University of Wisconsin
SCHOOL OF MEDICINE
AND PUBLIC HEALTH

Richard B. Halberg

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Education

1983–1988	University of Iowa, BS, Chemistry and Biology
1988–1994	Michigan State University, PhD, Biochemistry
1994–2000	University of Wisconsin–Madison, Postdoctoral Fellow, Molecular Genetics

Present Appointment/Position

2009–pres.	Member, University of Wisconsin Carbone Cancer Center
2009–pres.	Trainer, University of Wisconsin–Madison Cancer Biology Program
2010–pres.	Researcher, William S. Middleton Memorial Veterans Hospital
2012–pres.	Trainer, University of Wisconsin–Madison Cellular and Molecular Pathology Program
2013–pres.	Member, University of Wisconsin Institute for Clinical & Translational Research
2015–pres.	Associate Professor, Department of Medicine, University of Wisconsin–Madison
2016–pres.	Associate Professor, Department of Oncology, University of Wisconsin–Madison

Past Appointments/Positions

1995–1998	American Cancer Society Postdoctoral Fellow, University of Wisconsin–Madison
1998–2000	National Institute of Health Postdoctoral Fellow, University of Wisconsin–Madison
2000–2007	Assistant Scientist, University of Wisconsin–Madison
2003–2004	Senior Scientist II, Promega Corporation, Fitchburg, WI
2005–2011	Consultant, Promega Corporation, Madison, WI
2007–2009	Associate Scientist, University of Wisconsin–Madison
2008–2011	Consultant, Cellectar, Madison, WI
2009–2015	Assistant Professor, Department of Medicine, University of Wisconsin–Madison

Professional Society Memberships

1998–pres.	American Association for the Advancement of Science
2009–pres.	American Association for Cancer Research
2009–pres.	American Gastroenterological Association

Honors and Awards

1983	National Honor Society
1986	University of Iowa American Chemical Society Analytical Chemistry Award
1987	National Science Foundation Research Experiences for Undergraduates Grant
1988	Sigma Chi Epsilon Outstanding Undergraduate Research Award
1992–1993	Barnett Rosenberg Fellow
1993	John A. Boezi Memorial Outstanding Graduate Student Award
1995–1998	American Cancer Society Postdoctoral Fellow
1998–2000	National Institutes of Health Postdoctoral Fellow
2012–2014	American Association of Cancer Research Career Development
2013	Puestow Research Award

2017 UW Office of the Vice Chancellor for Finance Award for Administrative Improvement (nominated)
2017 UW Office of the Provost Award for Mentoring Undergraduates in Research, Scholarly and Creative Activities (nominated)

GRANT SUPPORT
Current Research Support

1 R01 CA220004-01 Halberg, Grady and Pickhardt (PIs) 07/01/17 – 06/30/22 2.4 cal months
National Institutes of Health/National Cancer Institute $284,362 direct costs Y1
"*Radiogenomics of Colorectal Polyps to Assess Benign Proliferative vs. Premalignant States"*
The goal of this project is to identify biomarkers that predict whether a polyp is a benign proliferation or premalignant neoplasm.
Role: PI

1 P50CA174509-01A1 Harari (PI) 06/01/16-05/30/21 0.36 cal months
National Institutes of Health/National Cancer Institute $1,663,625 direct costs Y1
"*Head and Neck SPORE at the University of Wisconsin Carbone Cancer Center"*
The Wisconsin Head and Neck SPORE seeks to identify and translate new scientific discoveries into significant and durable treatment advances for patients with head and neck cancer (HNC). These advances strive to increase HNC cure rates and diminish normal tissue toxicities.
Role: Co-I, Project 1

13-14NSCOR_2-0012 Weill (PI) 03/01/15-02/28/20 0.6 cal months
NASA $297,376 total costs (sub)
"*NASA Specialized Center of Research on Carcinogenesis*"
The goal is to develop the methodologies and animal models needed to further unravel the mechanisms relevant to hepatocellular carcinoma development and metastasis.
Role: Subcontract PI

RSG-15-013-01-CNE Khan (PI) 07/01/15-06/30/19 0.6 cal months
American Cancer Society $792,000 total costs
Research Scholar Grant
"*Management of Colorectal Cancers with PIK3CA Mutations"*
Role: Co-I

Pilot Project Halberg and Pickhardt (PIs) 02/01/17-03/31/19 0.36 cal months
University of Wisconsin Department of Radiology $38,000 total costs
"Novel Microsatellite Sequences to Assess Radiation-induced DNA Damage"
Patients are increasingly exposed to radiation for both diagnostic and therapeutic procedures. There is also increasing concern about public exposure in the wake of the Fukushima nuclear reactor accident and terrorist attacks. Quick and accurate determination of radiation dose absorbed by tissues after an exposure is not currently possible. Determination of cumulative body exposure or tissue specific radiation dose could have great utility in estimating cancer risk, triaging care after a public exposure, or managing therapeutic radiation treatment. Despite technological advances in other areas of biology, our methods for post exposure assessment of radiation dose have not changed in decades, and are based on clinical symptoms, peripheral lymphocyte depletion, or dicentric chromosome detection. These are not effective means to detect low dose exposure, and extraordinarily crude estimates of high radiation exposure. This pilot project allows us to establish the feasibility using next generation sequencing (NGS) of microsatellite sequences for measuring mutational load.
Role: PI

Pilot Project Khan (PI) 01/01/17-12/31/19 0.36 cal months
University of Wisconsin Carbone Cancer Center $50,000 total costs
We propose a treatment strategy which is a step forward in improving outcome of patients with *PIK3CA*-mutant colorectal cancer (CRC). Adding low dose aspirin to the current standard care could greatly reduce the risk of recurrence for a significant of patients who had *PIK3CA*-mutant CRC.
Role: Co-I

Pilot Project Halberg and Pickhardt (PIs) 02/01/17-03/31/19 0.36 cal months
University of Wisconsin Carbone Cancer Center $47,000 total costs
Radiogenomics to Identify Biomarkers that Predict Individual Colon Cancer Risk
The goal of this project is to identify biomarkers that predict whether a polyp is a benign proliferation or premalignant neoplasm.
Role: PI

Pending Research Support

RO1 Halberg and Mukhtar (PIs) 10/01/18-09/31/23 1.2 cal months
National Institutes of Health/National Cancer Center $2,250,000 total costs
We propose a treatment strategy which is a step forward in improving the outcome of patients with *PIK3CA*-mutant colorectal cancer (CRC). Adding low dose aspirin to the current standard care could greatly reduce the risk of recurrence for a significant number of patients who had *PIK3CA*-mutant CRC.
Role: Co-PI

Program Development

1 G20 OD21952-01 Jefcoat (PI) 04/01/16-3/31/18 0.12 cal months
National Institutes of Health $476,480 total cost
"UW Swine Housing Room and Treatment Suite for Biomedical Research"
The CSC K4/1 module is the major research-animal vivarium for USDA-covered species in the School of Medicine and Public Health (SMPH). In 2015, the K4/1 module was remodeled, but the vivarium was not fully functional because the remodeling budget lacked funding to complete the swine housing suite. This grant provides NIH funding to complete and fully outfit an unfinished 2,000 ASF remodeled space within the K4/1 module to ensure the proper housing of swine.
Role: Co-I

Pilot Funding Halberg and Rey (PIs) 06/01/17-05/30/19 0.12 cal months
UW Microbiome Initiative $250,000 total cost
The interactions of microbial communities with mammals have a profound impact on their anatomy, physiology, behavior and susceptibility to disease. Germ-free mice provide a powerful *in vivo* controlled model system to dissect these interactions. We are creating a germ-free facility that will provide services for the whole UW community. This facility will be partnership with between the Rey Laboratory and Biomedical Research Model Services (BRMS) to build and manage a facility that meets the needs of the UW campus.
Role: PI

Training Support

T32 CA009614-24 McNeel (PI)
Physician Scientist Training in Cancer Medicine
Role: Trainer (3 postdoctoral fellows to date: Dustin Deming, Terrah Paul Olson, and Ian Grimes)

T32 CA009135-35 Sugden (PI)
Cancer Biology Program
Role: Trainer (4 students to date: Jamie Hadac, Christopher Zahm, Alyssa Leystra, and Chelsie Sievers)

5 R25 CA172010-04 Halberg and Threadgill (PIs) 08/01/14-08/31/18 0.12 cal months
National Institutes of Health/National Cancer Institute $72,603 total costs
"Workshop on Techniques in Modeling Human Cancer in Mice"
The annual Workshop on Techniques in Modeling Human Cancer in Mice proposed in this application will provide training in the use of genetically defined laboratory mice as tools for asking questions about gene function and the role of genetics in the biology of cancer.
Role: Co-PI

Completed Research Support

Pilot Project Halberg (PI) 02/01/16-03/31/18 0.36 cal months
University of Wisconsin Carbone Cancer Center $25,000 total costs
"*The Significance of Recruited Cells to Cancer Prevention and Therapy*"
Our hypothesis is that recruited epithelial cells are themselves neoplastic and must be eliminated to achieve complete resolution of early adenomas and advanced cancers. If correct, this new insight would likely impact the development of strategies for chemoprevention and chemotherapy.
Role: PI

Pilot Project Pickhardt (PI) 07/01/15-06/30/16 0.36 cal months
University of Wisconsin Carbone Cancer Center $37,000
Individuals respond differently to radiation exposure and therefore risk may vary from person to person. To assess an individual's risk, clinicians need to know the "effective" cumulative dose a patient has received. Our solution to personalized biodosimetry hinges on our preclinical observation that non-coding repetitive DNA sequences accumulate non-harmful radiation-induced mutations. We hypothesize that an individual's cumulative radiation exposure and sensitivity to radiation can be monitored using a simple blood (or tissue) test to determine the mutational load in non-coding repetitive sequences. An individual's mutational load could be useful for quantifying short and long-term health risks or in assisting therapeutic radiation treatment. Our goal is to develop a novel approach to personalized biodosimetry that can be readily employed in the clinic to assess an individual's cumulative response to ionizing radiation exposure.
Role: Co-PI

Pilot Project Halberg (PI) 05/01/15-04/30/16 0.36 cal months
University of Wisconsin Carbone Cancer Center $37,000
Our overarching hypothesis is that activation of PI3K expands fields of APC-deficient crypts that are critical to the early formation of adenomas in the intestine and this effect can be reversed by treatment with aspirin and possibly other chemopreventive agents.
Role: PI

Pilot Project Matkowskyj (PI) 05/01/15-04/30/16 0.36 cal months
University of Wisconsin Carbone Cancer Center $38,000 total costs
"*Testing the Combination of TRAIL and a PPAR-γ Activator for the Treatment of Colorectal Cancer*"
Our hypothesis is that the PPAR-γ agonist pioglitazone modulates the TRAIL/TRAIL-R pathway leading to increased apoptosis in premalignant colonic lesions as a function of polyp heterogeneity.
Role: Co-PI

133-PRJ56SU Halberg (PI) 10/01/11-01/31/15 0.24 cal months
Promega Corporation $44,447 total direct costs
"*Microsatellite Instability Testing of Adenomas for Early Detection of Lynch Syndrome"*

The overall goal of the proposed study is to develop a method for the early identification of individuals with Lynch syndrome by detecting microsatellite instability in benign adenomas. This advance would allow preventative measures to be taken to reduce morbidity and mortality in Lynch patients and their at-risk family members. Currently, the estimates are that 1 in 4 individuals with Lynch syndrome go undiagnosed.

133-PRJ59EW Halberg (PI) 04/18/12-04/17/15 0.24 cal months
Novelos Therapeutics $16,000 annual direct costs
"*Evaluation of CLR1501 to Detect Colon Cancer in a Mouse Model"*
The treatment of localized colorectal cancer depends on resection of the primary tumor with adequate margins and sufficient lymph node sampling. A novel imaging agent that accumulates in colorectal cancers and the associated lymph nodes is needed. CLR1502 is a near-infrared phospholipid derivative. We are investigating the use of this tracer for the detection of intestinal cancers in a murine model of colorectal cancer.

1307-003 Pickhardt (PI) 11/01/13-10/31/14 0.24 cal months
Department of Radiology/University of Wisconsin Carbone Cancer Center $49,797 total direct costs
"CT Textural Analysis as a Non-invasive Biomarker for Predicting Biological Endpoints in Colorectal Neoplasia"
In this pilot proposal, we seek to apply CT texture analysis to a broad spectrum of proven colorectal neoplasms, ranging from benign polyps to metastatic colorectal cancer, and to correlate these findings with key biological features and outcomes including a variety of histologic, genetic, and clinical features. If CT textural analysis is found to represent an independent predictor for any of these important parameters, this emerging technique could have a profound impact on the clinical management of colorectal neoplasia.
Role: Co-I

NM113-13 Deming (PI) 05/01/14-04/30/15 0.24 cal months
ICTR Novel Methods Translational Research Pilot Program/Univ. of Wisconsin $50,000 direct costs
"Evaluating the Effect of Mutation Profile on Cancer Biology"
The PRISM mouse will allow investigators to test newly developed chemotherapeutic agents that target specific pathways on tumors with a known mutation profile. The *PRISM* transgene, which has already been generated, includes mutations in *KRAS*, *PIK3CA*, and *TP53* which are commonly mutated in many cancer types. Other mutated genes could be added or substituted to generate new versions of the transgene. This experimental system will undoubtedly lead to a better understanding of tumor biology and the identification of new treatment strategies that can be translated to the clinic. This system is developed here to study colon cancer but its utility is not limited to this disease. The PRISM model can be combined with mouse strains that have been created to permit specific expression of CRE recombinase in distinct tissues to study the effects of mutant *KRAS*, *PIK3CA*, and *TP53* in other cancers.
Role: Co-PI

133-PRJ66HY Halberg (PI) 07/01/12-06/30/15 0.6 cal months
American Association of Cancer Researchers Career Development Award $50,000 annual direct costs
"*Molecular Differences Predicting Tumor Progression in Colorectal Cancer"*
The goal of this proposal is to identify transcriptional changes in colorectal tumors that promote the progression of tumors from a benign to malignant state using two distinct animal models. Funding from National Cancer Institute is being used to analyze tumors carrying an *APC* mutation, whereas funding from American Association of Cancer Researchers is being used to analyze tumors carrying mutations in *APC* and *KRAS*. A major advantage of studying tumor progression in two distinct models is that molecular changes that are common to both are more likely to be conserved when translating predictive signatures to the clinic.

5 R01CA123438-05 Halberg (PI) 04/01/09-02/28/14 6.6 cal months
National Institutes of Health/National Cancer Institute $1,030,404 total direct costs
"*Polyclonal Intestinal Tumors: Formation, Progression, and Significance*"

Colorectal cancer is a leading cause of cancer death in the United States. Many investigators believe that a tumor is derived from a single abnormal progenitor and its descendants. The data supporting this long-held view are neither extensive nor definitive. Moreover, the experimental techniques used were heavily biased. We believe that a tumor is derived from multiple abnormal progenitors because clonal interactions among these cells provide a selective advantage during formation, growth, and progression. This hypothesis will be tested using a unique combination of newly developed mouse models, statistical analyses, and imaging techniques. We will analyze tumors from mice treated with either ethylnitrosourea (ENU) or azoxymethane (AOM), mice in which *APC* is inactivated somatically by silencing, and mice in which tumorigenesis is initiated because of a mutation in the TGFβ signaling pathway (Aim 1). If polyclonality provides a selective advantage, heterotypic tumors should be common among these distinct mouse models. The tumors will be maintained in a tissue bank that will be well documented using an Access database. We will explore how heterotypic tumors emerge (Aim 2). Our initial study indicates that the most likely explanation involves clonal interactions occurring over very short distances. We will test whether polyclonality persists as tumors grow and progress from benign to malignant states (Aim 3). The results from our proposed experiments could fundamentally change the understanding of tumorigenesis in the mammalian intestine. The acceptance of this new view will undoubtedly impact the design of approaches for chemoprevention and chemotherapy. Signaling molecules mediating clonal interactions would likely be ideal targets for drug intervention. Potential mediators can be first examined utilizing our tissue bank of highly characterized tumors from a variety of mouse models. Each candidate that is still deemed interesting can then be fully tested using our experimental platform, i.e., one could determine whether elimination of the candidate through either drug intervention or genetic manipulation completely impairs the formation, growth, or progression of polyclonal tumors.

5 R21CA170876-02 Halberg (Contact PI) 09/01/12-08/31/14 0.6 cal months
National Institutes of Health/National Cancer Institute $102,225 annual direct costs
"Molecular Differences Predicting Tumor Progression in Colorectal Cancer (PQ #14)"
The progression of tumors from a benign to malignant state can now be meticulously detailed because of recent advances in micro-imaging. We plan to monitor tumors as they progress, collecting biopsies for histopathologic assessment and molecular analysis (Aim 1). Transcriptional changes associated with progression can then be elucidated with DNA microarrays. The profile of adenomas that progress to invasive adenocarcinomas will be compared to the profile of adenomas that remain unchanged (Aim 2). This type of experiment is not feasible in humans because the clinical outcome of any tumor is unknowable. Identifying predictive biomarkers in a mouse model is an important first step towards identifying genes of interest in humans.

133-PRJ66ZF Halberg (PI) 07/01/12-06/30/13 0.12 cal months
American Association of Cancer Researchers $10,000 total direct costs
"*Life Technologies Supplemental Grant for Colorectal Cancer Research"*
We plan to develop the PRISM transgene from which three different oncogenes (*KRAS*, *PI3KCA*, and *TP53*) can be randomly activated either singly or in combination during tumorigenesis. The status of a particular oncogene in a tumor will be known because each oncogene is coupled to a fluorescent marker. For example, tumors expressing an activated form of KRAS will fluoresce green. Thus, tumors that develop in the mice carrying PRISM will have a spectrum of mutations like that observed in human colorectal cancers.

IRG-58-011-48 Schelman (PI) 09/01/11-12/31/13 0.12 cal months
American Cancer Society IRG & University of Carbone Cancer Center $43,085 total direct costs
"*Characterization of Molecular Signatures Predicting Response to 5-FU Based Chemotherapy in Mouse Models of Colorectal Cancer"*
Identifying genes that predict tumor response to chemotherapy continues to be a tremendous challenge. Numerous candidates have been identified but few have been validated. One major difficulty may result from the heterogeneity among human tumors since a multitude of genetic changes occur during tumorigenesis. A few of these genetic changes are "drivers" that are critical to the process, while the vast majority are merely "passengers" that accumulate as a consequence of a high level of genomic instability. Mouse models afford us

the opportunity to study a tumorigenesis while controlling for the genetic variability. Although no single model fully recapitulates the complexity of human disease, cross-species comparative studies are highly informative because they allow drivers to be identified. C57BL/6J mice carrying the *MIN* allele of the *APC* gene have been used extensively over the past two decades to study tumorigenesis in the mammalian intestine. A limitation of this model has been that the tumors are almost always benign adenomas that form in the small intestine rather than the colon. We recently demonstrated that long-lived (SWR x C57BL/6J)F1.Min develop invasive adenocarcinomas in the colon that occasionally metastasize to regional lymph nodes, and progression of these tumors from a benign to malignant state does not require a high level of microsatellite or chromosomal instability. These tumors can be closely monitored by virtual colonography or colonoscopy, and changes in volume as small as 16% are easily observed. The central hypothesis of this proposal is that a molecular profile that predicts tumor response to 5-fluorouracil based chemotherapy in the clinic can be identified using newly developed animal models.
Role: Co-I

133-PRJ48HQ Halberg (PI) 07/01/11-06/30/12 0.12 cal months
American Society of Clinical Oncology $47,620 total direct costs
American Society Clinical Oncologist Young Investigator Award
"*Development of a Mouse Model for the Screening of Targeted Pharmacologic Agents"*
The clinical significance of certain mutations in colorectal cancer has been identified in recent years. New targets and targeted therapies are continually being identified. To aid in the advancement of personalized strategies, a mouse model with mutations in key genes which are commonly mutated in human tumors is needed. In this study we propose to develop both a carcinogen-induced and a hereditary mouse model of colorectal cancer that incorporates *APC*, *KRAS*, and *PIK3CA* mutations. These models will permit investigation into the morphologic changes, tumorigenic potential, and propensity for metastases when these mutations are present either singly or in combination. In the future, these models will then be used to screen target-directed pharmacologic therapies including a combination of agents targeting both the RAF/MEK/ERK and AKT/mTOR signaling cascades. Tumor response will be monitored *in vivo* via colonoscopy with biopsies collected for biomarker analysis.

135-PRJ47SZ Colbert (Contact PI) 06/23/11-06/30/13 0.12 cal months
University of Wisconsin Graduate School $45,241 total direct costs
2011-12 Fall Competition Award
"*Exercise and Energy Balance in a Mouse Model of Colon Cancer*"
Epidemiologic evidence consistently demonstrates that persons who are physically active have a lower risk for developing colon cancer than their less active peers, and also have a lower risk of recurrence and mortality if afflicted with the disease. In the C57BL/6J *APC*$^{MIN/+}$ (B6.MIN) mouse model of colon cancer, exercise has been found to lower tumor multiplicity. Limitations to this prior work, however, include that the tumors in B6.Min mice are almost always benign adenomas, that the polyps have only been examined at a single point in time, and that it is not clear if the protective effect of exercise is a result of the exercise itself, or the negative energy balance which can accompany it. In this application, we propose to test whether exercise with or without a negative energy balance reduces the risk of cancer in the mammalian intestine by affecting tumor initiation, growth, or progression using a new mouse model (F1.MIN) in which the mice develop invasive tumors a longitudinal design that employs colonoscopy.
Role: Co-PI

233-PRJ29NY Halberg (PI) 07/01/09-06/30/10 0.12 cal months
Allen Foundation – Charitable Organization in Milwaukee, WI $5,000 total direct costs
"*Research Experiences for Young Students*"
A major problem in the United States is the lack of young people interested in science. I believe this largely reflects a lack of opportunity to perform interesting experiments. Recently, when I had three high school students shadowing me for the day, they told me the most exciting experiment that they performed while in high school was sifting through owl droppings. The problem is now confounded by the poor economy because

funding for science from both federal and private sources is much more limited. I am requesting funds to train one high school student and one undergraduate for the summer.

Publications

Refereed Articles

1. Lu S, **Halberg RB**, Kroos L. Processing of the mother-cell σ factor, σ^K, may depend on events occurring in the forespore during *B. subtilis* development. *Proc Natl Acad Sci U.S.A.* 87:9722-6, 1990. PMID: 2124700 and PMCID: PMC55245
   Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 40%, Analysis – 40%, Writing – 40%

2. Zheng L, **Halberg RB**, Roels S, Ichikawa H, Kroos L, Losick R. Sporulation regulatory protein GerE from *Bacillus subtilis* binds to and can activate or repress transcription from promoters for mother-cell-specific genes. *J Mol Biol* 226(4):1037-50, 1992. PMID: 1518043
   Concept Development and Design – 30%, Mentoring – 40%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

3. **Halberg RB**, Kroos L. Fate of the SpoIIID switch protein during *Bacillus subtilis* sporulation depends on the mother-cell sigma factor, σ^K. *J Mol Biol* 228(3):840-9, 1992. PMID: 1469717
   Concept Development and Design – 40%, Mentoring – 0%, Data Acquisition – 80%, Analysis – 80%, Writing – 80%

4. Zhang J, Ichikawa H, **Halberg RB**, Kroos L, Aronson AI. Regulation of the transcription of a cluster of *Bacillus subtilis* spore coat genes. *J Mol Biol* 240(5):405-415, 1994. PMID: 7519271
   Concept Development and Design – 40%, Mentoring – 50%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

5. **Halberg RB**, Kroos L. Sporulation regulatory protein SpoIIID from *Bacillus subtilis* activates and represses transcription by both mother-cell-specific forms of RNA polymerase. *J Mol Biol* 243(3):425-36, 1994. PMID: 7966271
   Concept Development and Design – 40%, Mentoring – 0%, Data Acquisition – 80%, Analysis – 80%, Writing – 80%

6. **Halberg RB**, Oke V, Kroos L. Effects of *Bacillus subtilis* sporulation regulatory protein SpoIIID on transcription by σ^K-RNA polymerase *in vivo* and *in vitro*. *J Bacterol* 177(7):1888-91, 1995. PMID: 7896717 and PMCID: PMC176822
   Concept Development and Design – 40%, Mentoring – 10%, Data Acquisition – 80%, Analysis – 80%, Writing – 80%

7. Cormier R*, Hong K*, **Halberg RB***, Hawkins TL, Richardson P, Mulherkar R, Dove WF, Lander ES. Secretory phospholipase Pla2g2a confers resistance to intestinal tumorigenesis. *Nat Genet* 17(1):88-91, 1997. PMID: 9288104
   *Authors contributed equally.
   Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

8. Dove WF, Cormier RT, Gould KA, **Halberg RB**, Merritt AJ, Newton MA, Shoemaker AR. The intestinal epithelium and its neoplasms: genetic, cellular and tissue interactions. *Philos Trans R Soc Lond B Biol Sci* 353(1370):915-23, 1999. Review. PMID: 9684289 and PMCID: PMC1692285
   Concept Development and Design – 30%, Mentoring – 10%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

9. Ichikawa H, **Halberg RB**, Kroos L. Negative regulation by *Bacillus subtilis* GerE protein. *J Biol Chem* 274(12):8322-7, 1999. PMID: 10075739
   Concept Development and Design – 40%, Mentoring – 50%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

10. **Halberg RB**, Katzung DS, Hoff PD, Moser AR, Cole CE, Lubet RA, Donehower L, Jacoby RF, Dove WF. Tumorigenesis in the multiple intestinal neoplasia mouse: redundancy of negative regulators and specificity of modifiers. *Proc Natl Acad Sci U.S.A.* 97(7):3461-6, 2000. PMID: 10716720 and PMCID: PMC16262
    Concept Development and Design – 70%, Mentoring – 40%, Data Acquisition – 90%, Analysis – 90%, Writing – 80%

11. Cormier RT, Bilger A, Lillich AJ, **Halberg RB**, Hong KH, Gould KA, Borenstein N, Lander ES, Dove WF. The *Mom1^{AKR}* intestinal tumor resistance region consists of *Pla2g2a* and a locus distal to *D4Mit64*. *Oncogene* 19(28):3182-92, 2000. PMID: 10918573
    Concept Development and Design – 40%, Mentoring – 40%, Data Acquisition – 40%, Analysis – 40%, Writing – 30%

12. Boivin GP, Washington K, Yang K, Ward JM, Pretlow TP, Russell R, Besselsen DG, Godfrey VL, Doetschman T, Dove WF, Pitot HC, **Halberg RB**, Itzwowitz SH, Groden J, Coffey RJ. Pathology of mouse models of intestinal cancer: consensus report and recommendations. *Gastroenterology* 124(3):762-77, 2003. PMID: 12612914
    Concept Development and Design – 30%, Mentoring – 20%, Data Acquisition – 20%, Analysis – 20%, Writing – 30%

13. Chen X, **Halberg RB**, Ehrhardt WM, Torrealba J, Dove WF. Clusterin as a biomarker in murine and human intestinal neoplasia. *Proc Natl Acad Sci U.S.A.* 2003 100(16): 9530-5, 2003. PMID: 12886021 and PMCID: PMC170952
    Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 30%, Analysis – 30%, Writing – 40%

14. Haigis KM, Hoff PD, White A, Shoemaker AR, **Halberg RB**, Dove WF. Tumor regionality in the mouse intestine reflects the mechanism of loss of Apc function. *Proc Natl Acad Sci U.S.A.* 101(26):9769-73, 2004. PMID: 15210940 and PMCID: PMC470749
    Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

15. Bacher JW, Flanagan LA, Smalley RL, Nassif NA, Burgart LJ, **Halberg RB**, Megid WM, Thibodeau S. Development of a fluorescent multiplex assay for detection of MSI-high tumors. *Dis Markers* 20(4-5):237-50, 2004. PMID: 15528789 and PMCID: PMC3839403
    Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

16. Pickhardt PJ*, **Halberg RB***, Taylor AJ, Durkee BY, Fine J, Lee Jr. FT, Weichert JP. Microcomputed tomography colonography for polyp detection in an *in vivo* mouse tumor model. *Proc Natl Acad Sci U.S.A.* 102(9):3419-22, 2005. PMID: 15728368 and PMCID: PMC552949
    *Authors contributed equally.
    Concept Development and Design – 50%, Mentoring – 50%, Data Acquisition – 50%, Analysis – 50%, Writing – 50%

17. Thliveris AT*, **Halberg RB***, Clipson L, Dove WF, Sullivan R, Washington MK, Stanhope S, Newton MA. Polyclonality of familial murine adenomas: analyses of mouse chimeras with low tumor multiplicity suggest short-range interactions. *Proc Natl Acad Sci U.S.A.* 102(1):6960-5, 2005. PMID: 15870186 and PMCID: PMC1100801
    *Authors contributed equally.
    Concept Development and Design – 50%, Mentoring – 50%, Data Acquisition – 50%, Analysis – 50%, Writing – 50%

18. Bacher JW, Abdel Megid WM, Kent-First MG, **Halberg RB**. Use of mononucleotide repeat markers for detection of microsatellite instability in mouse tumors. *Mol Carcinog* 44(4):285-92, 2005. PMID: 16240453
    Concept Development and Design – 90%, Mentoring – 70%, Data Acquisition – 50%, Analysis – 50%, Writing – 70%

19. Leedham SJ, Schier S, Thliveris AT, **Halberg RB**, Newton MA, Wright NA. From gene mutations to tumours - stem cells in gastrointestinal carcinogenesis. *Cell Prolif* 38(6):387-405, 2005. Review. PMID: 16300652
    Concept Development and Design – 40%, Mentoring – 40%, Data Acquisition – 30%, Analysis – 30%, Writing – 40%

20. Leedham SJ, Thliveris AT, **Halberg RB**, Newton MA, Wright NA. Gastrointestinal stem cells and cancer: bridging the molecular gap. *Stem Cell Rev* 1(3):233-41, 2005. Review. PMID: 17142860
    Concept Development and Design – 40%, Mentoring – 40%, Data Acquisition – 30%, Analysis – 30%, Writing – 40%

21. Newton MA, Clipson L, Thliveris AT, **Halberg RB**. A statistical test of the hypothesis that polyclonal intestinal tumors arise by random collision of initiated clones. *Biometrics* 62(3):721-7, 2006. PMID: 16984313
    Concept Development and Design – 40%, Mentoring – 20%, Data Acquisition – 40%, Analysis – 40%, Writing – 40%

22. **Halberg RB**, Dove WF. Polyclonal tumors in the mammalian intestine: are interactions among multiple initiated clones necessary for tumor initiation, growth, and progression? *Cell Cycle* 6(1):44-51, 2007. PMID: 17245117 and PMCID: PMC2390772
    Concept Development and Design – 90%, Mentoring – 0%, Data Acquisition – 100%, Analysis – 100%, Writing – 90%

23. Megid WA, Ensenberger MG, **Halberg RB**, Stanhope SA, Kent-First MG, Prolla TA, Bacher JW. A novel method for biodosimetry. *Radiat Environ Biophys* 46(2):147-54, 2007. PMID: 17072633
    Concept Development and Design – 30%, Mentoring – 50%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

24. Kaiser S, Park YK, Franklin JL, **Halberg RB**, Yu M, Jessen WJ, Freudenberg J, Chen X, Haigis K, Jegga AG, Kong S, Sakthivel B, Xu H, Reichling T, Azhar M, Boivin GP, Roberts RB, Bissahoyo AC, Gonzales F, Bloom GC, Eschrich S, Carter SL, Aronow JE, Kleimeyer J, Kleimeyer M, Ramaswamy V, Settle SH, Boone B, Levy S, Graff JM, Doetschman T, Groden J, Dove WF, Threadgill DW, Yeatman TJ, Coffey RJ Jr, Aronow BJ. Transcriptional recapitulation and subversion of embryonic colon development by mouse colon tumor models and human colon cancer. *Genome Biol* 8(7):R131, 2007. PMID: 17615082 and PMCID: PMC2323222
    Concept Development and Design – 20%, Mentoring – 20%, Data Acquisition – 20%, Analysis – 20%, Writing – 30%

25. Durkee BY, Mudd SR, Roen CN, Clipson L, Newton MA, Weichert JP, Pickhardt PJ, **Halberg RB**. Reproducibility of tumor volume measurement at microCT colonography in living mice. *Acad Radiol* 15(3):334-41, 2008. PMID: 18280931 and PMCID: PMC2409002
    Concept Development and Design – 70%, Mentoring – 80%, Data Acquisition – 40%, Analysis – 40%, Writing – 70%

26. Chen X, Ehrhardt WM, **Halberg RB**, Threadgill DW, Aronow B, Dove WF. Cellular expression patterns of genes upregulated in murine and human colonic neoplasms. *J Histochem Cytochem* 56(5):433-41, 2008. PMID: 18180384 and PMCID: PMC2324186
    Concept Development and Design – 40%, Mentoring – 30%, Data Acquisition – 40%, Analysis – 40%, Writing – 50%

27. Chen X, **Halberg RB**, Burch RP, Dove WF. Intestinal adenomagenesis involves core molecular signatures of the epithelial-mesenchymal transition. *J Mol Histol* 39(3):283-94, 2008. PMID: 18327651 and PMCID: PMC2544376
    Concept Development and Design – 40%, Mentoring – 30%, Data Acquisition – 40%, Analysis – 40%, Writing – 50%

28. **Halberg RB**, Chen X, Amos-Landgraf JM, White A, Rasmussen K, Clipson L, Pasch C, Sullivan R, Pitot HC, Dove WF. The pleiotropic phenotype of *Apc* mutations in the mouse: allele specificity and effects of the genetic background. *Genetics* 180(1):601-9, 2008. PMID: 18723878 and PMCID: PMC2535708
    Concept Development and Design – 90%, Mentoring – 40%, Data Acquisition – 90%, Analysis – 90%, Writing – 80%

29. **Halberg RB**, Larsen MC, Elmergreen TL, Ko AY, Irving AA, Clipson L, Jefcoate CR. Cyp1b1 exerts opposing effects on intestinal tumorigenesis via exogenous and endogenous substrates. *Cancer Res* 68(18):7394-402, 2008. PMID: 18794127 and PMCID: PMC2577593
    Concept Development and Design – 50%, Mentoring – 40%, Data Acquisition – 50%, Analysis – 60%, Writing – 60%

30. **Halberg RB**, Waggoner J, Rasmussen K, White A, Bacher J, Sullivan R, Washington MK, Pitot HC, Albertson DG, Dove WF. Long-lived Min mice develop advanced intestinal cancers through a genetically conservative pathway. *Cancer Res* 69(14):5768-75, 2009. PMID: 19584276 and PMCID: PMC2775466
    Concept Development and Design – 90%, Mentoring – 40%, Data Acquisition – 90%, Analysis – 90%, Writing – 80%

31. Huttlin EL, Chen X, Barrett-Wilt GA, Hegeman AD, **Halberg RB**, Harms AC, Newton MA, Dove WF, Sussman MR. Discovery and validation of colonic tumor-associated proteins via metabolic labeling and stable isotopic dilution. *Proc Natl Acad Sci U.S.A.* 106(40):17235-40, 2009. PMID: 19805096 and PMCID: PMC2761368
Concept Development and Design – 30%, Mentoring – 20%, Data Acquisition – 40%, Analysis – 40%, Writing – 40%

32. Durkee BY, Shinki K, Newton MA, Iverson CE, Weichert JP, Dove WF, **Halberg RB**. Longitudinal assessment of colonic tumor fate in mice by computed tomography and optical colonoscopy. *Acad Radiol* 16(12):1475-82, 2009. PMID: 19896065 and PMCID: PMC2818525
Concept Development and Design – 50%, Mentoring – 80%, Data Acquisition – 20%, Analysis – 20%, Writing – 20%

33. Durkee BY, Weichert JP, **Halberg RB**. Small animal micro-CT colonography. *Methods* 50(1):36-41, 2010. PMID: 19651214 and PMCID: PMC2818102
Concept Development and Design – 90%, Mentoring – 90%, Data Acquisition – 40%, Analysis – 60%, Writing – 60%

34. Ji X, Tang J, **Halberg R**, Busam D, Ferriera S, Peña MM, Venkataramu C, Yeatman TJ, Zhao S. Distinguishing between cancer driver and passenger gene alteration candidates via cross-species comparison: a pilot study. *BMC Cancer* 10:426, 2010. PMID: 20707908 and PMCID: PMC2927548
Concept Development and Design – 30%, Mentoring – 20%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

35. Spier BJ, Walker AJ, Cornett DD, Pfau PR, **Halberg RB**, Said A. Screening colonoscopy and detection of neoplasia in asymptomatic, average-risk, solid organ transplant recipients: case-control study. *Transpl Int* 23(12):1233-8, 2010. PMID: 21059109
Concept Development and Design – 30%, Mentoring – 20%, Data Acquisition – 0%, Analysis – 30%, Writing – 30%

36. Thliveris AT, Clipson L, White A, Waggoner J, Plesh L, Skinner B L, Zahm CD, Sullivan R, Dove WF, Newton MA, **Halberg RB**. Clonal structure of carcinogen-induced intestinal tumors in mice. *Cancer Prev Res (Phila)* 4(6):916-23, 2011. PMID: 21636550 and PMCID: PMC3220275
Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – 50%, Analysis – 60%, Writing – 80%

37. Irving AA, **Halberg RB**, Albrecht DM, Plum LA, Krentz KJ, Clipson L, Drinkwater N, Amos-Landgraf JM, Dove WF, DeLuca HF. Supplementation by vitamin D compounds does not affect colonic tumor development in vitamin D sufficient murine models. *Arch Biochem Biophys* 515(1-2):64-71, 2011. PMID: 21907701 and PMCID: PMC3295581
Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 50%, Analysis – 50%, Writing – 30%

38. Leystra AA, Deming DA, Zahm CD, Farhoud M, Paul Olson TJ, Hadac JN, Nettekoven LA, Albrecht DM, Clipson L, Sullivan R, Washington MK, Torrealba JR, Weichert JP, **Halberg RB**. Mice expressing activated PI3K develop advanced colon cancer. *Cancer Res* 72(12):2931-6, 2012. PMID: 22525701 and PMCID: PMC3645915
Concept Development and Design – 90%, Mentoring – 90%, Data Acquisition – 10%, Analysis – 60%, Writing – 70%

39. Deming DA, Leystra AA, Farhoud M, Nettekoven LA, Clipson L, Albrecht DM, Washington MK, Sullivan R, Weichert JP, **Halberg RB**. mTOR inhibition elicits a dramatic response in PI3K-dependent colon cancers. *PLOS One* 8(4):r60709, 2013. PMID: 23593290 and PMCID: PMC3621889
Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – 10%, Analysis – 60%, Writing – 70%

40. Thliveris AT, Schwefel B, Clipson L, Plesh L, Zahm CD, Leystra AA, Washington MK, Sullivan R, Deming DA, Newton MA, **Halberg RB**. Transformation of epithelial cells through recruitment leads to polyclonal intestinal tumors. *Proc Natl Acad Sci USA* 110(28):11523-8, 2013. PMID: 23798428 and PMCID: PMC3710880
Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – 50%, Analysis – 60%, Writing – 80%

41. Paul Olson TJ, Hadac JN, Sievers CK, Leystra AA, Deming DA, Zahm CD, Albrecht DM, Nomura A, Nettekoven LA, Plesh LK, Clipson L, Sullivan R, Newton MA, Schelman WR, **Halberg RB**. Dynamic tumor growth patterns in a novel murine model of colorectal cancer. *Cancer Prev Res* 7(1):105-13, 2014. PMID: 24196829 and PMCID: PMC4112462
    Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – 20%, Analysis – 60%, Writing – 70%

43. Deming DA, Leystra AA, Nettekoven L, Sievers C, Miller D, Middlebrooks M, Clipson L, Albrecht DM, Bacher J, Washington MK, Weichert JP, **Halberg RB**. *PIK3CA* and *APC* mutations are synergistic in the development of intestinal cancers. *Oncogene* 33(17):2245-54, 2014. PMID: 23708654 and PMCID: PMC3883937
    Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – 20%, Analysis – 60%, Writing – 70%

44. Dove WF, Shedlovsky A, Clipson L, Amos-Landgraf JM, **Halberg RB**, Krentz KJ, Boehm FJ, Newton MA, Adams DJ, Keane TM. A strategy to identify dominant mutant modifiers of a quantitative trait. *Genes, Genomes, and Genetics (G3)* 4(6):1113-21, 2014. PMID: 24747760 and PMCID: PMC4065254
    Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 30%, Analysis – 30%, Writing – 30%

45. Deming DD, Maher ME, Leystra AA, Grudzinski JP, Clipson L, Albrecht DM, Washington MK, Matkowskyj KA, Hall LT, Lubner SJ, Weichert JP, and **Halberg, RB**. Phospholipid Ether Analogs for the Detection of Colorectal Tumors. *PLoS One* 6;9(10):e109668, 2014. PMID: 25286226 and PMCID: PMC4186834
    Concept Development and Design – 60%, Mentoring – 100%, Data Acquisition – 10%, Analysis – 50%, Writing – 70%

46. Lubner MG, Stabo N, Lubner SJ, Del Rio AM, Song C, **Halberg RB**, Pickhardt PJ. CT textural analysis of hepatic metastatic colorectal cancer: pre-treatment tumor heterogeneity correlates with pathology and clinical outcomes. *Abdom Imaging* 40(7):2331-7, 2015. PMID: 25968046 [PubMed Central exempt]
    Concept Development and Design – 30%, Mentoring – 10%, Data Acquisition – 20%, Analysis – 20%, Writing – 30%

47. Bacher JW, Sievers CK, Albrecht DM, Grimes IC, Weiss JM, Matkowskyj KA, Agni RM, Vyazunova I, Clipson L, Storts DR, Thliveris AT, **Halberg RB**. Improved Detection of Microsatellite Instability in Early Colorectal Lesions. *PLoS One* 7;10(8):e0132727, 2015. PMID: 26252492 and PMCID: PMC4529134
    Concept Development and Design – 60%, Mentoring – 100%, Data Acquisition – 20%, Analysis – 50%, Writing – 50%

48. Hadac JN, Leystra AA, Paul Olson TJ, Maher ME, Payne SN, Yueh AE, Schwartz AR, Albrecht DM, Clipson L, Pasch CA, Matkowskyj KA, **Halberg RB**, Deming DA. Colon Tumors with the Simultaneous Induction of Driver Mutations in APC, KRAS, and PIK3CA Still Progress through the Adenoma-to-carcinoma Sequence. *Cancer Prev Res* 8(10):952-61, 2015. PMID: 26276752 and PMCID: PMC4596777
    Concept Development and Design – 50%, Mentoring – 50%, Data Acquisition – 20%, Analysis – 50%, Writing – 50%

49. Zahm CD, Szulczewski JM, Leystra AA, Paul Olson TJ, Clipson L, Albrecht DM, Middlebrooks M, Thliveris AT, Matkowskyj KA, Newton MA, Eliceiri KW, **Halberg RB**. Advanced Intestinal Cancers Often Maintain a Polyclonal Architecture. *PLoS One* 11(2): e0150170, 2016. PMID: 26919712 and PMCID: PMC4769224
    Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – 20%, Analysis – 50%, Writing – 70%

50. Hadac JN, Miller D, Grimes I, Newton MA, Schelman WR, **Halberg RB**. Heterochromatin protein 1 binding protein 3 expression as a biomarker of intrinsic 5-fluorouracil resistance. *Anticancer Res* 36:845-52, 2016. PMID: 26976970 and PMCID: PMC4876978
    Concept Development and Design – 90%, Mentoring – 80%, Data Acquisition – 20%, Analysis – 50%, Writing – 50%

51. Bauman TM, Vezina CM, Ricke EA, **Halberg RB**, Huang W, Peterson RE, Ricke WA. Expression and colocalization of β-catenin and lymphoid enhancing factor-1 in prostate cancer progression. *Hum Pathol* 51:124-33, 2016. PMID: 27067790 and PMCID: PMC4830919
    Concept Development and Design – 10%, Mentoring – 10%, Data Acquisition – 0%, Analysis – 10%, Writing – 20%

52. Sievers CK, Zou LS, Pickhardt PJ, Matkowskyj KA, Albrecht DM, Clipson L, Bacher JW, Pooler BD, Moawad FJ, Cash BD, Reichelderfer M, Vo TN, Newton MA, Larget BR, **Halberg RB**. Subclonal diversity

arises early even in small colorectal tumours and contributes to differential growth fates. *Gut* 66(12):2132-2140, 2017. PMID: 27609830 and PMCID: PMC5342955
Concept Development and Design – 70%, Mentoring – 70%, Data Acquisition – 20%, Analysis – 50%, Writing – 50%

53. Wegner KA, Cadena M, Trevena R, Turco A, **Halberg RB**, Vezina CM. An Immunohistochemical Key for Identifying Cell Types in Adult Mouse Prostate and Urethral tissue sections. *PLoS One* 12(11):e0188413, 2017. PMID: 29145476 and PMCID: PMC5690684
Concept Development and Design – 10%, Mentoring – 10%, Data Acquisition – 10%, Analysis – 20%, Writing – 20%

54. Pooler BD, Lubner MG, Theis JR, **Halberg RB**, Liang Z, Pickhardt PJ. Volumetric Textural Analysis of Colorectal Masses at CT Colonography: Differentiating Benign versus Malignant Pathology and Comparison with Human Reader Performance. *Acad Radiol* pii: S1076-6332(18):30114-4, 2018. [Epub ahead of print]. PMID: 29566994
Concept Development and Design – 10%, Mentoring – 10%, Data Acquisition – 10%, Analysis – 20%, Writing – 20%

Manuscripts Submitted

1. Leystra AA, Wisinger AM, Luers B, Son J, Zahm CD, Matkowskyj KA, Deming DA, Sievers CK, Schwartz A, Albrecht DM, Clipson L, Newton MA, **Halberg RB**. Multiple clones progress in intestinal cancers even when a subset of clones has a fitness advantage. Submitted to *Cancer Letters*.
Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – 20%, Analysis – 50%, Writing – 50%

2. Khan N, Jajeh, Eberhardt EL, Miller DD, Albrecht DM, VanDoorn R, Maresh ME, Clipson L, Mukhtar H, and **Halberg RB**. Fisetin and 5-Fluorouracil: Killer Combination for *PIK3CA*-Mutant Colorectal Cancer. Submitted to *J Natl Cancer Inst*.
Concept Development and Design – 90%, Mentoring – 50%, Data Acquisition – 50%, Analysis – 50%, Writing – 50%

Book Chapters, Editorials, and Commentaries

1. Hoff PD, **Halberg RB**, Shedlovsky A, Dove WF, Newton MA. Identifying carriers of a genetic modifier using nonparametric Bayesian methods. Case Studies in Bayesian Statistics 5, Lecture Notes on Statistics. 162:327-342, 2001.
Concept Development and Design – 30%, Mentoring – 30%, Data Acquisition – 40%, Analysis – 30%, Writing – 30%

2. Paul Olson TJ, **Halberg RB**. Experimental small animal colonoscopy. In *Colonoscopy*, 2011, Paul Miskovitz (Ed.), ISBN: 978-953-307-568-6, InTech. http://www.intechopen.com/books/colonoscopy
Concept Development and Design – 90%, Mentoring – 100%, Data Acquisition – N/A, Analysis – N/A, Writing – 60%

3. Robins HI, Burkard ME, **Halberg RB**. "TRIMing" the patient population to increase the benefit of mTOR inhibition. *J Natl Can Inst* 106(5):dju095, 2014. PMID: 24777109.
Concept Development and Design – 40%, Mentoring – N/A, Data Acquisition – N/A, Analysis – N/A, Writing – 60%

4. Bacher JW, Clipson L, Steffan LS, **Halberg RB**. Microsatellite Instability and its Significance to Hereditary and Sporadic Cancer. In *Microsatellite Markers*, 2016, Ibrokhim Y. Abdurakhmonov (Ed.), ISBN: 978-953-51-2798-7, InTech. http://www.intechopen.com/books/microsatellite-markers
Concept Development and Design – 50%, Mentoring – 50%, Data Acquisition – N/A, Analysis – N/A, Writing – 50%

5. Sievers CK, Leystra AA, Clipson L, Dove WF, **Halberg RB**. Understanding Intratumoral Heterogeneity: Lessons from the Analysis of At-Risk Tissue and Premalignant Lesions in the Colon. *Cancer Prev Res (Phila)* 9:638-41, 2016. PMID: 27199343 and PMCID: PMC4970935.
Concept Development and Design – 80%, Mentoring – 80%, Data Acquisition – N/A, Analysis – N/A, Writing – 50%

6. Sievers CK, Grady WM, **Halberg RB**, Pickhardt PJ. New insights into the earliest stages of colorectal tumorigenesis. *Expert Rev Gastroenterol Hepatol* 11;723-727, 2017. PMID: 28503955. PMCID: PMC5859121 [Available on 2018-08-01].
   Concept Development and Design – 80%, Mentoring – 80%, Data Acquisition – N/A, Analysis – N/A, Writing – 50%

Selected Abstracts

1. Deming DA, Leystra AA, Zahm CD, Farhoud M, Paul Olson TJ, Hadac JN, Nettekoven LA, Albrecht DM, Clipson L, Sullivan R, Washington MK, Torrealba JR, Weichert JP, **Halberg RB**. Mice expressing activated PI3K develop advanced colon cancer. American Association for Cancer Researchers Annual Meeting, Chicago, IL, April 2012.

2. Paul Olson TJ, Hadac JN, Schelman WR, Kennedy GD, **Halberg RB**. Dynamic growth patterns of tumors in a novel murine model of colorectal cancer. Annual Meeting of the American Society of Colon and Rectal Surgeons, San Antonio, TX, June 2012.

3. Deming DA, Leystra AA, Zahm CD, Farhoud M, Paul Olson TJ, Hadac JN, Nettekoven LA, Albrecht DM, Clipson L, Sullivan R, Washington MK, Torrealba JR, Weichert JP, **Halberg RB**. Mice expressing activated PI3K develop advanced colon cancer: A translational model for biomarker and pharmacologic investigations. University of Wisconsin Department of Medicine Research Day, Madison, WI, June 2012. *Basic Science Winner*

4. Leystra AA, Deming DA, Zahm CD, Thliveris AT, Clipson L, Plesh L, Skinner B, Sullivan R, Albrecht DM, Newton MA, **Halberg RB**. Development of polyclonal intestinal tumors involves recruitment among nearby cells. University of Wisconsin Carbone Cancer Research Retreat, Madison, WI, February 2013. *University of Wisconsin Carbone Cancer Center Rusch Award for Best Basic Science Cancer Research Poster*

5. Zahm CD, Leystra AA, Nettekoven L, Albrecht DM, **Halberg RB**. Clonal architecture of carcinogen-induced intestinal tumors in mice. American Association for Cancer Researchers Annual Meeting, Washington, DC, April 2013.

6. Hadac JN, Paul Olson TJ, Newton MA, Kennedy GD, Schelman WR, **Halberg RB**. Tumor progression and treatment response characterization in a novel mouse model of colon cancer. American Association for Cancer Researchers Annual Meeting, Washington, DC, April 2013.

7. Deming DA, Leystra AA, Nettekoven L, Sievers C, Clipson L, Albrecht DM, Bacher J, Washington MK, Weichert JP, **Halberg RB**. *PIK3CA* and *APC* mutations are synergistic in the development of intestinal cancers. American Association for Cancer Researchers Annual Meeting, Washington, DC, April 2013.

8. Nwagwu-Youlo C, Kalea A, Grimes IC, Weiss JW, **Halberg RB**, Reichelderfer M, Saha S. The Role of Azathioprine and 6-Mercaptupurine in the Development of Colorectal Cancer among Patients with Crohn's Disease and Ulcerative Colitis. Annual Meeting of the American College of Gastroenterology, San Diego, CA, October 2013.

9. Bacher JW, Ward P, Grimes IC, Albrecht D, Agni R, Richie K, Vigiriene J, Kanopiene D, Reichelderfer M, Weiss J, **Halberg RB**. New markers for improved detection of MSI in early and extracolonic tumors. Annual Meeting of the Association for Molecular Pathology, Phoenix, AZ, November 2013.

10. Lubner MG, Stabo N, Lubner SJ, Munoz del Rio A, **Halberg RB**, Pickhardt PJ. CT textural analysis of hepatic metastatic colorectal cancer: Tumoral heterogeneity correlates with pathology and clinical outcomes. Society of Abdominal Radiology Annual Scientific Meeting, Boca Raton, FL, March 2014.

11. Leystra AA, Deming DD, Wisinger A, Zahm CD, Sievers CK, Matkowskyj KA, Newton MA, **Halberg RB**. Transformation of epithelial cells through recruitment leads to polyclonal intestinal cancers. American Association for Cancer Researchers Annual Meeting, San Diego, CA, April 2014.

12. Hadac JN, Paul Olson T, Newton MA, **Halberg RB**, Schelman WR. Characterization of molecular signatures predicting response to 5-fluorouracil in mouse models of colorectal cancer. American Association for Cancer Researchers Annual Meeting, San Diego, CA, April 2014.

13. Leystra AA, Deming DD, Wisinger A, Zahm CD, Sievers CK, Matkowskyj KA, Newton MA, **Halberg RB** Transformation of neighboring epithelial cells through recruitment leads to polyclonal cancers. University of Wisconsin Department of Medicine Research Day, Madison, WI, May 2014.
Basic Science Winner

14. Sievers CK, Pickhardt PJ, Matkowskyj K, Albrecht D, Zou L, Kim D, Lubner M, Clipson L, Reichelderfer M, and **Halberg RB**. Variation in Mutational Landscape Among Small Colonic Polyps with Differential Growth Fates. In: Proceedings of the Annual Meeting of the American Association for Cancer Research; 2015 Apr 18-22; Philadelphia, PA. AACR; 2015. Abstract 4799.

15. Leystra AA, Wisinger AM, Zahm CD, Matkowskyj K, Sievers CK, Schwartz A, Albrecht D, Clipson L, Deming DA, Newton MA, and **Halberg RB**. Discrete clones cooperate to promote tumor progression through a non-cell-autonomous mechanism in intestinal cancers. In: Proceedings of the Annual Meeting of the American Association for Cancer Research; 2015 Apr 18-22; Philadelphia, PA. AACR; 2015. Abstract 4143.

16. Sievers CK, Zou L, Pickhardt PJ, Matkowskyj K, Albrecht D, Kim D, Moawad F, Cash BD, Reichelderfer M, Newton M, and **Halberg RB**. Modeling the rise of intratumoral heterogeneity in growing, static, and regressing human colorectal polyps. In: Proceedings of the Annual Meeting of the American Association for Cancer Research; 2016 Apr 16-20; New Orleans, LA. Philadelphia (PA): AACR; 2016. Abstract 1504.

17. Leystra AA, Luers B, Son J, Sievers CK, Wisinger AM, Schwartz AR, Zahm cD, Matkowskyj KM, Albrecht DM, Clipson L Deming DA, Newton MA, and **Halberg RB**. A multiancestral model of colorectal cancer: *in vivo* evidence that early heterogeneity contributes to cancer progression. In: Proceedings of the Annual Meeting of the American Association for Cancer Research; 2016 Apr 16-20; New Orleans, LA. Philadelphia (PA): AACR; 2016. Abstract 2381.

18. Sievers CK, Vo TN, Pickhardt PJ, Pooler D, Matkowskyj K, Albrecht D, Rosemarie QR, Newton M, and **Halberg RB**. The timing of mutational burst events impact the growth of tumors in the colon [abstract]. In: Proceedings of the Annual Meeting of the American Association for Cancer Research; 2017 Apr 1-5; Washington, D.C. Philadelphia (PA): AACR; 2017. Abstract 2915.

19. Bacher J, **Halberg RB**, VanDoorn R, Gjyzeli, Udho E, Koth, R, Weil M. Mechanisms underlying increased hepatocellular carcinoma. NASA Human Research Program Investigators' Workshop; 2018 Jan 22-25; Galveston, TX.

20. Khan N, Jajeh F, Miller D, VanDoorn R, Eberhardt EL, **Halberg RB**, and Mukhtar H. Fisetin for the management of PIK#CA-mutant colorectal cancer. In: Proceedings of the Annual Meeting of the American Association for Cancer Research; 2018 Apr 14-18; Chicago, IL. Philadelphia (PA): AACR; 2018. Abstract 1251.

21. Farhoud M, Leystra A, Albrecht DM, Brevard M, Dimant H, Holt R, **Halberg RB**. Multiple-resolution characterization of tumor heterogeneity as associated with disease progression in a mouse model of

colorectal cancer. In: Proceedings of the Annual Meeting of the American Association for Cancer Research; 2018 Apr 14-18; Chicago, IL. Philadelphia (PA): AACR; 2018. Abstract LB-329.

22. Bacher J, **Halberg RB**, Ward P, Udho, Murphy K, Uhr M, Dubeau L, Pettersson J, Storts D, Gallinger S, Buchanan, Jenkins M, Lindor N, Eshleman J. Development of a new Pan-Cancer Biomarker Panel for Improved Detection of MSI Across all Cancer Types. ESMO World Congress on Gastrointestinal Cancer, Barcelona, Spain, June 2018.

23. Bacher J, **Halberg RB**, Ward P, Udho, Murphy K, Uhr M, Dubeau L, Pettersson J, Storts D, Gallinger S, Buchanan, Jenkins M, Lindor N, Eshleman J. Development of a Novel Pan-Cancer Biomarker Panel for Improved Detection of MSI in Tumor and Liquid Biopsies. AMP Annual Meeting, San Antonio, TX, November 2018.

Patents
Method and Kits for Detecting Mutations (Pending; Promega Corporation, 12/05)

Educational Activities & Presentations
Educational Activities

1989	Teaching Assistant for a natural science laboratory at Michigan State University in East Lansing, MI
1990	Teaching Assistant for a general biochemistry course at Michigan State University in East Lansing, MI
1998	Instructor of a graduate level course on developmental biology that was directed by Dr. Judith Kimble at the University of Wisconsin in Madison, WI
2000	Instructor for the “Techniques for Modeling Human CRC in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME
2004	Instructor for the “Techniques for Modeling Human CRC in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME
2007	Instructor for the “16th Annual Experimental Genetics of the Mouse” short course at the Jackson Laboratory in Bar Harbor, ME
2009	Co-Director for the “Techniques for Modeling Human CRC in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME
2010	Co-Director for the “Techniques for Modeling Human CRC in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME
2011	Instructor for “Oncology 401: Introduction to Experimental Oncology” at the University of Wisconsin in Madison, WI
2011	Participant in “How Learning Works” book group that was led by Dr. Lillian Tong from the Institute of Biology Education at the University of Wisconsin in Madison, WI
2012	Co-Director for the “Techniques for Modeling Human Cancer in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME

2012 Co-Director for “Oncology 401: Introduction to Experimental Oncology” at the University of Wisconsin in Madison, WI
Lecture content – 4.6, Lecture clarity – 4.6, Responsiveness to Questions – 4.7
(Scale of 1=Poor to 5=Excellent)

2013 Instructor for “Pathology 751: Basic Mechanisms of Age-Related Diseases” at the University of Wisconsin in Madison, WI
Lecture effectiveness – 1.2, Lecture material – 1.1, Overall Satisfaction – 1.1
(Scale of 1=Excellent to 8=Poor)

2013 Co-Director for “Oncology 401: Introduction to Experimental Oncology” at the University of Wisconsin in Madison, WI
Lecture content – 4.7, Lecture clarity – 4.6, Responsiveness to Questions – 4.9
(Scale of 1=Poor to 5=Excellent)

2013 Co-Director for the “Techniques for Modeling Human Cancer in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME

2014 Co-Director for “Oncology 401: Introduction to Experimental Oncology” at the University of Wisconsin in Madison, WI

2014 Co-Director for the “Techniques for Modeling Human Cancer in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME

2015 Co-Director for “Oncology 401: Introduction to Experimental Oncology” at the University of Wisconsin in Madison, WI

2015 Co-Director for the “Techniques for Modeling Human Cancer in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME

2016 Co-Director for “Oncology 401: Introduction to Experimental Oncology” at the University of Wisconsin in Madison, WI

2016 Co-Director for the “Techniques for Modeling Human Cancer in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME

2017 Instructor for “Pathology 751: Basic Mechanisms of Age-Related Diseases” at the University of Wisconsin in Madison, WI

2017 Co-Director for “Oncology 401: Introduction to Experimental Oncology” at the University of Wisconsin in Madison, WI

2017 Co-Director for the “Techniques for Modeling Human Cancer in Mice” workshop at the Jackson Laboratory in Bar Harbor, ME

2017 Instructor for “Bioengineering 601: Cancer Bioengineering” at the University of Wisconsin in Madison, WI

University of Wisconsin
SCHOOL OF MEDICINE
AND PUBLIC HEALTH

Invited Presentations

International

"New Mouse Models of Colorectal Cancer: Insights into Tumor Biology and Drug Development"
Research Initiative for Scientific Enhancement Program, School of Medicine, University of Puerto Rico, San Juan, PR
03/18/2012

"New Mouse Models of Colorectal Cancer: Insights into Tumor Biology and Drug Development"
Moving Forward in Cancer Prevention Research Joint Symposium of Asan Medical Center and the University of Wisconsin Carbone Cancer Center, Seoul, Korea
05/24/2013

National

"Imaging to Assess Colon Tumors"
Fox Chase Cancer Center, Philadelphia, PA
10/29/2009

"Insights into Polyclonality Gained from the Analysis of Carcinogen-induced Intestinal Tumors"
The Jackson Laboratory. Bar Harbor, ME
10/14/2010

"New Mouse Models of Colorectal Cancer: Insights into Tumor Biology and Drug Development"
Biochemistry and Molecular Biology Colloquium, Department of Biochemistry,
Michigan State University, East Lansing, MI
02/14/2012

"MSI Screening of Colorectal Polyps for the Early Detection of Lynch Syndrome"
Association of Molecular Pathologist Annual Meeting, Phoenix, Arizona
11/13/2013

"Colonic Adenomas Are NOT All Created Equal: Early Differences and Clinical Implications"
Pathology Colloquium, Department of Pathology, Texas A&M University, College Station, TX
02/17/2014

"Polyclonal Intestinal Tumors: Formation and Clinical Implications"
Comprehensive Cancer Center Grand Rounds
University of Alabama, Birmingham, AL
05/14/2014

"Predicting the Fate of Colonic Polyps"
Department of Molecular Biosciences Colloquium
University of Kansas – Lawrence
10/6/2014

"Polyclonal Intestinal Tumors: Formation and Clinical Implications"
Cancer Center Grand Rounds
University of Kansas – Kansas City
10/7/2014

"Multi-ancestral Intestinal Tumors: Recruitment and Response to Therapy
GI SPORE
Vanderbilt University
4/8/2015

"*Predicting Colon Polyp Fate and Response to Therapy"*
The Jackson Laboratory. Bar Harbor, ME
5/4/2015

"*Mouse Models of Human Colorectal Cancer"*
The Jackson Laboratory. Bar Harbor, ME
8/15/2016

"*Molecular predictors of Cancer Risk"*
The Jackson Laboratory. Bar Harbor, ME
8/20/2017

"*Intratumoral Heterogeneity through Recruitment: Effect on Tumor Formation, Growth, Progression, and Therapeutic Response*"
MD Anderson. Houston, TX
6/28/2018

State and Regional

"Use of Multiple Imaging Modalities to Assess Colonic Tumor Fate in Living Mice"
Cancer Biology Colloquium, Department of Oncology, University of Wisconsin, Madison, WI
03/17/2010

"New Mouse Models of Colorectal Cancer: Insights into Tumor Biology and Drug Development"
University of Wisconsin Carbone Cancer Center Young Professionals, Concourse Motel, Madison, WI
12/11/2012

"New Mouse Models and Imaging: Insights into Tumor Biology and Drug Development"
University of Wisconsin Carbone Cancer Center Retreat, Madison, WI
02/02/2012

"Discovery of a New Pathway to Colon Cancer"
Genetics Colloquium, Department of Genetics, University of Wisconsin, Madison, WI
02/20/2012

"Evolving Standards: Changes and Developments in Animal Research Regulations"
Panel Discussion
Medical Microbiology and Immunology Seminar, Department of Medical Microbiology and Immunology, University of Wisconsin, Madison, WI
03/28/2014

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CME Presentations

State and Regional

"Effect of Exercise on Tumor Initiation and Progression"
Medical, Radiological, and Surgical Advances in Gastrointestinal and Hepatic Disorders, Gordon Lodge, Baileys Harbor, WI
08/15/2012

"Of Mice and Humans - Genetics of Colorectal Cancer"
University of Wisconsin Carbone Cancer Center Grand Rounds, University of Wisconsin, Madison, WI
Quality – 4.8, Content – 4.8, Objectives Met – 4.7, Professional Effectiveness – 4.7, Usefulness – 4.7, AV – 4.8
(Scale of 1=Poor to 5=Excellent)
08/15/2012

"New Pathway to Colon Cancer"
Medical, Radiological, and Surgical Advances In Gastrointestinal and Hepatic Disorders, Gordon Lodge, Baileys Harbor, WI
09/10/2012

"Molecular Predictors of Cancer Risk"
UWCCC Genetics and Epigenetics Program
12/06/2016

Departmental

"Structure of Intestinal Tumors: Monoclonal or Not, Why Do We Care?"
Gastroenterology and Hepatology Grand Rounds, University of Wisconsin, Madison, WI
02/16/2010

"Mouse Models of Human Colorectal Cancer: More Answers and More Questions"
Gastroenterology and Hepatology Grand Rounds, University of Wisconsin, Madison, WI
02/14/2012

"Of Mice and Humans - Genetics of Colorectal Cancer"
Department of Medicine Grand Rounds, University of Wisconsin, Madison, WI
Quality – 1.15, Content – 1.25, Objectives Met – 1.3, Professional Effectiveness – 1.4, Usefulness – 1.3, AV – 1.35
(Scale of 1=Excellent to 5=Poor)
03/09/2012

"Modeling Colon Cancer in the Mouse"
Department of Medicine Grand Rounds, University of Wisconsin, Madison WI
09/20/2013

"*Colon Polyps: Crystal Ball Foretelling Cancer Risk in the Colon?*"
Gastroenterology and Hepatology Grand Rounds, University of Wisconsin, Madison, WI
11/12/2017

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Mentoring and Training History

Name	Status	Pre or Post	Training Period	Prior Academic Degree			Title of Research Project	Current Position
				Degree	Year	Institution		
PAST TRAINEES								
Bridget Skinner	Past	Pre	2009	N/A	N/A	N/A	High School Research	NICU Registered Nurse, Aurora Health Care
Rachel Conti	Past	Pre	2009	N/A	N/A	N/A	Undergraduate Research	Specialist, Midwest Transplant Network
Lauren Plesh	Past	Pre	2009–11	N/A	N/A	N/A	Undergraduate Research	Resident, Phoenix Children's Hospital
Alice Nomura	Past	Pre	2009–11	N/A	N/A	N/A	Undergraduate Research	Postdoctoral Fellow, University of Miami Miller School of Medicine
Terrah Paul Olson	Past	Post	2010–13	MD	2008	University of Wisconsin – Madison	Identification of Genes Predicting Colonic Polyp Fate	Assistant Professor of Surgery, Emory University
Dustin Deming	Past	Post	2010–13	MD	2007	University of Wisconsin – Madison	Effect of Mutation Profile on Tumor Biology	Assistant Professor, Department of Medicine, University of Wisconsin
Jamie Hadac	Past	Pre	2010–14	BA	2010	Knox College	Identification of Genes Predicting Intrinsic Resistance to Chemotherapy	Manager, Zitter Health Insights
Chris Zahm	Past	Pre	2010–14	BS	2010	University of Wisconsin – Madison	Determination of the Clonal Architecture of Advanced Colon Cancers	Postdoctoral Fellow, Laboratory of Dr. Doug McNeel, University of Wisconsin
Laura Nettekoven	Past	Pre	2011–12	N/A	N/A	N/A	Undergraduate Research	Resident Physician, MCW – Fox Valley Family Medicine Residency/Mosaic Family Medicine

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Name	Status	Pre or Post	Training Period	Prior Academic Degree			Title of Research Project	Current Position
				Degree	Year	Institution		
Brent Kuenzi	Past	Pre	2012	N/A	N/A	N/A	Undergraduate Research	Graduate Assistant, University of Southern Florida, Moffitt Cancer Center
Molly Maher	Past	Pre	2012–13	N/A	N/A	N/A	Undergraduate Research	Clinical Research Coordinator, University of Wisconsin Carbone Cancer Center
Ian Grimes	Past	Post	2012–13	MD	2007	Southern Illinois University	Early Detection of Lynch Patients	Assistant Professor, Department of Medicine, University of Wisconsin
Malisa Middlebrooks	Past	Pre	2012–14	N/A	N/A	N/A	Undergraduate Research	Medical Laboratory Scientist, Fusion Medical Staffing
Amanda Wisinger	Past	Pre	2012–15	N/A	N/A	N/A	Undergraduate Research	Behavioral Health Technician, Desert Vista Behavioral Health Center
Kristi Neufeld	Past Visiting Scientist	Post	2013	PhD	1994	University of Utah	N/A	Associate Professor, Department of Kansas State University
Jai Hee Moon	Past Visiting Scientist	Post	2014	PhD	2011	Life and Genetic Engineering, Korea University	N/A	Scientist, Asan Medical Center, Seoul, Korea
Alex Schwartz	Past	Pre	2014–15	N/A	N/A	N/A	Undergraduate Research	Medical Scribe, PhysAssist Scribes
Devon Miller	Past	Pre	2012–16	N/A	N/A	N/A	Undergraduate Research	Medical Student, University of Wisconsin
Nick Munce	Past	Pre	2015–16	N/A	N/A	N/A	Undergraduate Research	Undergraduate

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Name	Status	Pre or Post	Training Period	Prior Academic Degree			Title of Research Project	Current Position
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Luli Zou	Past	Pre	2013–16	N/A	N/A	N/A	Undergraduate Research	Postbaccalaureate IRTA Fellow, Laboratory of Dr. Francis Collins, NIH
Tori Lodahl	Past	Pre	2014–16	N/A	N/A	N/A	Undergraduate Research	Undergraduate
Alyssa Leystra	Past	Pre	2011–16	BS	2011	University of Wisconsin – Lacrosse	Analysis of the Formation of Polyclonal Intestinal Tumors	Postdoctoral Fellow, Laboratory of Dr. Margie Clapper, Fox Chase Cancer Center
Chelsie Sievers	Past	Pre	2011–17	BS	2011	Iowa State University	Identification of Molecules Mediating Recruitment	Medical Student, University of Wisconsin
Genti Gjzeli	Past	Pre	2014–16	N/A	N/A	N/A	Undergraduate Research	Medical Student, University of Wisconsin
Logan Tenney	Past	Pre	2015–16	N/A	N/A	N/A	Undergraduate Research	Undergraduate
Quincy Rosemarie	Past	Pre	2015–16	BS	2015	University of Minnesota – Twin Cities	N/A	Graduate Assistant, Cancer Biology Program
Nicolas Koerber	Present	Pre	2017–18	N/A	N/A	N/A	Undergraduate Research	Undergraduate
PRESENT TRAINEES								
Thomas Guerin	Present	Pre	2016–	N/A	N/A	N/A	Undergraduate Research	Undergraduate
Brock Gilsdorf	Present	Pre	2016–	N/A	N/A	N/A	Undergraduate Research	Undergraduate
Emily Eberhardt	Present	Pre	2017–	N/A	N/A	N/A	Undergraduate Research	Undergraduate
Morgan Maresh	Present	Pre	2017–	N/A	N/A	N/A	Undergraduate Research	Undergraduate
Elise Warda	Present	Pre	2018–	N/A	N/A	N/A	Undergraduate Research	Undergraduate

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Name	Status	Pre or Post	Training Period	Prior Academic Degree			Title of Research Project	Current Position
				Degree	Year	Institution		
Shanna Weigand	Present	Pre	2018–	N/A	N/A	N/A	Undergraduate Research	Undergraduate

Graduate Committees

2009 Benjamin Durkee (Medical Physics, Weichert Laboratory), PhD
2013 Amy Irving (Environmental Toxicology, Dove Laboratory), PhD
2017 Carol Diaz-Diaz (Environmental Toxicology, Kennedy/Bradfield Laboratory)
Pres. Kyle Wegner (Environmental Toxicology, Vezina Laboratory)
Pres. Dalton McLean (Cancer Biology, Ricke Laboratory)
Pres. Ruben Moreno (Cancer Biology, Lambert Laboratory)
Pres. Philip Emmerich (Cellular and Molecular Pathology, Deming Laboratory)
Pres. Andrew Lynch (Burkard Laboratory)

Faculty Mentoring Committees

Pres. Matthew Merrins
Pres. Kristina Matkowskyj

Service Activities

National

2000 Participated in the Mouse Models of Human Cancer Consortium Steering Committee Meeting in Orlando, Florida.

2001 Participated in the Gene Expression Profiling Technologies workshop that was sponsored by the Mouse Models of Human Cancer Consortium and held at The Jackson Laboratory in Bar Harbor, Maine.

2001 Participated in the NCI Satellite: Experimental/Statistical Genetics of Cancer-Modifying Factors workshop that was held at the University of Wisconsin in Madison, Wisconsin.

2004 Participated in the Mouse Model of Human Cancers Consortium Steering Committee Meeting in Los Angeles, California.

2010 Participated in the National Cancer Institute Division of Cancer Biology Grantee Workshop in Bethesda, MD.

2010 Served as an Ad Hoc Grant Reviewer for the National Cancer Institute Chemo/Dietary Study Section (two meetings).

2010–pres. Served as an Ad Hoc Reviewer for several journals including Gastroenterology, Gut, Journal of the National Cancer Institute, Nature Medicine, Oncogene, and Radiology.

2012 Served as an Ad Hoc Grant Reviewer for the National Cancer Institute Chemo/Dietary Study Section (two meetings).

2012 Served as an Ad Hoc Grant Reviewer for The Broad Foundation (Broad Medical Research Program; Inflammatory Bowel Disease Grants).

2013 Served as an Ad Hoc Grant Reviewer for The Broad Foundation (Broad Medical Research Program; Inflammatory Bowel Disease Grants).

2014–pres. Served as an Ad Hoc Grant Reviewer for the National Cancer Institute Mammalian Models for Translational Research Study Section (numerous meetings)

2018 Requested to be Grant Reviewer for NCI Basic Mechanisms in Cancer Therapeutics Study Section (declined)

University of Wisconsin School of Medicine and Public Health/
University of Wisconsin/Veterans Administration

2009–12 Appointed to the School of Medicine and Public Health Animal Care and Use Committee (3-year term).

2010 Appointed to the University of Wisconsin Carbone Cancer Center Research Day Committee.

2011–pres. Appointed to the University of Wisconsin Carbone Cancer Center Small Animal Imaging Facility Advisory Committee.

2012 Served as an Ad Hoc Grant Reviewer of University of Wisconsin Carbone Cancer Center Investigator-Initiated Pilot Projects.

2012–pres. Appointed to the Institute of Clinical & Translational Research Scientific Review Committee.

2012–14 Appointed to the Department of Oncology Admissions Committee.

2012 Appointed to the Research Animal Resource Center Associate Administrator Search Committee.

2012–15 Reappointed to the School of Medicine and Public Health Animal Care and Use Committee (3-year term).

2013–16 Elected Senator for District 89 in the Faculty Senate (3 year term).

2013–pres. Served as an Ad Hoc Reviewer of VA Merit Review proposals for the Research Office of the William S. Middleton Memorial Veterans Hospital.

2014–17 Appointed as scientific voting member to the Animal Research Committee (IACUC) of the William S. Middleton Memorial Veterans Hospital.

2014 Participated in the Department of Medicine Leadership Meeting held in Lake Geneva, WI.

2014 Appointed to the Laboratory Animal Research Assistant Director Search Committee.

2014–pres. Served as an Ad Hoc Grant Reviewer for the NCI Mouse Models of Translational Research Study Section.

2015–18 Reappointed to the School of Medicine and Public Health Animal Care and Use Committee (3-year term).

2015 Served as an Ad Hoc Grant Reviewer of University of Wisconsin Carbone Cancer Center Investigator-Initiated Pilot Projects.

2015 Appointed to an Ad Hoc Committee to advise the Vice Chancellor of Research regarding the UW Press and RARC programs.

2015–pres. Appointed as the Faculty Adviser for the UWCCC Experimental Pathology Shared Resource.

2015–pres. Appointed as Director of Biomedical Research Model Services (formerly Laboratory Animal Resources Program).

2016–pres Appointed to the ACAPAC.

2016–pres. Appointed to the SMPH Space Committee.

2016–pres Appointed to UWCCC Pancreatic Cancer Center Advisory Board.
2016–pres Appointed to the UWCCC Space Committee.
2016 Appointed Chair of the Review Committee for Physiology Degree Program.
2017–pres Appointed to The Partnership Education and Research Committee.
2017 Appointed to the Institutional Official Search Committee.
2017 Appointed to Director of Research Compliance Search Committee.
2018 Appointed to RARC Trainer Search Committee.

Departmental

2011 Appointed to the Gastroenterology and Hepatology Faculty Search Committee.
2013 Appointed to the Hematology and Medical Oncology Division Head Search Committee.
2014–pres. Appointed as Co-Chair of the Division of Gastroenterology and Hepatology Research Committee.
2015–pres Appointed to the Department of Medicine Executive Committee.
2015 Appointed to the Department of Medicine Research Committee.
2015 Appointed to the Department of Medicine Research Day Committee.
2016–pres Appointed to the Department of Oncology Executive Committee.
2016 Appointed to the Department of Medicine Research Day Committee.
2017 Appointed to the Gastroenterology and Hepatology Faculty Search Committee.
2017–pres Appointed Chair of Researcher Pipeline for DOM Research Strategic Plan Work Group.
2018 Appointed to the Department of Medicine Research Day Committee.