
| 2012 | Session Co-Chair (Intestinal Stem Cells), Digestive Disease Week, San Diego, CA |
| 2013 | Session Chair (Cancer Stem Cells), Digestive Disease Week, Orlando, FL |
| 2014  2019-present  2020-2021 | Session Co-Chair (Cancer Stem Cells), Digestive Disease Week, Washington D.C.  AGA Institute Council, Cellular and Molecular Gastroenterology  AGA CMGH Developmental Biology |
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Intestinal Stem Cell Consortium (Member 2009-2015)

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| --- | --- |
| 2009-2015 | Steering Committee Member |
| 2009-2015 | Pilot project grant review |
| 2009-2015 | Chair, science and standards sub-committee |
| 2011-2015 | Member, Hierarchy sub-group |
| 2011-2015 | Member, Niche sub-group |
| 2011-2015 | Member, Translation sub-group |

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| **Other Professional Society Memberships** | | | |
| 1989-present | Member | American Association for the Advancement of Science |
| 2001-present | Member | Knight Cancer Institute |
| 2003-present | Adjunct member | Oregon Stem Cell Center |
| 2003-2010 | Member | Developmental Biology Society |
| 2003-present | Member | American Gastroenterology Association |
| 2004-present | Member | International Society for Stem Cell Research |
| 2010-present | Member | American Association for Cancer Research |

**Service to Professional Publications**

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| --- | --- |
| 2005-present | Editorial Board, *International Stem Cell Research* |
| 2014-present | Editorial Board, *Cellular and Molecular Gastroenterology and Hepatology* |
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**Ad hoc peer-reviewed manuscript reviewing**

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| --- | --- |
| 2003 | Molecular Carcinogenesis |
| 2005 | Molecular Carcinogenesis |
| 2006 | J of Cell Biol; Lab Invest; Am J Physiol; Gastroenterology |
| 2007 | PNAS; Blood; Genesis; Cell Dev Diff; Gastroenterology |
| 2009 | Gastroenterology; Dev Dynamics |
| 2010 | Nature; Stem Cells; Gastroenterology |
| 2011 | Gastroenterology; Stem Cell Res |
| 2012 | Gastroenterology; Am J Physiol; Stem Cell Res; PloS ONE |
| 2013 | Stem Cell Res; PloS ONE |
| 2014  2015-present | Stem Cell Res; Gastroenterology  PloS ONE; Gastroenterology; CMGH |

Government Service

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Other Professional Ad Hoc Service

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | 2006 | Crohns and Colitis Foundation | Ad hoc Grant Review | | 2007 | Philip Morris External Research Program | Ad hoc Grant Review | | 2010-2016 | Crohns and Colitis Foundation | Ad hoc Grant Review. Senior Research Awards and Research Initiatives. | | 2013-2016 | Crohns and Colitis Foundation | Ad hoc Grant Review. Career Development and Research fellowship awards. | | 2006-2013 | NIH/NCI | Grant review, Molecular Oncogenesis, member | | 2015-present | NIH/NIDDK | Grant review | |  |  |

**IV. UNIVERSITY AND PUBLIC SERVICE**

University Service

Oregon Health and Sciences University

|  |  |
| --- | --- |
| 2001-present | Faculty member, Graduate program in Molecular & Cellular Biosciences |
| 2001-present | Faculty Member, OHSU Knight Cancer Institute, Program in Cancer Biology |
| 2001 | Member, Search committee for Dean of the School of Medicine. |
| 2001-present | Member, Cell and Developmental Biology Graduate Program |
| 2002-2010 | Cell and Developmental Biology Graduate student tracking committee |
| 2002-present | Various PMCB student Qualifying Examination committees (see below) |
| 2003-2009 | OHSU Medical Scientist training program admissions committee |
| 2004-2007 | Chair, PMCB comprehensive examination committee |
| 2004-2007 | Search committee for OSSC faculty |
| 2006-2011 | Developmental Training Grant advisory committee |
| May-June 2007 | Bodyworlds, OHSU Thematic Weeks co-coordinator, Dermatology |
| 2007 | Prepared materials for the Dermatology ACGME Site Visit |
| 2007 | Search committee for Chairman of the Department of Otolaryngology. |
| 2008-2011 | Oregon Stem Cell Research Oversight Committee |
| 2008-present | Faculty Council |
| 2009,11,13 | Vollum Post-doctoral fellow series, Balancing Career and Family roundtable, Grant review and interacting with your Program director |
| 2009-present | Program in Molecular and Cellular Biology steering committee, representative for CANB |
| 2009-2017 | Program in Cancer Biology, Graduate education Committee Co-chair |
| 2009-present | Member, Cancer Biology Faculty |
| 2010-present | Advisory Committee for Training program in Molecular Basis of Skin Pathobiology. |
| 2011 | Search committee, Chairperson of CDB/Knight Basic Research Director |
| 2012-2013 | Urology Faculty search committee |
| 2012-2013 | Cell and Developmental Biology Tumor Microenvironment Faculty search committee |
| 2011-present | Oversight committee, Histopathology Shared Resource |
| 2013-present | Cell and Developmental Biology Graduate Program Steering committee |
| 2013-2015 | Faculty stabilization/transition strategy for basic science advisor to the Dean |
| 2013-2015  2015  2015-present  2014  2016-2017  2016-present  2016-present  2016-18  2017-18  2018  2018-present  2018-2019  2018-2019  2019  2019-present  2019-present  2019  2019-present  2020 | Chair, Search committee for Collaborative Research Faculty  Dean’s advisory committee for Basic Science  Junior Faculty Advancement Program committee/CDCB/SOM  Summer internship program, co-organizer  OHSU/Univ of Oregon Training Cooperative Initiative/Oregon Dev Biology Program  Faculty Council  Co-organizer of the Multi-Disciplinary GI working group, OHSU  Biochemistry Chair search committee  Hosted visiting scholar from Thailand, Dr. Metawee Srikummool. OHSU Global Activity  Search committee, Division Chief, Gastroenterology  NW Microbiome planning committee  Knight Cancer Institute Strategic Visions  Postdoctoral Program review committee  Search Committee for GI division chair  OHSU2025, 6.2 co-leader  OHSU Medical Scientist training program admissions committee  PhD Bargaining team—two sessions  MD/PhD Admissions Committee  Covid-19 Animal taskforce |

OHSU/Knight Cancer Institute

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| --- | --- |
| 2001-present | Faculty Member, Program in Cancer Biology |
| 2009-2018 | Co-chair graduate education committee, Cancer Biology Graduate Program |
| 2012-present  2016-2019  2016-2017  2017 | Co-Leader, Program in Cancer Biology  Strategic Plan Committee  Space planning subcommittee  CB/TO Retreat, organizer |

OHSU/miscellaneous

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| --- | --- |
| 2001-2016 | Student Research Forum/Research Week, talk or poster judge |
| 2010 | Teacher’s Advisory Presentation |
| 2012-present | Knight Cancer Institute pilot grant review |
| 2013-2016 | PMCB training grant fellowship reviewer |
| 2013 | Cancer Biology Graduate training grant fellowship reviewer |
| 2013-2015 | Awards committee member, graduate studies (best dissertation, thesis, vertex scholar) |
| 2013-17  2016-present  2016-present  2016-2017  2016  2017  2018  2017-present | Circle of Giving Grant Review  Melanoma Task Force  Multi-disciplinary Colorectal Cancer Group, co-leader  Planned two retreats for the Oregon Developmental Biology Program  Planned Dr. Shirley Tilghman visit to OHSU to support faculty and student mentorship  Attended the OHSU/UofO research Collaborative Summit  Microbiome Advisory Committee  Melanoma working group |

**Public Service**

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| --- | --- |
| 2002 | SOAR Science Education Partnership program, OHSU |
| 2002-2005 | Brain exhibit, Science Fair, Oak Creek Elementary School |
| 2002-2015 | Scientific emersion, curriculum enrichment, grades 1-6, Oak Creek |
| May 9-15, 2004 | 54th Intel International Science and Engineering Fair Grand Judge, Portland, OR |
| 2005-2007 | Mentor/Outside Expert, Senior Project, Riverdale High School (Chris Lee, 2005; Kristin Yee, 2007) |
| 2007 | Bodyworlds Volunteer, Portland, OR (summer) |
| 2014-2015  2018 | Knight/Komen Breast Cancer Outreach Dialogue  Scientific Advisor, science fair, Lake Oswego Junior High |
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V. TEACHING AND MENTORING

**Formal Scheduled Classes for OHSU Students:**

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| --- | --- | --- | --- | --- | --- |
| **Qtr** | **Academic Yr** | **Course No. & Title** | **Teaching Contribution** | **Units** | **Class Size** |
|  | 2002-2014 | Translational Topics in Dermatology Research | **Lecturer-** Coordinate basic science exploration of a clinical disease. Facilitate discussion, evaluate presentations |  | 8-10 Graduate, Medical, M.D./Ph.D. |
| F | 2002  2003 | CELL610: Tools for a career in Cell and Molecular Biology | **Lecturer-** Prepared and presented one 90-min. lecture, wrote and evaluated exam questions |  | ~10 Graduate, M.D./Ph.D. |
| W | 2002  2004 | CELL618: Mechanisms  of Development | **Lecturer**, Prepared and presented two 90-min. lectures, wrote and evaluated exam questions |  | ~5-10 Graduate, M.D./Ph.D. |
| W | 2008 | CELL618: Mechanisms  of Development | **Lecturer**, Prepared and presented four 90 min. lectures, guided the writing and publication of a mini-review on asymmetric cell division |  | ~12 Graduate, M.D./Ph.D. |
| S | 2003  2005  2007  2008-2016 | CELL616: Advanced Topics in Cancer Biology | **Lecturer**, Prepared and presented two 90 min. lectures, wrote and evaluated exam questions |  | ~5-8 Graduate, M.D./Ph.D. |
| S | 2002  2004  2006 | CELL611: Structure and Function of Cells in Tissues | **Lecturer**, Prepared and presented two 90 min. lectures, wrote and evaluated exam questions |  | ~5-8 Graduate, M.D./Ph.D. |
| W | 2003  2004  2005  2006 | CON605: PMCB journal club | **Lecturer**, Prepared and presented two 90 min lectures. |  | ~15-20 Graduate, M.D./Ph.D. |
| S | 2004 | CON653 | **Lecturer**, Prepared and presented one 90 min. lecture, wrote and evaluated exam questions |  | Graduate, M.D./Ph.D. |
| S | 2005 thru  present | CON665 | **Lecturer**, Prepared and presented two 90 min. lectures, wrote and evaluated exam questions |  | Graduate, M.D./Ph.D. |
| S | 2013-15 | CON665 | **Co-director** |  | Graduate, M.D./Ph.D. |
| Sum | 2006  2007  2008  2010  2012 | CELL/CANB620: Model  Systems | **Lecturer,** Prepared and presented one 4-hour lecture and hands-on lab |  | 5-6  Graduate, M.D./Ph.D. |
| F | 2012-15 | CELL606: ethics | **Lecturer,** Prepared and presented one 2-hour workshop on mentorship |  | ~20-40 Graduate, M.D./Ph.D. |
| W | 2013-16 | MGEN624: Gene and Cell Therapy | **Lecturer** |  | ~5 graduate |
| W | 2014-16 | CELL/CANB613: Tissue Biology | **Lecturer,** Prepared and presented two 2 hour class periods exploring focused topic |  | ~10 Graduate M.D./Ph.D. |
| W | 2014-15 | CELL/CANB613 | **Co-director** |  | ~10 Graduate M.D./Ph.D. |
| Spr | 2015 | NANO-610 3D organ culture | **Co-director** |  | ~10  Graduate  MD/PhD |
| F | 2019-20 | Cancer Intersession | **Lecturer (how many times. . .four)** |  | Medical students |
|  | 2019-20  proposed | NANO-xxx How to get the most out of graduate school and beyond | **Director** |  |  |

**Formal Scheduled Classes for non-OHSU Students:**

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| --- | --- | --- | --- | --- | --- |
| **Qtr** | **Academic Yr** | **Course No. & Title** | **Teaching Contribution** | **Units** | **Class Size** |
|  | 2002-2014 | Translational Topics in Dermatology Research Conference | **Lecturer,** Coordinate basic science exploration of a clinical disease. Facilitate discussion, evaluate presentations |  | ~5-10 Faculty members |
|  | 2003 2005 | CELL616: Advanced Topics in Cancer Biology | **Lecturer**, Prepared and presented two 90 min. lectures, wrote and evaluated exam questions |  | ~1-2 Faculty members |
|  | 2007  2008-present | CELL606: ethics | **Lecturer**, Prepared and presented one 2-hour workshop on mentorship |  | ~20 Fellows |
|  | 2012  2013 | SOAR Science Education Partnership Program | **Discussant** |  | ~20 high school students |
|  | 2002 | Science Fair Brain Exhibition | **Exhibitor/lecturer** |  | ~300 elementary school students |
|  | 2002-2005 | Scientific emersion, curriculum enrichment, grades 1-6, Oak Creek Elementary School | **Scientific leader** |  | ~60 elementary school students |
|  | 2002-2007 | 54th Intel International Science and Engineering Fair | **Grand Judge** |  | ~100 students |
|  | 2007 | Bodyworlds | **Volunteer** |  |  |
|  | 2010-present | Scientific emersion, curriculum enrichment, grades 1-6, Oak Creek Elementary School | **Scientific leader** |  | ~60 elementary school students |
|  | 2017 | Science Fair Judge  Lake Oswego Junior High School | **Judge** |  | ~40 students |

**Postgraduate and Other Courses:**

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| --- | --- | --- |
| **YEAR** | **Course / Institution** | **Role** |
| 2002-present | Translational Topics in Dermatology Research Conference | **Lecturer**, Coordinate basic science exploration of a clinical disease. Facilitate discussion, evaluate presentations |
| 2008 | CELL618: Mechanisms of Development | **Lecturer**, Prepared and presented four 90 min. lectures, guided the writing and publication of a mini-review on asymmetric cell division |
| 2003 2005 2007  2008-2016 | CELL616: Advanced Topics in Cancer Biology | **Lecturer**, Prepared and presented two 90 min. lectures, wrote and evaluated exam questions |
| 2006 2007 | CELL620: Model Systems | **Lecturer**, Prepared and presented one 4-hour lecture and hands-on lab |
| 2012-  2015 | CELL606: Ethics | **Lecturer**, Prepared and presented one 2-hour workshop on mentorship |

**High School and Undergraduate Students Supervised or Mentored:**

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| --- | --- | --- | --- | --- |
| **Dates** | **Name** | **Program or School** | **Faculty Role** | **Current position** |
| 2005 | Chris Lee | Riverdale High School, Portland, OR | Mentor | Unknown |
| 2005 | Ashley Shelton | Sandia Preparatory School, Albuquerque, NM | Mentor | Unknown |
| 2005 | Catalina Hernandez | CURE Program | Mentor | Unknown |
| 2006 | Melissa Abel | Lake Oswego High School, Lake Oswego, OR | Mentor | Duke Medical School |
| 2006 | Kevin Carroll | successful competition for an AGA Fellowship | Mentor | OHSU Medical School |
| 2006-07 | Trevor Levin | Murdock Fellow, successful competition for an AGA Fellowship | Mentor | Director and Founder, Urology Dx |
| 2007 | Kristin Yee | Riverdale High School, Portland, OR | Mentor | Unknown |
| 2009-10 | Patsy O’Brien | Murdock Fellow | Mentor | OHSU Medical School |
| 2009-2011, 2014 | Sidharth Sengupta, | Westview High School, Portland, OR | Mentor (CDCB Intern) | Case Western, undergraduate |
| 2013 | Casey Kernan | Oregon State University, Corvallis, OR | Mentor | University of Kansas Medical School |
| 2013 | James Abe | Duke University | Mentor | unknown |
| 2015-2016 | Ally Gallagher | Dartmouth University | Mentor (CDCB Intern) | OHSU Medical School |
| 2016 | Michael Parappilly | University of Oregon | Mentor (CDCB Intern) | OHSU, technician |
| 2017 | Will Sato | Oregon State University | Mentor (CDCB Intern) | unknown |
| 2017 | Noelle McPhail | Yale University | Mentor (CDCB Intern) | unknown |
| 2017-2019 | Sarah Bumatay | Portland State University | Mentor (EXITO program) | Unknown |
| 2018 | Colin Whitmore | Reed College | Mentor (Equity Program) | Reed College |
| 2018 | Juliette Yee | Smith College | Mentor (CDCB intern) | OHSU, technician (grad school bound) |
| 2019 | Mirenna Scott | Claremont McKenna College | Mentor (CDCB intern) | Claremont McKenna College |
| 2019 | Dahlia Maroney | Univ British Columbia | Mentor (CDCB intern) | Univ British Columbia |
| 2019-present | David Sprott | Portland State | Mentor (EXITO program) |  |

**Predoctoral Students Supervised or Mentored:**

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| --- | --- | --- | --- | --- |
| **Dates** | **Name** | **Program or School** | **Faculty Role** | **Current position** |
| 2002 | Kendra Madrid | OHSU, CDB | Rotation supervisor | MS awarded 2004 |
| 2002 | Kristine Rose | OHSU, CDB | Qualifying Exam Committee | unknown |
| 2002-2004 | Kendra Madrid | OHSU, CDB | Thesis Advisor | MS awarded 2004 |
| 2002-2004 | Paige Davies | OHSU, CDB | Dissertation Adv Com (DAC) | Instructor, OHSU, CDCB |
| 2002-2007 | Wendy Knosp | OHSU, MMG | DAC | PhD awarded 2007 |
| 2003 | Adria Decker | OHSU, PMCB | Rotation supervisor | PhD awarded 2009; Health Fraud Analyst, Oregon Dept of Justice |
| 2003-2009 | Adria Decker | OHSU, MMG | Dissertation Advisor | PhD awarded 2009; Health Fraud Analyst, Oregon Dept of Justice |
| 2004 | Youngsup Song | OHSU, CDB | Qualifying Exam Committee | PhD awarded 2004 |
| 2004 | Adria Decker | OHSU, MMG | Qualifying Exam Committee | PhD awarded 2009; Health Fraud Analyst, Oregon Dept of Justice |
| 2004 | Sylvia Nelson | OHSU, MMG | Qualifying Exam Committee | Instructor, OHSU, CDCB |
| 2004 | Kathy Lew-Ells | OHSU, MMG | Qualifying Exam Committee | unknown |
| 2004 | Susannah Weyte | OHSU, CDB | Qualifying Exam Committee | unknown |
| 2004 | Paige Davies | OHSU, CDB | Dissertation examination com | Instructor, OHSU, CDCB |
| 2004-2008 | Julie Escamilla | OHSU, MMG | DAC, chair | PhD awarded 2008 |
| 2005 | Patrice Held | OHSU, MMG | Dissertation examination com, chair | PhD awarded 2005 |
| 2005 | Dan Sherbenou | OHSU, CDB, MSTP | Qual Exam Committee | PhD awarded 2009 |
| 2005 | Sandra Fernandez | OHSU, CDB | Qual Exam Committee | PhD awarded 2005 |
| 2005 | Xiao-Xun Sun | OHSU, MMG | Qual Exam Committee | Instructor, OHSU, MMG |
| 2005 | Anne E. Powell | OHSU, PMCB | Rotation supervisor | PhD awarded 2010; Assistant Professor, University of Oregon |
| 2005-2010 | Anne E. Powell | OHSU, CDB | Dissertation Advisor | PhD awarded 2010; Assistant Professor, University of Oregon |
| 2005-2009 | Sylvia Nelson | OHSU, MMG | DAC | Instructor, OHSU, CDCB |
| 2006 | Anne Powell | OHSU, CDB | Qual Exam Committee | PhD awarded 2010; Assistant Professor, University of Oregon |
| 2006 | Zhongya Wang | OHSU, MMG | Qual Exam Committee | unknown |
| 2006 | Sophia Bornstein | OHSU, PMCB, MSTP | Rotation supervisor | MD/PhD awarded 2012; OHSU, Rad/Onc Fellow |
| 2006 | Lawrence Gray | OHSU, PMCB | Rotation supervisor | unknown |
| 2006-2009 | Ashleigh Miller | OHSU, MMG | DAC | PhD awarded 2009 |
| 2006-2009 | Dan Sherbenou | OHSU, CDB, MSTP | DAC | PhD awarded 2009 |
| 2007 | Parvathy Ramakrishnan | OHSU, CDB | Qual Exam Committee | unknown |
| 2007 | Wendy Knosp | OHSU, MMG | Dissertation exam committee | PhD awarded 2007 |
| 2007 | Katanya Kapeli | OHSU, CDB | Qual Exam Committee | unknown |
| 2007 | Trevor Levin | OHSU, PMCB | Rotation supervisor | Ph.D. awarded 2012, Post-doctoral fellow, OHSU (Dr. Joe Gray) |
| 2007-2010 | Chang Liu | OHSU, CDB | DAC | PhD awarded 2010, resident Wash U SOM |
| 2007-2012 | Trevor Levin | OHSU, CDB | Dissertation Advisor | Ph.D. awarded 2012, Post-doctoral fellow, OHSU (Dr. Joe Gray) |
| 2008 | Raymond Hickey | OHSU, CDB | Qual Exam Committee | PhD awarded 2012 |
| 2009 | Ruth White | OHSU, CDB, MSTP | Qual Exam Committee | PhD awarded 2012 |
| 2009 | Katie Van Hook | OHSU, CDB | Qual Exam Committee | PhD awarded 2013 |
| 2009-2014 | Mahnaz Jangorborn | OHSU, CANB | DAC, chair | PhD awarded 2014 |
| 2009-2015 | Aaron Wortham | OHSU, CANB | DAC | MS awarded 2016 |
| 2010 | Kristin Diaz | OHSU, MMG | Dissertation Exam Committee, chair | PhD awarded 2010 |
| 2010-2013 | Nathan Donley | OHSU, CDB | DAC | PhD awarded 2013 |
| 2011 | Brandon Tarlow | OHS, CDB, MSTP | Qual Exam Committee | CDB graduate student |
| 2011 | Yulong Su | OHSU, PMCB | Rotation supervisor | CDB with Dr. Rosalie Sears |
| 2011 | Tyler Risom | OHSU, PMCB | Rotation supervisor | CANB with Dr. Rosalie Sears |
| 2011-2013 | Matthew McCarroll | OHSU, CDB | DAC, chair | PhD awarded 2013 |
| 2011-2014 | Brandon Tarlow | OHSU, CDB, MSTP | DAC, chair | PhD awarded 2014 |
| 2012 | Derek Zachman | OHSU, CDB, MSTP | Qual Exam Com, chair | CDB student |
| 2012 | Charlie Gast | OHSU, MSTP | Rotation supervisor | Currently in laboratory |
| 2013 | Matthew McCarroll | OHSU, CDB | Dissertation Exam Committee, chair | PhD awarded 2013 |
| 2013 | Nathan Donley | OHSU, CDB | Dissertation Exam Committee | PhD awarded 2013 |
| 2013 | Katherine Michaelis | OHSU, MSTP | Rotation supervisor | First year medical school |
| 2013 | Yuhan Wang | OHSU, CDB | Qual Exam Committee | PhD awarded 2017 |
| 2013 | Sandra Baker | OHSU, BME | Qual Exam Committee | BME student |
| 2013 | Kevin Watanabe-Smith | OHSU, CANB | Qual Exam Committee | CANB student |
| 2013-2014 | Brittany Daughtry | OHSU, CDB | DAC | CDB student |
| 2013-2018 | Charlie Gast | OHSU, CANB, MSTP | Dissertation Advisor | CANB student (Wong) PhD 2018 |
| 2013-2016 | Derek Zachman | OHSU, CDB, MSTP | DAC, chair | CDB student (Harv Fleming) PhD 2016 |
| 2013-2016 | Sandra Baker | OHSU, BME | DAC | BME student |
| 2013-2017 | Yuhan Wang | OHSU, CDB | DAC, chair | CDB student (Markus Grompe) PhD 2017 |
| 2013-2017 | Kevin Watanabe-Smith | OHSU, CANB | DAC, chair | CANB student (Brian Druker) PhD 2017 |
| 2014 | Amber Bannon | OHSU, CDB | Qual Exam Committee, chair | CDB student |
| 2014 | Shannon Liudahl | OHSU, CANB | Qual Exam committee | CANB student |
| 2015 | Chris Cheng | OHSU, CDB | Qual Exam Committee, chair | CDB student |
| 2015 | Mohammed Farhad | OHSU, CANB | Qual Exam Committee | CANB student |
| 2014-2018 | Ben Doron | OHSU, CDCB | DAC | CDB student (Peter Kurre) PhD, 2018 |
| 2015-2017 | Erica Goddard | OHSU, CDCB | DAC, chair | CANB student (Pepper Schedin) |
| 2017 | Alex Quackenbush | OHSU, CANB | Qual Exam, chair | CANB student |
| 2016-2017 | John Bulter | OHSU, MSTP | SOC committee | Medical student |
| 2017-present | Jacob Van Winkle | OHSU, MMI | DAC | MMI student (Tim Nice) |
| 2018 | Hsin-Yun Lin | OHSU, CANB | Qual Exam, chair | CANB student |
| 2019-present | Hannah Sanford-Crane | OHSU, CANB | DAC, chair | CANB student (Mara Sherman) |
| 2019-present | Sudarshan Iyer | OHSU, CANB, MSTP | DAC | CDB student (Monika Davare) |
| 2019-present | Breanna Caruso | OHSU, CANB | DAC | CANB student (Amy Moran) |

**Postdoctoral Fellows and Residents Directly Supervised or Mentored**

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| --- | --- | --- | --- | --- |
| **Dates** | **Name** | **Position & Funding** | **Faculty Role** | **Current Position** |
| 2003-2004 | Adnan Rizvi, MD | Surgery resident, Dept Surgery | Research supervisor | Physician Minneapolis Cardiology Associates |
| 2004-2009 | Paige Davies, PhD | Post-Doc Researcher; Dermatology Foundation, Doctor’s Cancer Fdn | Research supervisor | Instructor, OHSU |
| 2009-2012 | Eric Anderson, MD/PhD | Hem/Onc Fellow; Medical Research Fdn | Research supervisor | Assistant Professor, OHSU |
| 2009-2013 | Alain Silk, PhD | Post-Doc Researcher; Collins Grant, Knight Cancer Institute | Research supervisor | Faculty, American Univ, Washington D.C. |
| 2009-2011 | Marcus Monroe, MD | ENT resident; Medical Research Fnd, Am Acad of Oto-Head/Neck Surgery Fnd | Research supervisor | Assistant Professor, University of Utah |
| 2009-2011 | Thomas Russell, MD | Ped/Onc Fellow | Scholarly Advisory Com | unknown |
| 2010-2011 | Crystal Hessman/Erickson,MD | Surgery resident, Dept Surgery | Research supervisor | Resident, OHSU |
| 2011-2012 | Emily Bubbers, MD | Surgery resident;  Medical Research Fnd | Research supervisor | Surgeon. Helena, MT |
| 2010-2011 | Daniel Clayburgh, MD/PhD | ENT resident; Medical Research Fnd, Am Acad of Oto-Head/Neck Surgery Fnd | Research supervisor | Assistant Professor, OHSU Otolaryngology |
| 2011-2019 | Nicholas Smith, PhD | Post-doctoral fellow; Medical Research Fnd, Knight Cancer Institute | Research supervisor | Industry |
| 2011-2013 | Kerrie Adams, MD | OB/Gyn Fellow; American Urogynolcology Society | Research supervisor | Fellow, United States Navy |
| 2010-2014 | Elie Traer, MD/PhD | Hem/Onc Fellow; OCTRI KL2 award | Research Mentor | Assistant Professor, OHSU, Hematology Oncology |
| 2012-2014 | Sophia Bornstein, MD/PhD | Rad Med Fellow; Medical Research Fnd,  Knight Cancer Institute/Cathy & Jim Rudd Career Dev Award | Research supervisor | Assistant Professor, OHSU, Radiation Medicine |
| 2013-14 | John Gleysteen, MD | ENT resident; Dept of Oto, Am Acad of Oto HN Surgery Fnd | Research supervisor | Assistant Professor, Thomas Jefferson University (2018) |
| 2013-2016 | Lara Riegler, MD | Peds/Onc Fellow; Med Research Fnd | Research supervisor, SAC | Assistant Professor, University of Virginia |
| 2013-2014 | Christina Budde, MD | Surgery Resident; Dept of Surgery | Research supervisor | Fellow, Washington University Sch of Med |
| 2014-2016 | Nikki Weighard, MD | Surgery Resident; dept of Surgery | Co mentor | VCU Health (2019) |
| 2015 | Edward El Rassi, MD | Oto Resident | Mentor | Assistant Professor, Oklahoma University |
| 2016-2018 | Luai Zarour, MD | Surgery Resident; Dept of Surgery (MRF, Collins, Fletcher) | Co-mentor (Billingsley, Mayo) | Current resident |
| 2017-2019 | Yvette Anderson | Oto Resident | Co mentor | Current resident |
| 2018- | Matthew Dietz, MD | Peds/Onc Fellow (MRF, Talwalkar award) | Mentor | fellow |
| 2018- | Brett Walker, MD | Surgery Resident; Dept Surgery | Co-mentor (Billingsley, Mayo) | resident |
| 2018- | Tara Henn, MD | Oto Resident | Co-mentor | Resident |
| 2019- | Thomas Sutton, MD | Surgery Resident, Dept Surgery | Co-mentor (Billingsley, Mayo) | resident |

FORMAL FACULTY MENTORING

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dates** | **Name** | **Position while Mentored** | **Mentoring Role** | **Current Position** |
|  | Kim Hein Dao, MD | Faculty | K08 advisor | Assistant professor |
|  | Anuprya Agarwal, PhD | Post-doctoral fellow | K99 advisor, mentor committee | Instructor |
|  | V Liana Tskitis, MD | Faculty | Research advisor | Assistant Professor |
| 2014-2019 | Naoki Oshimori, PhD | Faculty | Junior faculty | Assistant professor |
| 2016- | Julia Maxon, PhD | Faculty | Junior faculty | Assistant professor |
| 2019- | Isabella Rauch | Faculty | Junior faculty | Assistant Professor |

VI. invited presentations

Symposia and Workshops: International

2012 99th Indian Science Congress**,** Bhubaneswar, India.

2013 European Molecular Biology Organization, Cell-cell fusion, Ein Gedi, Israel

Symposia and Workshops: National

2003 52nd Montagna Symposium on the Biology of the Skin, Snowmass, CO

2005 Crohns and Colitis Foundation, Boston, MA

2005 Federation of American Societies for Experimental Biology, Gastrointestinal Tract XI: Innovations in GI Therapy and Research, Snowmass, CO

2006 American Gastroenterology Association: Stem cells in gastrointestinal development, regeneration and neoplasia. Tyson’s Corner, VA

2008 NIH/NIDDK, Local influences on health and repair of intestinal epithelium, Washington D.C.

2008 Experimental Biology. Genomic and Proteomics in Colon Cancer, San Diego, CA

2010 NIH/NCI, Tumor microenvironment workshop, Nashville, TN

2010 American Association of Cancer Research. Colorectal Cancer Conference. Philadelphia, PA

2011 Gordon Research Conference. Cell-cell fusion. Biddeford, ME

2011 American Association of Cancer Research. Tumor Microenvironment, Orlando, FL

2012 Experimental Biology, Colon Cancer Stem Cells, San Diego, CA

2012 American Gastroenterology Association. Freston Conference. Gastrointestinal stem cells. Chicago, IL

2013 Gordon Research Conference. Mucosal Health and disease. Easton, MA

2013 Federation of American Societies for Experimental Biology, Gastrointestinal Tract XIV: Stem Cells, Adaptation, Inflammation and Cancer. Steamboat Springs, CO

2014 American Society of Bone Marrow Transplantation, Dallas, TX.

2015 Federation of American Societies for Experimental Biology, Gastrointestinal Tract XIVI: Stem Cells, Adaptation, Inflammation and Cancer. Steamboat Springs, CO, organizer.

2015 Montagna Symposium on the Biology of the Skin, Shalishan, OR.

2016 Crohns and Colitis Foundation-Advances in Inflammatory Bowel Disease, Lake Buena Vista, FL, Invited speaker.

2017 Federation of American Societies for Experimental Biology, Gastrointestinal Tract XVII: Current Development in the GI tract, the microbiota and beyond. Steamboat Springs, CO, session chair.

2018 Digestive Disease Week, Washington DC, speaker, session organizer.

2018 Experimental Biology, San Diego, CA, invited speaker.

2019 Digestive Disease Week, San Diego, CA, invited speaker, podium

2019 Keystone Meeting, GI stem cells and plasticity, Keystone, CO, invited speaker

2019 Society for Developmental Biology, Portland, OR, talk

2019 NIH tumor stroma plasticity, Washington, D.C., invited speaker

2020 Gordon Research Conference, Cell-Cell Fusion. Invited speaker, Stonehill College, Easton, MA Reschedule due to Covid-19.

**Invited Lectures/Seminars: International**

2007 Cambridge Cancer Research Institute, (host: Dr. Douglas J. Winton), Cambridge, England.

2020 King’s College London, Randall Centre and Comprehensive Cancer Centre seminar, (Host: Dr. Jody Rosenblatt), London, England.

**Invited Lectures/Seminars: National**

2002 Oregon Dermatology Society Meeting, Portland, OR

2002 University of Oregon, Department of Biology, (host: Dr. Karen Guillemin), Eugene, OR

2006 University of Virginia, Digestive Health Center of Excellence, (host: Dr. Steven M. Cohn), Charlottesville, VA.

2006 Vanderbilt University, Gastrointestinal Cancer Research Program, (host: Dr. Robert J. Coffey), Nashville, TN.

2007 Baylor College of Medicine, Department of Pediatric Gastroenterology, Hepatology and Nutrition (host: Dr. Mark A. Gilger), Houston, TX.

2007 University of Arizona, Department of Dermatology/Arizona Cancer Center (host: Mark Nelson), Tucson, AZ.

2010 Wake Forest University, (Host: Paul Dawson) Winston-Salem, NC.

2011 Children’s Hospital of Los Angeles, (host: Mark Frey), Los Angeles, CA

2012 University of Wisconsin, (host: Dr. Brenda Ogle) Madison, WI

2013 University of Colorado, (host: Pepper Schedin), Aurora, CO

2013 University of Pennsylvania, Comparative Oncology Seminar Series, invited speaker (host: Serge Fuchs), Philadelphia, PA

2014 University of Colorado, Ingram Cancer Center (host: Dr. Steve Anderson), Aurora, CO

2014 Vanderbilt University, Department of Gastroenterology, (host: Dr. Richard Peek), Nashville, TN

2016 University of Vermont, Cancer Center, (host: Dr. Markus Thali), Burlington, VT

2016 Ventana Medical Systems, CDX Webinar

2017 Oregon Developmental Biology Program, OHSU, invited talk

2020 Gained in Translational, virtual, invited talk (October 17, 2020)

**Invited Lectures/Seminars: OHSU**

2001 Oregon Cancer Institute Retreat, Skamania, WA

2001 Cell & Developmental Biology Seminar Series

2002 Medical Scientist Training Program Retreat, Welches, OR

2003 Department of Surgery Research Talks

2003 Program in Molecular and Cellular Biology Student Recruitment Seminar

2005 Cell and Developmental Biology Faculty Forum

2005 Dornbecher Children’s Hospital Pediatric Hematology/Oncology Research Conference

2006 Department of Pediatrics Research Talk

2006 Department of Hematology Oncology, Fellowship research conference series

2007 Vascular seminar series

2007 Oregon Stem Cell Center Research Talks

2007 Oregon Cancer Institute Retreat, Silverton, OR

2008 Cell and Developmental Biology Faculty Forum

2008 Oregon Cancer Institute Retreat, Troutdale, OR

2008 Oregon Stem Cell Center Forum

2008 Department of Biomedical Engineering Seminar Series

2009 Cell and Developmental Biology Faculty Forum

2009 Department of Biomedical Engineering Seminar Series

2009 Oregon Stem Cell Center Forum

2009 Medical Scientist Training Program Retreat, Timberline, OR

2010 Hematology Oncology Resident Research Forum

2010 Developmental Biology Symposium

2011 Cell and Developmental Biology Faculty Forum

2011 Esophageal Cancer Retreat

2011 Esophageal Cancer Salon

2011 Program in Scientific Inquiry

2012 Department of Surgery

2012 Cell and Developmental Biology Seminar Series

2012 Program in Scientific Inquiry

2012 Cell and Developmental Biology Faculty Forum

2012 Knight Cancer Institute Retreat, Skamania, WA

2012 Marquam Hill Lecture Series

2012 Esophageal Cancer Retreat

2013 Knight Cancer Institute Research Forum/Pancreatic Cancer

2013 Esophageal Cancer Retreat

2013 Medical Scientist Training Program Retreat, McMenamins Edgefield, Troutdale, OR

2013 Biomedical Engineering Seminar Series

2016 Pediatric Hematology Oncology

2017 Esophageal Cancer Retreat

2018 CEDAR, SAB meeting

2018 Esophageal Cancer Retreat

2018 Pediatric Hematology Oncology

2019 Knight Cancer Institute research Forum

2019 MD/PhD series

2019 Hematology/Oncology

**VII. RESEARCH AND CREATIVE ACTIVITIES**

**Research Program:** The Wong lab focuses on the regulation of epithelial cells by the cells in the microenvironment during homeostasis and in disease. As such we have two primary focus areas:

*The functional significance of cell fusion between circulating macrophages and intestinal stem cells on tissue regeneration and tumorigenesis.* Our laboratory discovered that circulating blood cells fuse with intestinal stem and tumor cells in the context of tissue injury and in the presence of an inflammatory microenvironment. Specifically, we have identified that macrophages (MФs) are a robust fusogenic partner with injured epithelia (both normal and tumor). Notably, because MФs are cells that functionally home to tissue via chemotactic attraction, can traffic through the body and reside in various tissues, we hypothesize that MФ-epithelial tumor cell fusion provides a mechanism to facilitate a cancer cell’s acquisition of aggressive, metastatic behavior. In this vein, we are actively engaged in determining the functional significance of cell fusion in tissue homeostasis and in pathology.

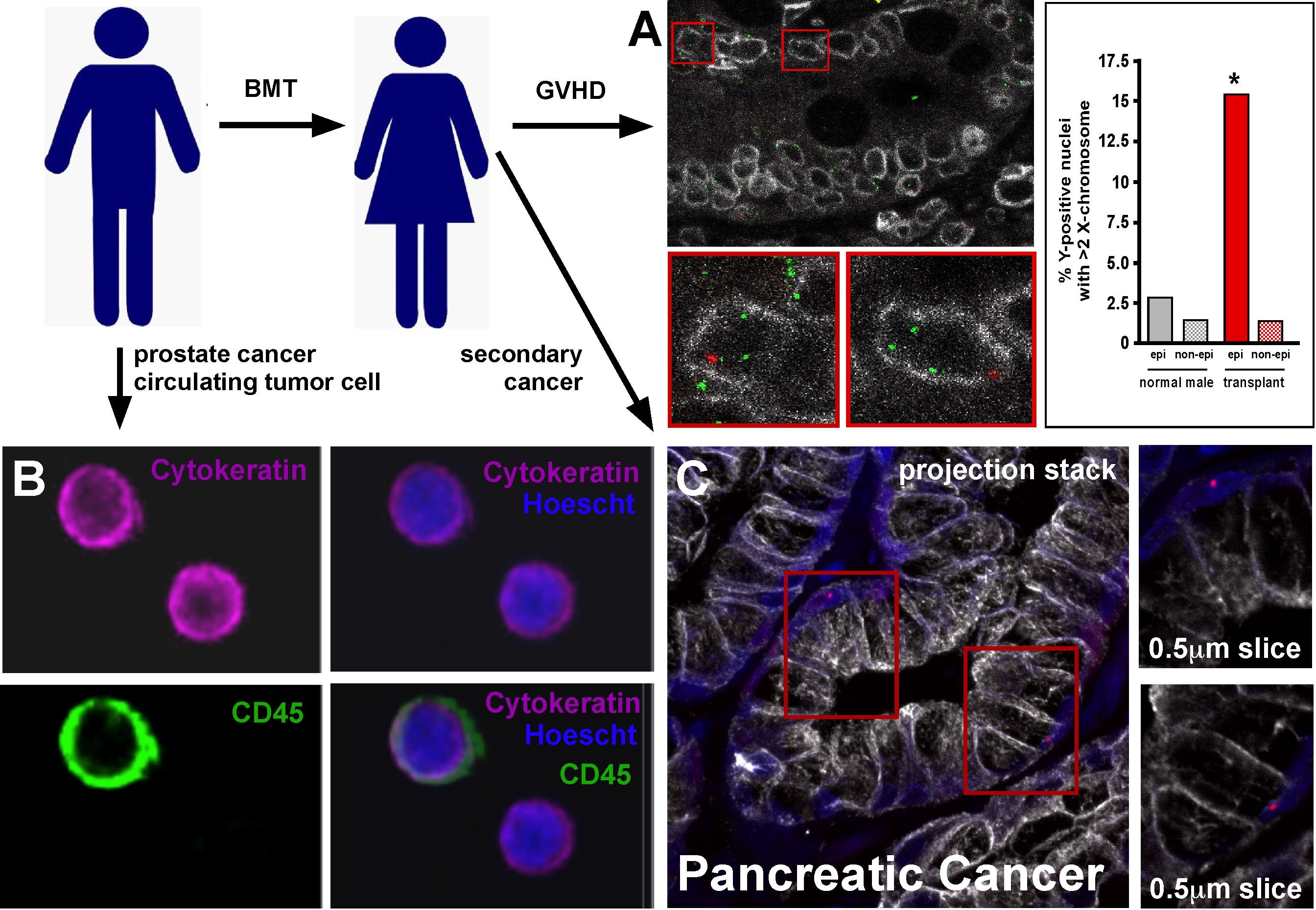


Figure 2. Cell fusion can be identified in patients with a gender mis-matched bone marrow transplant by tracking the Y-chromosome in graft-versus-host or tumor biopsies. Additionally, fusion may be present in circulating tumor cells that expression cytokeratin and CD45.

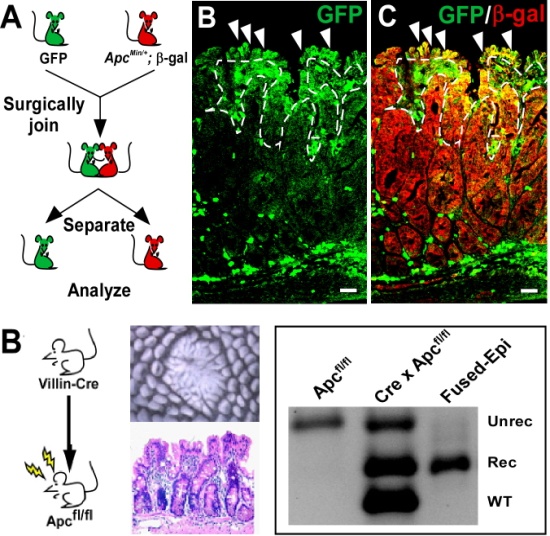




Figure 1. Blood cell fusion with intestinal tumor cells in an in vivo mouse model (A) and in cell culture. Fused cells are identified by dual marker expression or by activation of a Cre reporter.

Our group has taken an innovative approach toward defining the physiologic consequences of cancer cell fusion by establishing robust in vitro and in vivo murine models of fusion (Fig 1). Bone marrow transplantation of reporter-tagged cells in tumor-bearing mice as well as parabiosis between a tumor bearing mouse and GFP-transgenic mouse facilitated our discovery that MФs fuse with tumor cells, and possess a unique transcriptome identity from unfused cells. Further, our in vitro systems allows for live-cell imaging of cell fusion hybrids, karyotype analysis and definition of physiologic function relative to unfused tumor cells. Our group identified cell fusion in both murine (Fig 1) and human tumors (Fig 2), and in circulating tumor cells (CTCs) (Fig 2).

In addition to identifying cell fusion within tumors, we have also discovered that cell fusion imparts heterogeneous behaviors to the individually fused cells and that these fused tumor cells possess differential behaviors in the context of different microenvironments. An analysis of adhesive behaviors and cell proliferation on a microenvironment array revealed fused cells grow more aggressively than unfused tumor cells. Our data provides evidence that cell fusion is a mechanism for imparting diversity among tumor cells and has potential to result in selective clonal outgrowth of aggressive clones or may underlie therapeutic resistance. We have extended our cell fusion cancer studies to examining fusion in the context of epithelial injury and repair. We currently have studies aimed at understanding how cell fusion in the injured intestinal stem cell niche modulates normal homeostatic epithelial behavior. While the concept of cell fusion in cancer is over a century old, my laboratory is at the forefront of unraveling the functional significance and physiologic relevance of these intriguing cells.

*Regulation of intestinal stem cells during development, homeostasis and disease.* My laboratory is interested in how the various stem and progenitor cells of the intestinal epithelium are ordered and specifically how these populations are intricately regulated in the face of development, homeostasis and disease in order to maintain a function epithelial barrier. I have long-standing experience in the Wnt signaling pathway from my studies in Dr. Jeffrey Gordon’s laboratory where we determined that discrete levels of Wnt signaling within the niche resulted in stem cell selection during development. My laboratory has extended these studies into how Wnt signaling regulates the various stem and progenitor populations. In the process of investigating other potential regulatory elements, we discovered that a cell adhesion molecule, CD166 has a discrete molecular expression pattern within the base of the niche (Fig 3). We have determined that CD166 is expressed on the rapidly cycling Lgr5-expressing stem cells and adjacent Paneth cells—that provide a source of Wnt ligand. Further, we have ongoing studies investigating the role of CD166 in regulating multiple cell signaling pathways between these cells and determining the implication of loss of CD166 within the crypt niche on Paneth cell differentiation and stem cell function. Intriguingly, CD166 was initially reported to be an intestinal cancer stem cell marker. We and others have reported that CD166 over-expression in colorectal cancer correlates with poor prognosis. We have evidence that CD166 functions in part to coordinate discrete molecular signaling pathways that are essential for maintenance of the stem-differentiation axis. We are actively working on these studies in the normal stem cell niche and the cancer stem cell microenvironment, and have important implications on development of a therapeutic target to disrupt cancer cell maintenance.

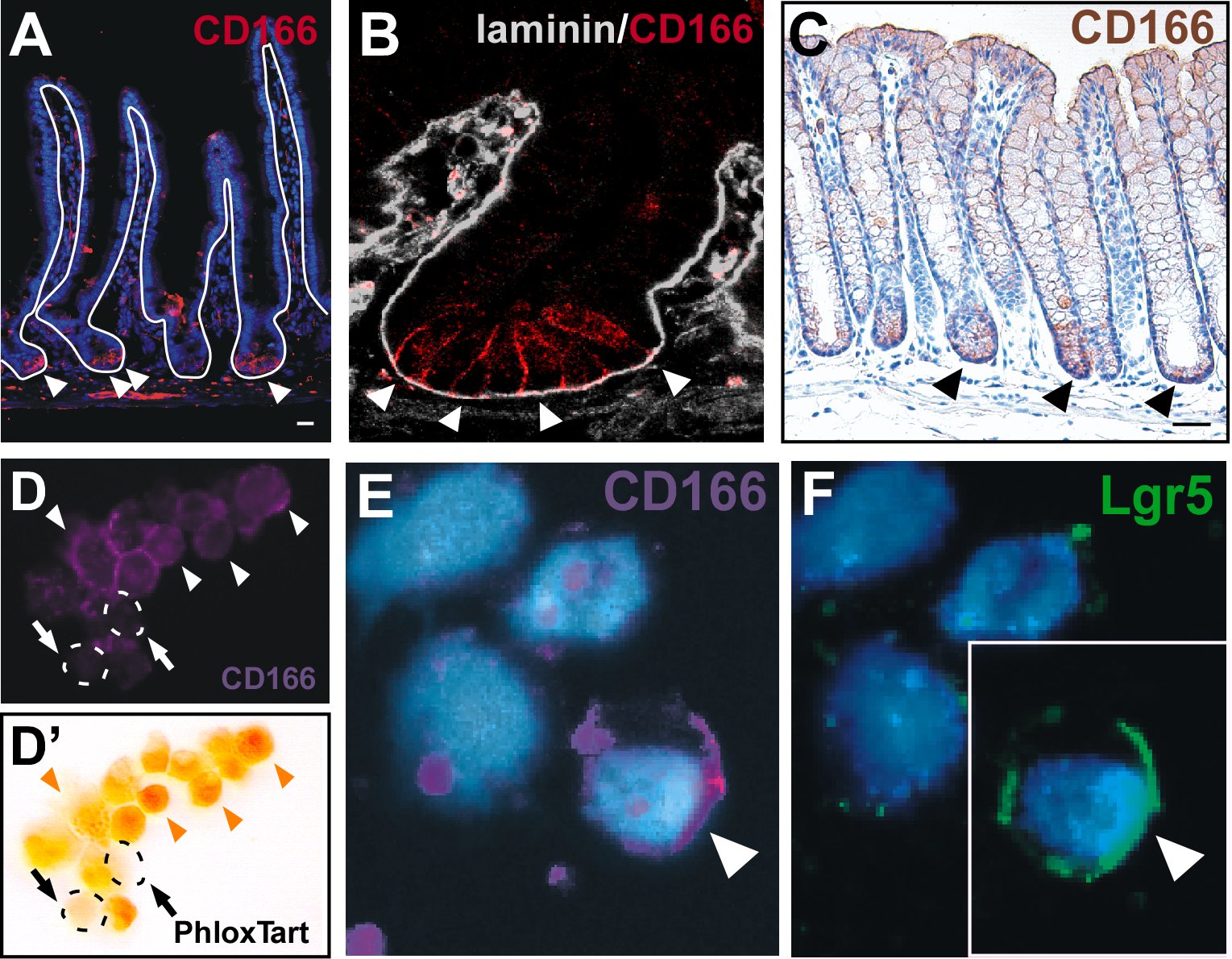


Figure 3. CD166 is expressed at the base of the small intestinal and colonic crypt (A-C) and is expressed on Lgr5-expressing stem cells and neighboring Paneth cells (D-F), as determined by immunohisto-chemical and FACS analyses.

Our group is a former member of the NIDDK/NIAID funded Intestinal Stem Cell Consortium. Through our collaborations in the consortium, we are involved in ongoing studies that encompass stem cell hierarchy and relationship in normal and injured tissue, regulatory cells of the stem cell niche and translational project. Among our many collaborations, we have engaged in tissue engineering of the small intestine with collaborators at Wake Forest University to re-seed intestinal cells (stromal and epithelia) onto acellularize scaffolds. These rich consortium collaborations have enhanced our ability to move our research into exciting new frontiers.

**RESEARCH AWARDS AND GRANTS:**

**CURRENT**

**Grant #** WI214841 (Wong) 8/1/2016 – 7/31/2020, req NCE 0.00 calendar

**Source:** Pfizer $150,000

**Title:** *Novel Circulating Epithelial Cells as an indicator of disease status and cancer risk*

The goal of this project is to investigate a fusion product of macrophages and epithelial cells as a biomarker for inflammatory bowel disease status and risk for colitis-associated colorectal cancer.

**Role:** Principal investigator

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**Grant #** CEDAR (Labat) 6/28/18-1/29/20

**Supporting Agency:** OHSU Knight Cancer Institute $24,000

**Title:** Identification of cancer circulating cells in the peripheral blood of low-dose CT scan individuals at high-risk of lung cancer

**Role:** Co-Investigator

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| **Grant #** CEDAR (Wong/Mohammed) 7/16/19-6/15/20  **Supporting Agency:** OHSU Knight Cancer Institute $120,000  **Title:** RNA-seq of CHCs  **Role:** Co-Investigator |
| **Grant #** AACR (Skalet) 7/1/18-6/30/20  **Supporting Agency:** OHSU Knight Cancer Institute $114,162  **Title:** Harnessing Circulating Hybrid Cell Biology and Ultrasensitive Single Cell Imaging Technology for Early Detection of Pancreatic Cancer  **Role:** Co-investigator |
| **Grant #** MRF (Skalet) 6/1/18-10/14/20 NCE  **Supporting Agency:** Medical Research Foundation $32,754  **Title:** Circulating Hybrid Cells as a Novel Biomarker in Uveal Melanocytic Tumors  **Role:** Co-investigator |

**Grant #** Horizon Knight Pilot Grant (Mayo) 8/1/17-7/31/20

**Supporting Agency:** OHSU Knight Cancer Institute $50,000

**Title:** Refining Circulating Tumor Cell Signatures to Facilitate Early Detection of Colorectal Cancer

**Role:** Co-Principal Investigator

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**Grant #** W81XWH-17-PRCRP-IA (Wong) 7/1/2018 – 6/30/2020 1.20 calendar

DOD $400,000

*Development of a Novel Circulating Tumor Cell Population for Early Detection of Recurrent Colorectal Cancer*

We will test the hypothesis that CHCs harbor cellular, molecular, and functional signatures associated with increased risk of metastatic spread of disease.

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**Grant #** No Number (Skalet) 10/1/2018 – 9/30/2020 0.12 calendar

Melanoma Research Foundation $83,365

*A novel peripheral blood biomarker for early diagnosis of uveal melanoma*

The proposed study will investigate CHC levels in patients with choroidal nevi, indeterminate choroidal tumors, and stage I-IV UM, to establish whether high CHC levels identify patients with lesions with metastatic potential.

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**Grant #** R01 (Frey) 4/1/2018 – 3/31/2023 0.12 calendar

NIH/University of Southern California $148,156

*The role of the ErbB4 and ErbB3 neuregulin receptors in intestinal epithelial regeneration*

The OHSU team will isolate Bmi1+ (progenitor/stem cells) and Lgr5+ intestinal stem cells from ErbB3 and ErbB4 knockout mice, using a novel combination of intestinal specific monoclonal antibodies, or by crossing the knockout mice onto specific GFP reporter backgrounds.

**Trainee awards:**

1. Matthew Dietz (Umpqua award, MRF, Talwakar award, Collins Medical Trust)
2. Brett Walker (Collins Medical Trust, MRF)
3. Tara Henn (Core Grant)

**PENDING**

**Grant#** R01DK122444 (Wong) 4/1/2020-3/31/2025

**Supporting Agency:** National Institutes of Health (NIH/NIDDK)

**Title:** Regulation of the developmental intestinal stem cell axis in organogenesis

**Role:** PI

**Grant#** No number (Wong) 2/1/2020-1/31/2023

**Supporting Agency:** DoD

**Title:** Dual analyte biomarker--circulating hybrid cells and their protease activity--for early detection of

pancreatic cancer

**Role:** PI

**Grant#** No number (Nederlof) 4/1/2020-10/30/2022

**Supporting Agency:** NIH SBIR

**Title:** To development ultra-high content analyses of circulating and solid tumor cells to assess disease burden in cancer patients

**Role:** OHSU contact PI

**Grant#** ME190172 (Skalet) 4/1/2020-3/31/2022

**Supporting Agency:** DoD

**Title:** The role of circulating hybrid cells in identifying mutational evolution during progression to metastasis in uveal melanoma

**Role:** co-PI

**Planned resubmission**

**Grant#** CA12802791 (Wong), scored 35 4/1/2020-3/31/2022

**Supporting Agency:** NIH

**Title:** Multi-analyte evaluation in pancreatic cancer for early detection and treatment response

**Role:** PI

**PREVIOUS**

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| **Grant #** Senior Research Award (Wong) 1/1/2013-12/31/2015 (115830 x 3 years) | 1/1/13-12/31/16 NCE | | **Grant #** Anna Fuller Fund (Wong) | | 2/1/13-1/31/14 |
| **Source**: Crohn’s and Colitis Foundation | $347,490 | | **Source**: Anna Fuller Foundation | | $100,000 |
| **Title**: Macrophage-epithelial fusion in Crohn’s disease | |  | | **Title**: Cell fusion: A novel mechanism for metastatic cancer | | |
| The major goals of this program are to determine the significance of macrophage epithelial cell fusion on epithelial immunity. | |  | | The major goals of this program are to explore macrophage cancer cell fusion in breast cancer. | | |
| **Role**: Principal investigator | |  | | **Role**: Principal investigator | | |
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| **Grant #** NIH/NIDDK U01 DK085525-03S1 (Wong) | 9/1/11-8/31/12 |
| **Source**: NIH/NIDDK | $52,912 |
| **Title**: Sequencing of differentiated Paneth cells/Lineage tracing harnessing photoconversion | |
| The major goals of this program are to isolate and sequence Paneth cells by RNA-Seq. Explore the use of live imaging in lineage tracing by photoconversion. | |
| **Role**: Principal Investigator | |
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| |  |  | | --- | --- | | **Grant #** NIH/NIDDK U01DK085525-04S1 (Wong) | 9/1/12-8/31/15 | | **Source**: NIH/NIDDK | $125,226/yr | | **Title**: Engineering the small intestine using an acellular scaffold | | | The major goals of this program are to explore the utility of native scaffolds in building *ex vivo* intestinal tissue. | | | **Role**: Principal Investigator | |  |  |  | | --- | --- | | **Grant #** NIH/NIDDK DK085525-05S1 (Wong) | 9/1/13-8/31/15 | | **Source**: NIH/NIDDK | $20,000/yr | | **Title**: Crypt/villus-associated intestinal macrophages in homeostasis and response to injury | | | The major goals of this program are to determine the key macrophage phenotypes that infiltrate into the stem cell niche after injury. | | | **Role**: Principal investigator | | | |
| **Grant #** Research Award (Wong) | | 2/1/13-1/31/15 |
| **Source**: Newton Esophageal Cancer Foundation | | $20,000 |
| **Title**: Macrophage-cancer cell fusion in metastatic esophageal cancer | |
| The major goals of this program are to explore the role of cell fusion in tumor cell heterogeneity in esophageal cancer. | |
| **Role**: Principal investigator | |
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| **Grant #** NIH/NIDDK U01 DK085525-02S1 (Wong) | 9/1/10-8/31/11 |
| **Source**: | $64,935 |
| **Title**: Generation of cell surface mAbs to Lgr5+ and differentiated Paneth cells | |
| The major goals of this program are to generate mAbs against Lgr5+ stem cells. | |
| **Role**: Principal Investigator | |

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| **Grant #** LC160458 (Wong)  **Supporting Agency:** DOD/U.S. Army Medical Research & Materiel Command  **Title:** Circulating Macrophage-Tumor Cell Fusion Hybrids as a Biomarker for Treatment Response in Lung Cancer (W81XWH-17-1-0284)  **Role:** Principal investigator   |  | | --- | |  | | 6/15/17-6/14/19  $100,000 | |
| **Grant #** CEDAR (Wong/Fischer)  **Supporting Agency:** OHSU Knight Cancer Institute  **Title:** Liquid biomarker enumeration in early stage cancer validated by current established screening assays  **Role:** Co-Investigator | | 7/16/18-2/17/20  $120,000 | |
| **Grant #** U01 DK085525 (Wong)  **Supporting Agency:** NIDDK/NIH  **Title:**Characterization of intestinal stem cells  **Grant #** R13 DK107122 (Wong)  **Supporting Agency:**NIDDK/NIH | 2010-2015  $1,477,830 | |
| **Grant #** NIH/NIDDK 5 R01 DK080805-01 (PI: Yochum) | 4/10/081/31/13 | |
| **Source**: NIH/NIDDK |  | |
| **Title**: c-Myc transcription in intestinal growth, differentiation, and carcinogenesis | | |
| **Role**: co-Investigator | | |

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| **Grant #** NIH HL69133-01 (PI: Fleming, Wong 10% effort) | 7/1/08-6/30/13 |
| **Source**: NIH/NIHLB | $250,000/yr |
| **Title**: Functional interactions between hematopoietic progenitors and endothelium | |
| **Role**: Co- Investigator | |

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| **Grant #** NIH/NCI CA151564 (PI:Thomas, Wong 5%) | 3/4/11-2/19/16 |
| **Source**: NIH/NCI | $207,500/yr |
| **Title**: Regulation of Trail induced apoptosis in cancer cells | |
| **Role**: Co- Investigator | |

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| **Grant #** NIH/NCI 1 R01-CA118235 (PI: Wong) | 12/1/06 -11/30/11 |
| **Source**: NIH/NCI | $887,500 |
| **Title**: Transplanted Stem Cells Impact on Tumor Progression | |
| **Role**: Principal Investigator | |

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| **Grant #** NIH/NIDDK 1 R01-DK068326 (PI: Wong) | 4/1/05 - 3/31/10 |
| **Source**: NIH/NIDDK | $1,081,000 |
| **Title**: β-catenin’s role in establishing the gut stem cell niche | |
| **Role**: Principal Investigator | |

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| **Grant #** NIH/NIDDK 1 R21-DK118235 (PI: Wong) | 4/1/03 - 3/31/05 |
| **Source**: NIH/NIDDK | $200,000 |
| **Title**: In Search of the Intestinal Stem Cell | |
| **Role**: Principal Investigator | |

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| **Grant #** OCTRI (PI: Wong, Sears, Lopez) | 4/1/07 - 3/31/08 |
| **Source**: OCTRI | $15,000 |
| **Title**: Identifying a molecular signature for aggressive metastatic colorectal cancer to inform treatment | |
| **Role**: Principal Investigator | |

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| **Grant #** Procter & Gamble (PI: Wong) | 7/06 – 12/07 |
| **Source**: Industry | $15,000 |
| **Title**: Mesalamine/colorectal cancer | |
| **Role**: Principal Investigator | |

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| **Grant #** Procter & Gamble (PI: Wong) | 9/05 – 6/08 |
| **Source**: Industry | $71,707 |
| **Title**: ASACOL and intestinal tissue regeneration | |
| **Role**: Principal Investigator | |

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| **Grant #** Dean’s Fund (Wong) | 5/1/08-4/30/11 |
| **Source**: OHSU SOM |  |
| **Title**: Defining a molecular signature for metastatic colorectal cancer to inform treatment | |
| **Role**: Principal Investigator | |

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| **Grant #** OCI Pilot Funds (Lopez) | 5/1/08-4/30/09 |
| **Source**: OHSU/Knight Cancer Institute |  |
| **Title**: Defining a molecular signature for metastatic colorectal cancer to inform treatment | |
| **Role**: Co-Investigator | |

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| **Grant #** Vertex/OHSU Pilot Funds (Wong) | 2/1/09-1/30/09 |
| **Source**: Industry |  |
| **Title**: Cancer stem cell signatures in the intestine | |
| **Role**: Principal Investigator | |

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| **Grant #** Medical Research Foundation Award (PI: Wong) | 12/1/01 -11/30/02 |
| **Source**: Oregon Medical Research Foundation | $25,000 |
| **Title**: β-catenin-mediated signaling in development and disease | |
| **Role**: Principal Investigator | |

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| **Grant #** Oregon Cancer Institute (PI: Wong) | 4/1/03 - 3/31/05 |
| **Source**: Philanthropy | $93,000 |
| **Title**: Defining the Early Molecular Signature of Small Intestinal Carcinoma | |
| **Role**: Principal Investigator | |

B. PEER-REVIEWED PUBLICATIONS *(chronological order, oldest to most recent)*

***Published:***

1. **Wong MH**, Oelkers P, Craddock, AL and Dawson, PA (1993) Cloning and Characterization of the Ileal Bile Acid Transporter. *Hepatology* *18*:143A.

2. **Wong MH**, Oelkers P, Craddock, AL and Dawson, PA (1993) Expression Cloning and Characterization of the Hamster Ileal Sodium-Dependent Bile Acid Transporter. *J. Biol. Chem.* 269:1340-1347.

3. Shneider BL, Dawson PA, Christie D, **Wong MH**, and Suchy FJ (1995) Cloning and Molecular Characterization of the Ontogeny of the Rat Ileal Sodium-Dependent Bile Acid Transporter. *J. Clin. Invest.* 95:745-754.

4. **Wong MH**, Oelkers P and Dawson, PA. (1995) Identification of a Mutation in the Ileal Sodium-dependent Bile Acid Transporter Gene that Abolishes Transport Activity. *J. Biol. Chem.* 270:27228-27234.

5. \*Hermiston ML, **Wong, MH**, and JI Gordon. (1995) Forced expression of E-cadherin in the mouse intestinal epithelium slows cell migration and provides evidence for nonautonomous regulation of cell fate in a self-renewing system. *Genes Dev.* 10:985-996.

6. **Wong MH**, Rao, PN, Pettenati MJ, and Dawson, PA (1996) Localization of the Ileal Sodium-Bile Acid Cotransporter Gene (SLC10A2) to Human Chromosome 13q33. *Genomics*  33:538-540.

7. **Wong MH**, Hermiston ML, Syder AJ, and Gordon JI. (1996) Forced expression of the tumor suppressor adenomatosis polyposis coli protein induces disordered cell migration in the intestinal epithelium. *Proc. Natl. Acad. Sci. USA* 93:9588-9593.

8. **Wong MH**, Rubinfeld, B and Gordon JI (1998) Effects of Forced Expression of an NH2-terminal Truncated β-Catenin on Mouse Intestinal Epithelial Homeostasis. *J. Cell Biol.* 141:765-777.

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a) highlighted by the Knight Cancer Institute

<https://o2.ohsu.edu/blogs/knightnews/2019/04/18/melissa-wongs-research-showcased-in-science/>

**b)Highlighted in the Science special edition on Cancer**

<http://sci.scientific-direct.net/view_online.asp?1575810&07dfd15a83a07aa6&18>

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***Manuscripts Submitted or In Revision:***

Submitted:

Hansen D, He XC, Ivon P, Giles M, Dekaney CM, Paulson A, Chen S, Cui Y, Hu D, Girard J, Olack B, Dunn J, Kuo C, Hanash AM, Houchen CW, Henning S, Lynch J, Martin MG, Niland JC, Stelzner M, Wong MH, Wang TC, Yu J, Yan K, and Li L. A holistic analyses of the intestinal stem cell niche network. Submitted to Nature.

Dietz, MS, Thomas L. Sutton2†, Brett S. Walker2†, Charles E. Gast3, Luai Zarour2, Sidharth K. Sengupta3, John R. Swain3, Jenny Eng4, Michael Parappilly3, Kristin Limbach2, Ariana Sattler3, Erik Burlingame4,5, Jose Montoya Mira6, Ajay Sapre6, Daniel R. Clayburgh7,11, SuEllen J. Pommier2, Jeremy P. Cetnar8,11, Jared M. Fischer6,11, Khaled Tolba7,11, Jerry J. Jaboin9,11, S. Jude Han7,11, Kellie J. Nazemi1, Rodney F. Pommier2, Kevin G. Billingsley2,11, Brett C. Sheppard2,11, Alison H. Skalet10,11, V. Liana Tsikitis2,11, James P. Dolan2,11, Skye C. Mayo2,11, Charles D. Lopez7,11, Joe W. Gray4,11, Zahi Mitri7,11, Young Hwan Chang4,5,11, Koei Chin4,11, and Melissa H. Wong3,11\*

. Relevance of macrophage-cancer cell hybrids in patient blood as a non-invasive biomarker across organ site.

Renee E. Vickman\*, Douglas V. Faget\*, Philip Beachy, David Beebe, Neil Bhowmick, Edna Cukierman, Wu-Min Deng, James Granneman, Jeffrey Hildesheim, Raghu Kalluri, Ken Lau, Ernst Lengyel, Joakim Lundeberg, Jorge Moscat, Peter Nelson, Kristian Pietras, Katerina Politi, Ellen Puré, Ruth Scherz-Shouval, Mara Sherman, David Tuveson, Ashani Weeraratna, Richard White, Melissa H. Wong, Elisa Woodhouse, Ying Zheng, Simon W. Hayward, Sheila A. Stewart

Deconstructing Tumor Heterogeneity: The Stromal Perspective

Sutton, T, Walker B, Wong, MH. Digesting the importance of Cell fusion in the intestine. CMGH submitted. Under review.

In preparation:

Smith et al. Bmi1 intestinal stem cells harness a developmental program during epithelial regeneration. Planned submission, Cell Stem Cells

Walker et al. Liquid biomarkers implications for diagnosis, prognosis in high grade GBM. Invited review, submission date October 2020.

Zarour et al. Circulating Hybrid Cells as a monitor of disease status in colorectal cancer patients undergoing hepatic arterial infusion.

Invited Reviews:

1. Gordon JI, Hooper LV, McNevin MS, **Wong M** and Bry L. (1997) Epithelial Cell Growth and Differentiation III. Promoting diversity in the intestine: conversations between the microflora, epithelium, and diffuse GALT. *Am. J. Physiol.* 273:G565-G570.

2. Stappenbeck TS, **Wong MH**, Saam JR, Mysorekar IU and Gordon JI (1998) Notes from some crypt watchers: regulation of renewal in the mouse intestinal epithelium. *Curr. Opin. Cell Biol.* 10:702-709.

3. **Wong MH**, Stappenbeck TS and Gordon JI (1999) Living and Commuting in Intestinal Crypts. *Gastro* 116:208-215.

4. Hooper LV, Mills JC, Roth, KA, Stappenbeck TS, **Wong MH,** and Gordon JI (2002) Combining gnotobiotic mouse models with functional genomics to define the impact of the microflora on host physiology. In *Methods in Microbiology: Molecular Cellular Microbiology* (P.J. Sansonetti, A. Zychlinsky, editors), Academic Press, London, pp.559-589.

5. Stappenbeck TS, Hooper, LV, Manchester JK, **Wong MH,** and Gordon JI (2002) Laser capture microdissection of the mouse intestine: characterizing mRNA and protein expression, and profiling intermediary metabolism in specified cell populations. In *Methods in Enzymology: Laser Capture Microscopy and Miscrodissection,* (P.M. Conn, editor), Academic Press. 356:167-96.

6. **Wong MH** (2004)Regulation of Intestinal Stem Cells. *J. Invest. Derm. Symp Proc.* 9:224-228.

7. Rizvi AZ and **Wong MH** (2005) There’s no place like home: Regulation of epithelial stem cells defined by their physical niche. *Stem Cells* 23:150-165.

8. Rizvi AZ and **Wong MH** (2005) Gut-derived Stem Cells. *Surgery.*137:585-590.

9. Shroyer NF and **Wong MH** (2008) BMP signaling in the intestine: Crosstalk is key. *Gastroenterology.* 133:1035-1038.

10. Powell AE, Shung C-Y, Saylor KW, Mullendorf KA, Weiss JB and **Wong MH** (2009)Translating asymmetric stem cell division to cancer. *Stem Cells Res*, 4:3-9. [PMCID: PMC2818177]

11. Anderson EC, and **Wong MH** (2010) Caught in the Akt: Regulation of Wnt signaling In the intestine. *Gastroenterology*. 139:718-22. [PMCID: PMC3037729]

12. Monroe MM, Anderson EC, Clayburgh DR, and **Wong MH** (2011) Cancer stem cells in head and neck squamous cell carcinoma. *J. Oncol.* 2011:762780. [PMCID: PMC2976506]

13. Anderson EC, Hessman C, Levin TL, Monroe MM and **Wong MH** (2011) Colorectal cancer stem cells in primary and metastatic disease. *Cancers.* 3:319-339. [PMCID: PMC3036171]

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15. Smith NR, Davies PS, Silk AD and **Wong MH** (2012) Epithelial and Mesenchymal Contribution to the Niche: A Safeguard to Intestinal Stem Cell Homeostasis. Gastroenterology. 143:1426-30. [PMCID: PMC3889478]

16. Aguilar PS, Bylies MK, Fleissner A, Helming L, Inoue N, Podbilewicz B, Wang H-M, and Wong M. (2013) Genetic basis of cell-cell fusion mechanisms. *Trends in Genetics* 29:427-37. [PMCID: PMC 4022042]

17. Smith NR, Gallagher A, and Wong MH. (2016) Defining a stem cell hierarchy in the intestine: markers, caveats and controversies. Journal of Physiology. 594:4781-90. [PMCID:[PMC5009783](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5009783/)]

18. Zarour LR, Anand S, Billingsley KG, Bisson WH, Cercek A, Clarke MF, Coussens LM, Gast CE, Geltzeiler CB, Hansen L, Kelley KA, Lopez CD, Rana SR, Ruhl R, Tsikitis VL, Vaccaro GM, **Wong MH**, Mayo SC.Colorectal Cancer Liver Metastasis: Evolving Paradigms and Future Directions. (2017) Cell Mol Gastroenterol Hepatol. 3:163-173.[PMCID: PMC5331831]

C. PATENTS

In discussion with OHSU Tech Transfer to protect mAbs generated to intestinal stem and progenitor populations

Licensed mAb to Millipore, 2019

Provisional patent filed for CHCs 10/18.

**D. NON-PEER REVIEWED PUBLICATIONS,Editorials, Reviews:**

Review Articles, Symposium Proceedings and Editorials *(chronological order, oldest to most recent)*

Book Chapters: *(chronological order, oldest to most recent)*

1. **Wong MH** and Rizvi AD (2006) “Lineage Tracking: What have we learned about the regulation and behavior of intestinal stem cells?” *Tissue Stem Cells: biology and Applications*, Potten, C., Wilson, J., Clarke, R. and Renehan A. eds. Marcel Dekker, Inc.

2. Silk A, Powell AE, Davies PS and **Wong MH**. “Cell fusion and stem cells” “Cell Fusions” ed. Larsson L-I. Springer Science.

3. Monroe MM, Hessman CJ, Clayburgh DR, Bubbers EJ, and **Wong MH.** (2011) Cancer Stem Cells: The cutting edge. “Cancer Stem Cells in solid Organ Malignancies: Mechanisms of Treatment Resistance and Strategies for Therapeutic Targeting.” Ed. Intech open.

4. Smith NR, Anderson EC, Davies PS, and **Wong MH** (2013) Regenerative Medicine Applications in Organ Transplantation. “Building Blocks for Engineering the Small Intestine.” ed. Elsevier.

5. Keene DR, Gonzales SL, **Wong MH,** Smith NR, Sakai LY and Horton WA. (2014) Correlation of the Same Fields Imaged in the TEM, Confocal, LM and MicroCT by Image Registration: From Speciment Preparation to Displaying a Final Composite Image.

Awards:

1. A Unique Approach to Junior Faculty Professional Development in the Basic Sciences (Schedin, Wong, Coussens et al)

OHSU, SOM Symposium on Educational Excellence, First Place Poster