

## **Aaron M. Mohs, Ph.D.**

Department of Pharmaceutical Sciences  
College of Pharmacy  
University of Nebraska Medical Center  
986858 Nebraska Medical Center  
Omaha, NE 68198-6858

### **EDUCATION**

- Aug. 2002 – Dec. 2006      **Doctor of Philosophy**  
Pharmaceutics and Pharmaceutical Chemistry  
University of Utah  
Salt Lake City, UT  
Dissertation: Biodegradable Macromolecular Contrast Agents for  
Magnetic Resonance Imaging. (*Defended Sept. 28, 2006*)  
Mentor: Dr. Zheng-Rong Lu, Ph.D.
- Aug. 1998 – May 2002      **Bachelor of Arts**  
Chemistry (Biology concentration)  
Saint John's University/College of Saint Benedict  
Collegeville, MN  
Undergraduate Research: Bidentate nitrogenous molybdenum  
complexes as catalysts.  
Mentor: Dr. Chris Schaller, Ph.D.

### **POSTDOCTORAL TRAINING**

- Oct. 2006 – July 2011      **Postdoctoral Fellowship**  
Biomedical Engineering  
Emory University–Georgia Institute of Technology  
Atlanta, GA  
Research Emphasis: Nanotechnology for Biomedical Imaging  
Applications  
Mentor: Dr. Shuming Nie, Ph.D.

### **ACADEMIC APPOINTMENTS**

- 2018 – Present      Associate Professor (with Tenure), Department of Pharmaceutical Sciences, College  
of Pharmacy, University of Nebraska Medical Center
- 2015 – Present      Courtesy Faculty, Biochemistry and Molecular Biology, College of Medicine,  
University of Nebraska Medical Center
- 2015 – Present      Member, The Fred and Pamela Buffett Cancer Center, University of Nebraska  
Medical Center

2015 – Present	Member, Center for Drug Delivery and Nanomedicine, University of Nebraska Medical Center
2015 – 2018	Assistant Professor (Tenure-Track), Department of Pharmaceutical Sciences, College of Pharmacy, University of Nebraska Medical Center
2015 – 2016	Adjunct Assistant Professor, Biomedical Engineering, Wake Forest University Health Sciences
2011 – 2015	Assistant Professor (Tenure-Track), Biomedical Engineering (primary), Cancer Biology (joint), and Regenerative Medicine (joint), Wake Forest University Health Sciences, Wake Forest University – Virginia Tech School of Biomedical Engineering and Sciences (SBES-WFUHS)

## CERTIFICATES AND LICENCES

None.

## GRANT/CONTRACT SUPPORT

### Current Funding

**Title:** Pancreatic Cancer Detection Consortium  
**Funding Agency:** NIH/NCI  
**Mechanism:** U01 CA210240  
**Dates:** 04/01/2018 – 03/31/2022  
**Total Dollars:** \$115,000 (Set-Aside Development Project)  
**Investigators:** PI: Hollingsworth; co-I: **Mohs**

**Title:** Development and application of a porcine model of pancreatic cancer.  
**Funding Agency:** NIH/NCI  
**Mechanism:** R01 CA222907  
**Dates:** 04/01/2018 – 03/31/2021  
**Total Dollars:** \$2,056,792 (\$1,349,451 direct)  
**Investigators:** PI: Carlson; co-I: **Mohs**, et al.

**Title:** Tunable Fluorescent Organic Nanoparticles for Cancer Imaging Applications.  
**Funding Agency:** NIH/NCI  
**Mechanism:** R21 CA212500  
**Dates:** 02/15/2017 – 01/31/2020  
**Total Dollars:** \$602,000 (\$400,000 direct)  
**Investigators:** PI: **Mohs**; co-I: Dr. Tony Hollingsworth

**Title:** Nonclinical development of NerveLight, an intra-operative peripheral nerve imaging agent.  
**Funding Agency:** NIH/NCI  
**Mechanism:** R44 CA180745  
**Dates:** 09/25/2017 – 08/31/2019  
**Total Dollars:** \$1,972,209; \$509,856 to UNMC (\$336,785 direct)  
**Investigators:** sub-PI: **Mohs**; PI: Manzanita Pharmaceuticals (Dr. Stephen Kahl)

**Title:** **Hyaluronic Acid Based Nanoparticles for Targeted Image-Guided Tumor Surgery.**  
**Funding Agency:** NIH/NIBIB  
**Mechanism:** R01 EB019449  
**Dates:** 09/25/2014 – 06/30/2019  
**Total Dollars:** \$1,325,018 (\$895,500 direct)  
**Investigators:** PI: **Mohs**; co-I: Drs. Frank C. Marini and Graca Almeida-Poroda

**Title:** **Nanoparticle Formulations of Orlistat for Treatment of Chemoresistant Cancer.**  
**Funding Agency:** NIH/NIGMS  
**Mechanism:** Project under P20 GM103480 (COBRE: Nebraska Center for Nanomedicine.)  
**Dates:** 06/01/2016 – 05/31/2019  
**Total Dollars:** \$250,000 direct  
**Investigators:** Project PI: **Mohs**

**Title:** **Imaging Wilms Tumor**  
**Funding Agency:** Department of Urology  
**Dates:** 06/01/2018 – 05/31/2019  
**Total Dollars:** \$65,682 direct  
**Investigators:** Project PI: **Mohs**

**Title:** **Nanomedicine Approaches to Image-Guided Drug Delivery in Metastatic Cancers.**  
**Funding Agency:** UNMC College of Pharmacy  
**Mechanism:** Seed Grant Funds  
**Dates:** 07/01/2017 – 06/30/2019  
**Total Dollars:** \$90,000 direct for all PIs combined  
**Investigators:** co-PIs: Drs. **Mohs**, Jered Garrison, DJ Murry, and David Oupicky

**Completed Funding**

**Title:** **Positions to Support the National Strategic Research Institute.**  
**Funding Agency:** Nebraska Research Initiative  
**Dates:** 01/01/2016 – 11/30/2018  
**Total Dollars:** \$375,550 direct  
**Investigators:** PI: **Mohs**

**Title:** **Multimodal Contrast Agents for Integrated Preoperative and Intraoperative Imaging of Pancreatic Cancer.**  
**Funding Agency:** Cattlemen's Ball Association of Nebraska  
**Mechanism:** UNMC Pancreatic SPORE Developmental Research Project  
**Dates:** 09/01/2016 – 08/31/2018  
**Total Dollars:** \$50,000 direct  
**Investigators:** PI: **Mohs**; co-I: Dr. Yutong Liu (former co-I: Dr. Michael Boska)

**Title:** **Development of contrast agents targeting to lymphangiogenesis in an orthotopic prostate cancer model.**  
**Funding Agency:** Department of Urology via Davies Philanthropy

Dates: 06/01/2016 – 05/31/2017 (continued under no-cost extension)  
 Total Dollars: \$50,000 direct  
 Investigators: PI: **Mohs**; co-PI: Dr. Samikshan Dutta; co-I: Drs. Kaustubh Datta and Chad LaGrange

**Title:** **Nanotechnology for minimally invasive for cancer detection and resection.**  
 Funding Agency: NIH/NCI  
 Mechanism: K99/R00 Pathway to Independence Award in Cancer Nanotechnology Research; K99/R00 CA153916  
 Dates: 09/03/2010 – 03/31/2017  
 Total Dollars: \$894,259 (\$654,711 direct) K99 and R00 phases combined  
 Investigators: PI: **Mohs**

**Title:** **Longitudinal assessments of placental oxygenation and perfusion using ultrasound and photoacoustics.**  
 Funding Agency: NIH/NICHD  
 Mechanism: R21 HD086357  
 Dates: 09/17/2015 – 8/31/2017  
 Total Dollars: \$45,690 (\$30,359 direct)  
 Investigators: PI: Dr. Yamaleyeva (subcontract PI: **Mohs**)

**Title:** **Multimodal contrast agents for preoperative and intraoperative imaging.**  
 Funding Agency: Nebraska Department of Health and Human Services  
 Mechanism: LB506 2017-41  
 Dates: 07/01/2016 – 06/30/2017  
 Total Dollars: \$50,000  
 Investigators: PI: **Mohs**

**Title:** **Development of Multimodal Imaging Nanoparticles for Integrated Preoperative and Intraoperative Imaging.**  
 Funding Agency: Nebraska Center for Nanomedicine  
 Mechanism: Imaging Related Pilot Grants  
 Dates: 06/01/2015 – 05/31/2017  
 Total Dollars: \$10,000  
 Investigators: PI: **Mohs**; co-PI: Dr. Michael Boska

**Title:** **Nanoparticle-Based Delivery of Novel Fatty Acid Synthase Inhibitors.**  
 Funding Agency: Wake Forest University Health Sciences & Virginia Tech  
 Mechanism: WFU Comprehensive Cancer Center - School of Biomedical Engineering and Sciences Joint Pilot Award  
 Dates: 09/01/2014 – 08/31/2015  
 Total Dollars: \$50,000  
 Investigators: PI: Dr. Steven Kridel; co-PI: **Mohs**, Dr. Todd Lowther

**Title:** **Optical Molecular Tomography for Regenerative Medicine.**  
 Funding Agency: NIH/NHLBI  
 Mechanism: Bioengineering Research Partnership; R01 HL098912  
 Dates: 03/01/2010 – 11/30/2014

Total Dollars: \$2,852,790  
 Investigators: PI: Dr. Ge Wang; co-PI: Dr. Shay Soker; co-I: **Mohs**, Dr. Yong Xu, et al.

**Title:** **Controlled Release Biomaterials for IL-35 Secreting Mesenchymal Stromal Cells for the Treatment of Type I Diabetes.**

Funding Agency: Wake Forest Institute for Regenerative Medicine  
 Mechanism: Promoting Innovative Discoveries Pilot  
 Dates: 08/01/2014 – 07/31/2015 (approximate)  
 Total Dollars: \$25,000  
 Investigators: PI: **Mohs**; co-PIs: Drs. Emmanuel Opara, Chris Porada, Graca Almeida-Porada

**Title:** **New Near Infrared Imaging Method to Detect Genetically Labeled Cells Using a Nerve/Muscle Construct Model.**

Funding Agency: Wake Forest Institute for Regenerative Medicine  
 Mechanism: Pilot Seed Grant  
 Dates: 06/01/2012 – 05/31/2013 (approximate)  
 Total Dollars: \$25,000  
 Investigators: PI: **Mohs**; co-PIs: Drs. Khalil Bitar, Frank Marini, Robert Gilmont

## STUDY SECTIONS

### National/International

2018 Member, Special Emphasis Panel (ZHL1 CSR-Q (F1)), Bold New Bioengineering Methods and Approaches for Heart, Lung, Blood and Sleep Disorders and Diseases (R21), NHLBI/NIH, Washington, DC Member, NHLBI

2018 Member, Special Emphasis Panel (ZCA1 TCRB-J (O1)), Innovative Molecular Analysis Technologies, NCI/NIH, Bethesda, MD

2017,2018 *Ad hoc* Member, Medical Imaging Study Section (MEDI), NIH Center for Scientific Review

2015 Member, Special Emphasis Panel (2015/05 ZCA1 TCRB-Q (M1)), Centers for Cancer Nanotechnology Excellence (CCNE), NCI/NIH, Bethesda, MD

2015 Reviewer, Applied and Engineering Researches, Ministry of Science and Technology, State of Israel

### State

2013 – Present Scientific Review Panel, Maryland Stem Cell Research Fund, Baltimore MD

2013 Scientific Review Panel, NYSTEM Program, Reston VA

### Institutional

2017 – Present Reviewer, Graduate Student Fellowship – Cell Bio; Chair: Dr. Matthew Zimmerman

2016 – Present Reviewer, Graduate Student Fellowship – Drug Development; Chair: Dr. Rakesh Singh

## PATENTS

### Issued Patents

1. Nie S, **Mohs AM**, Mancini MC, inventors; Emory University, assignee. Integrated system and methods for real-time anatomical guidance in a diagnostic or therapeutic procedure. United States patent US 9,451,882. 2016 Sept 27.
2. Nie S, **Mohs AM**, Mancini MC, inventors; Emory University, assignee. Additional systems and methods for providing real-time anatomical guidance in a diagnostic or therapeutic procedure. United States patent US 9,345,389. 2016 May 24.

### Pending Patents

1. **Mohs AM**, Svechkarev D, Payne WM. Tunable fluorescent organic nanoparticles and methods of making and using the same. United States provisional patent application US 62/459,082. 2017 Feb 15.
2. **Mohs AM**, Hill TK, Kridel SJ. FAS Inhibitors and Methods Associated Therewith. United States provisional patent application US 15/328,797. 2017 Jan 24.
3. **Mohs AM**, Kridel SJ. Hyaluronic Acid-Based Nanoparticles as Biosensors for Imaging-Guided Surgery and Drug Delivery Vehicles and Methods Associated Therewith. United States provisional patent application US 15/326,694. 2017 Jan 10.
4. Zong Y, Lu ZR, **Mohs AM**, Feng Y, inventors; University of Utah assignee. Biodegradable macromolecular MRI contrast agents and methods of preparation and use thereof. United States provisional patent application US 60/814,449. 2006 June 16.

### Active Technology Disclosures

1. **Mohs AM**, Svechkarev D, Payne WM. Tunable fluorescent organic nanoparticles. UNMC ref: 17015. (Disclosure: September 20, 2016).
2. **Mohs AM**, Svechkarev D, Payne WM. Polymer-based Staining and Sensing Agents. UNMC ref: 17014 (Disclosure: September 20, 2016).

## CONSULTING POSITIONS

- 2014 – Present      Associate Editor, *Frontiers in Pharmacology: Integrative and Regenerative Pharmacology*
- 2011 – 2012      Senior Scientific Consultant, SpectroPath, Inc., Atlanta, GA

### Manuscript Ad Hoc Reviewer (Impact Factor)

*Acta Biomaterialia* (6.319)  
*ACS Applied Materials and Interfaces* (7.504)  
*ACS Nano* (13.334)  
*ACS Sensors* (5.711)  
*Advanced Drug Delivery Reviews* (15.606)

*Advanced Materials* (19.791)  
*Advanced Functional Materials* (11.382)  
*American Journal of Roentgenology* (2.731)  
*Analytical & Bioanalytical Chemistry* (3.578)  
*Analytical Chemistry* (5.636)  
*Bioconjugate Chemistry* (4.513)  
*Biomaterials* (8.387)  
*Cancer Research* (9.130)  
*Carbohydrate Polymers* (5.158)  
*Colloids and Surfaces B: Biointerfaces* (4.125)  
*Endocrine-Related Cancer* (5.267)  
*European Polymer Journal* (3.242)  
*IEEE Transactions on Biomedical Engineering* (3.577)  
*Journal of Applied Polymer Science* (1.600)  
*Journal of Controlled Release* (7.786)  
*Journal Biomedical Applications* (2.082)  
*Journal of Medicinal Chemistry* (6.259)  
*Journal of Photochemistry and Photobiology A: Chemistry* (2.625)  
*Medical Physics* (2.635)  
*Molecular Pharmaceutics* (4.384)  
*Nanomedicine: Nanotechnology, Biology, and Medicine* (6.692)  
*Nature Nanotechnology* (35.267)  
*Pharmaceutical Research* (3.420)  
*PLOS ONE* (3.057)  
*Scientific Reports* (5.228)  
*Small* (8.315)  
*Theranostics* (8.712)  
*Translational Research* (4.652)

## MILITARY SERVICE

None.

## HONORS AND AWARDS

2017	New Investigator Award, University of Nebraska Medical Center
2014	Wake Forest Comprehensive Cancer Center Nominee, Pew-Stewart Scholars Program for Cancer Research
2010	Innovation of the Year (Integrated Imaging and Spectroscopy System for Image-Guided Surgery) – awarded by the Emory Office of Technology Transfer
2006 – 2011	Emory – Georgia Tech Center for Cancer Nanotechnology Excellence Distinguished Fellowship
2006	Wolf Prize – awarded to a University of Utah College of Pharmacy graduate student for excellence in teaching, highest award given by the College of Pharmacy

2006	Jeffrey A. Fox Award – awarded to University of Utah, Pharmaceutics graduate student for dedication and service to department
2005	PhRMA Foundation Predoctoral Fellowship awarded by the PhRMA Foundation, Washington, DC
2005	Vice-Chair, Student Advisory Committee, Pharmaceutics and Pharmaceutical Chemistry, University of Utah
2002	Enzon Fellowship awarded by Enzon Inc., Piscataway, NJ
2000	St. John’s University Study Abroad Program at the University of Salzburg
1999 – 2000	Siehl Scholarship – awarded by St. John’s University for academic excellence and leadership
1998 – 2002	President’s Scholarship – awarded by St. John’s University, based on academic achievement, service, and leadership
1998 – 2002	Recognition Scholarship for Students in Science – awarded by St. John’s University, based on academic achievement in science

## **MEMBERSHIPS/OFFICES IN PROFESSIONAL SOCIETIES**

### **Memberships**

American Association for Cancer Research (AACR)  
 American Association of Pharmaceutical Scientists (AAPS)  
 American Chemical Society (ACS)  
 Controlled Release Society (CRS)  
 International Society for Fluorescence Guided Surgery (ISFGS)  
 World Molecular Imaging Society (WMIS)

### **Society and National Organization Service Contributions**

2018	World Molecular Imaging Congress, Oncology Category co-Chair, Session Moderator at Annual Meeting (Seattle, WA)
2017	Abstract Reviewer, World Molecular Imaging Congress, World Molecular Imaging Society
2016	UNMC AAPS Student Chapter Early-stage Career Development Panelist
2014	Vice-Chair, Regenerative Imaging and Sensing Working Group; Tissue Engineering and Regenerative Medicine International Society
2012	Session Chair, Cancer Imaging, Biomedical Engineering Society Annual Meeting
2013 – 2014	Selection Committee Chair, Wake Forest Institute of Regenerative Medicine Young Investigator Award; Tissue Engineering and Regenerative Medicine International Society
2013 – 2014	Abstract Reviewer, Cancer Technologies, Biomedical Engineering Society Annual Meeting



2013	Invited Faculty Panelist on Career Development at the Biomaterials Gordon Research Seminar; Holderness, NH
2013	Abstract Reviewer, Imaging Technologies, Tissue Engineering and Regenerative Medicine International Society
2011 – 2012	Chair, Nanomaterials/Nanoformulations Working Group, NCI Alliance for Nanotechnology in Cancer
2008	Participant, NIST-ASTM sponsored interlaboratory study (ILS) on nanotechnology standardization
2007 – 2010	Participant, NCI Working Group to set standards for nanotechnology as a chemical and biological technology for cancer informatics, detection, and treatment

## **COMMITTEE/ADMINISTRATIVE ASSIGNMENTS**

### **University of Nebraska Medical Center**

July 2018 – Present	Director, Pharmaceutical Sciences Graduate Program
July 2018 – Present	UNMC Faculty Senate, College of Pharmacy Representative, Executive Committee Member
Jan. 2018 – Present	Director, Optical Surgical Navigation Shared Resource, Fred & Pamela Buffett Cancer Center
Jan. 2018 – Present	Direct, University of Nebraska at Omaha – UNMC COP Internship Program
Nov. 2017 – Present	Bioimaging Core Advisory Committee (Chair. Dr. Yutong Liu)
July 2016 – Present	Pharmaceutical Sciences Graduate Program Committee (Chair since 2018)
June 2016 – Sept. 2016	College of Pharmacy Business Manager Search Committee (Chair: Dr. Christopher Shaffer)
Jan. 2016 – Present	Cancer Research Graduate Program Committee (Chair: Dr. Joyce Solheim)
July 2015 – Present	Member, Admissions Committee, UNMC College of Pharmacy (co-Chairs: Drs. Christopher Shaffer and Charles Krobot)

### **Wake Forest University Health Sciences**

July 2013 – Mar. 2015	Biomedical Engineering Society (BMES) Wake Forest Student Chapter Faculty Advisor
July 2012 – Mar. 2015	Wake Forest Institute for Regenerative Medicine Departmental Animal Care and Use Committee Reviewer
Sept. 2011 – Mar. 2015	Wake Forest – Virginia Tech School of Biomedical Engineering and Sciences Faculty search committee

**Doctor of Philosophy Graduate Student Committees**

Dec. 2018 – Present	Member, Graduate Committee for Insaya Mukadam (UNMC-PSGP); <b>Chair: Dr. Howard Gendelman</b>
Nov. 2018 – Present	Member, Graduate Committee for Zhifeng Zhao (UNMC-PSGP); <b>Chair: Dr. Dong Wang</b>
Aug. 2018 – Present	Member, Graduate Committee for Mai Mustafa (UNMC-PSGP); <b>Chair: Dr. Joseph Vetro</b>
Apr. 2018 – Present	Chair, Graduate Committee for Paul Lovell (UNMC-PSGP); <b>Chair: Dr. Aaron Mohs</b>
Apr. 2018 – Present	Chair, Graduate Committee for Aishwarya Bapat (UNMC-PSGP); <b>Chair: Dr. Aaron Mohs</b>
Oct. 2017 – Present	Chair, Graduate Committee for Madeline Olsen (UNMC-CRGP); <b>Chair: Dr. Aaron Mohs</b>
June 2016 – Present	Chair, Graduate Committee for Bowen Qi (UNMC-PSGP); <b>Chair: Dr. Aaron Mohs</b>
May 2016 – Present	Chair, Graduate Committee for Nick Wojtynek (UNMC-CRGP); <b>Chair: Dr. Aaron Mohs</b>
Aug. 2015 – Present	Chair, Graduate Committee for William Payne (UNMC-PSGP); <b>Chair: Dr. Aaron Mohs</b>
Aug. 2015 – Present	Chair, Graduate Committee for Deep Bhattacharya (UNMC-PSGP); <b>Chair: Dr. Aaron Mohs</b>
May 2015 – Present	Member, Graduate Committee for Yi Chen (UNMC-PSGP); Chair: Dr. David Oupicky
Aug. 2016 – Present	Member, Graduate Committee for Yu Hang (UNMC-PSGP); Chair: Dr. David Oupicky
Aug. 2014 – Present	Member, Graduate Committee for Ellie McCabe (WFUHS-Molecular Medicine); Chair: Dr. Nicole Levi-Polyachenko (WFUHS)
Aug. 2011 – June 2017	Member, Graduate Committee for Etai Sapoznik (WFUHS-Biomedical Engineering); Chair: Dr. Shay Soker
Feb. 2017 – May 2017	Member, Graduate Committee for Yinnong Jai (UNMC-PSGP); Chair: Dr. Jered Garrison
Aug. 2012 – Dec. 2015	Member, Graduate Committee for Benjamin Rowe (WFUHS-Physiology/Pharmacology); Chair: Dr. George Christ (WFUHS)

Aug. 2012 – Aug. 2015	Member, Graduate Committee for Hannah Baker (WFUHS-Biomedical Engineering); Chair: Dr. George Christ (WFUHS)
June 2012 – July 2015	Member, Graduate Committee for Riu Wang (WFUHS-Biomedical Engineering); Chair: Dr. William Wagner (WFUHS)
Aug. 2011 – May 2015	Member, Graduate Committee for John P. McQuelling (WFUHS-Biomedical Engineering); Chair: Dr. Emmanuel Opara (WFUHS)
Jan. 2012 – Apr. 2015	Chair, Graduate Committee for Tanner Hill (WFUHS-Biomedical Engineering); <b>Chair: Dr. Aaron Mohs (WFUHS)</b>
Jun. 2012 – Apr. 2015	Co-Chair, Graduate Committee Elizabeth (Graham) Gurysh (WFUHS-Biomedical Engineering); Chair: Dr. Nicole Levi-Polyachenko (WFUHS), <b>Co-Chair: Dr. Aaron Mohs (WFUHS)</b>
Aug. 2011 – Jan. 2015	Member, Graduate Committee for John Scott (WFUHS-Biomedical Engineering); Chair: Dr. George Christ (WFUHS)

#### **Master of Science Graduate Student Committees**

Aug. 2017 – Present	Member, Graduate Committee for Yuanyuan Sun (UNMC-PSGP); Chair: Dr. Dong Wang (UNMC)
Aug. 2014 – Jun. 2015	Chair, Graduate Committee for William Payne (WFUHS-Biomedical Engineering); <b>Chair: Aaron Mohs (WFUHS)</b>
Aug. 2011 – May. 2012	Member, Graduate Committee for Riu Wang (WFUHS-Biomedical Engineering); Chair: Dr. William Wagner (WFUHS)

## **PRESENTATIONS**

### **International, National, and Regional Meetings**

1. **Mohs AM.** Tunable Fluorescent Organic Nanoparticles for Cancer Imaging Applications. NCI Innovative Molecular Analysis Technologies PI Meeting; Rockville, MD, December 2018.
2. **Mohs AM.** Fluorescent hyaluronic acid nanoparticles enhance pancreatic cancer in mice for surgical navigation. Contrast Media Research; Durango, CO, October 2017.
3. **Mohs AM (Invited).** Image-guided surgery using near infrared fluorescent nanoparticles. NanoBio China 2016 the 1<sup>st</sup> Symposium on Minimally Invasive and Image Guided Surgery; Nanjing, China, October 2016.
4. **Mohs AM.** Image-guided surgery for tumor removal using hyaluronic acid-derived near infrared fluorescent nanoparticles. 10<sup>th</sup> World Biomaterials Congress; Montreal, Canada, May 2016.
5. **Mohs AM.** Intraoperative Imaging Using Near Infrared Fluorescent Hyaluronic Acid. 7<sup>th</sup> Annual Sino-U.S. Joint Research Forum; Omaha, NE, May 2016.

6. Kelkar SS, Hill TK, Payne WM, **Mohs AM**. Near Infrared Fluorescent Self-Assembled Nanoparticles for Image-Guided Surgery; Materials Research Society Fall Meeting & Exhibit; Boston, MA, December 2015.
7. **Mohs AM**, Hill TK, Kelkar SS, Marini FC, Levine, E. Hyaluronic Acid Derived Nanoparticles with Activatable Fluorescence for Image-Guided Tumor Surgery; Biomedical Engineering Society Annual Meeting; San Antonio, TX, October 2014.
8. **Mohs AM**, Raghavan S, Gilmont R, Somara S, Marini FC, Bitar KN. Near Infrared Fluorescent Neural Progenitor Cells to Track Differentiation and Tissue Innervation; Biomedical Engineering Society Annual Meeting; San Antonio, TX, October 2014.
9. **Mohs AM**. Nanotechnology for Minimally Invasive Cancer Detection and Resection; NCI Alliance for Nanotechnology in Cancer Investigators Meeting; Rockville, MD, October 2014.
10. **Mohs AM**. Near Infrared Fluorescent Protein Labeling of Enteric Nerve Cells: Development and Initial Characterization of IM-FEN-iRFP Cells, North Carolina Tissue Engineering and Regenerative Medicine Society Annual Meeting; Winston-Salem, NC, October 2013.
11. **Mohs AM**. Nanotechnology for Image-Guided Intervention: Potential for Prostate Cancer?, Prostate Cancer Research and Translation Symposium; Winston-Salem, NC, March 2013.
12. **Mohs AM**, Mancini MC, Qian X, Wang Y, Provenzale JM, Nie S. Nanotechnology for Guided Tumor Resection, NCI Alliance for Nanotechnology in Cancer Investigators Meeting; Houston, TX, November 2012.
13. **Mohs AM**, Wang Y, Qian X, Mancini MC, Provenzale J, Nie S. Nanotechnology for Spectroscopic and Image-Guided Tumor Resection, Biomedical Engineering Society Annual Meeting; Atlanta, GA, October 2012.
14. **Mohs AM**. Tumor cell marker imaging: searching for the micrometastases that change the game, RSNA/ASTRO Cancer Imaging and Radiation Therapy Symposium; Atlanta, GA, April 2011 (co-presenters Provenzale JM and Mancini MC).
15. **Mohs AM**. Laser-guided widefield imaging and spectroscopy for guidance during surgical resection of tumors, Fitzpatrick Institute for Photonics Annual Meeting; Duke University, Durham, NC, October 2010 (co presenters Mancini MC, Provenzale JM).
16. **Mohs AM**, Mancini MC, Provenzale JM, Singhal S, Wang MD, Nie S. A hand-held imaging and spectroscopy device for intraoperative, contrast-enhanced tumor detection, Biomedical Engineering Society Annual Meeting; Austin, TX, October 2010.
17. **Mohs AM**, Raza SH, White, WB, Kaddi C, Mancini MC, Nie S, Wang MD, Singhal S. The development of a novel endoscope to visualize residual tumor cells following cancer surgery, American College of Surgeons 95<sup>th</sup> Annual Clinical Congress; Chicago, IL, October 2009.
18. **Mohs AM**, Smith AM, Mancini MC, Wen MM, Nie S. Investigating the Interactions, Consequences, and Applications of Nanoparticles at Biological Interfaces, NCI Alliance for Nanotechnology in Cancer Investigators Meeting; Chicago, IL, September 2008.

19. **Mohs AM**, Zong Y, Goodrich KC, Parker DL, Lu ZR. PEG-*g*-(GdDTPA-co-L-cystine): effect of PEG chain length on in vivo contrast enhancement in MRI, Utah Center for Advanced Imaging Research 17th Annual Symposium; Salt Lake City, UT, October 2005.
20. **Mohs AM**, Wang X, Zong Y, Goodrich KC, Parker DL, Lu ZR. PEG-*g*-(GdDTPA-co-L-cystine): a biodegradable macromolecular contrast agent for blood pool MR imaging, Utah Center for Advanced Imaging Research 16<sup>th</sup> Annual Symposium; Park City, UT, November 2004.

#### **Invited External Institution Presentations**

1. **Mohs AM**. Surgical imaging using near infrared fluorescence. South Dakota State University; Brookings, SD, December 2017.
2. **Mohs AM**. Biomedical imaging and nanotechnology: An example of how clinical challenges guide scientific innovation, Glen Arth Seminar Series, College of St. Benedict/St. John's University; St. Joseph, MN, November 2016.
3. **Mohs AM**. Contrast-enhanced fluorescence for intraoperative imaging. Frank Reidy Research Center for Bioelectrics (FRRCE), Old Dominion University; Norfolk, VA, October 2016.
4. **Mohs AM**. Hyaluronan-derived nanoparticles for biomedical applications: Experiences in imaging and drug delivery. China Pharmaceutical University; Nanjing, China, October 2016.
5. **Mohs AM**. The Role of Cancer Nanotechnology for Intraoperative Imaging, College of Engineering, University of Nebraska at Lincoln; Lincoln, NE, April 2016.
6. **Mohs AM**. Cancer Nanotechnology: Applications for Image-Guided Surgery; Department of Chemistry, University of Nebraska at Omaha; Omaha, NE, April 2016.
7. **Mohs AM**. Nanotechnology for Contrast-Enhanced Fluorescence-Guided Surgery; LI-COR Biosciences; Lincoln, NE, December 2015.
8. **Mohs AM**. Nanotechnology for Image-Guided Tumor Surgery; Biomedical Engineering, University of South Dakota; Sioux Falls, SD, September 2014.
9. **Mohs AM**. Hyaluronic Acid Derived Nanoparticles for Image-Guided Surgery and Drug Delivery; Chemistry, Wake Forest University; Winston-Salem, NC, September 2014.
10. **Mohs AM**. Nanotechnology for Emerging Biomedical Applications, Joint School for Nanoscience and Nanoengineering at UNC Greensboro and NC A&T, Greensboro, NC, November 2012.
11. **Mohs AM**. Nanotechnology for medical and surgical imaging: current status and future possibilities, Duke Radiology Grand Rounds; Durham, NC, January 2011 (co-presenter Provenzale JM).
12. **Mohs AM**. Wide-field optical imaging with interactive excitation and spectroscopy to resect contrast-enhanced tumors, Northeastern University; Boston, MA, January 2011.
13. **Mohs AM**. Wide-field optical imaging using point excitation and spectroscopy for image-guided resection of contrast-enhanced tumors, UT Southwestern Medical Center; Dallas, TX, November 2010.

14. **Mohs AM.** Quantum dots for cellular and molecular imaging: unusual optical properties and cellular toxicity, Invited speaker at UT Dallas; Richardson, TX, November 2010.
15. **Mohs AM.** Integrated Spectroscopy and Imaging for Intraoperative Cancer Detection and Surgical Oncology, Case Western Reserve University; Cleveland, OH, January 2010.

**Invited Internal Presentations (most recent)**

1. **Mohs AM.** Fluorescence-Guided Intraoperative Imaging for Surgical Oncology. Eppley Institute Seminar Series, Omaha, NE, December 2018.
2. **Mohs AM.** Image-Guidance in Surgical Oncology: Hyaluronic Acid Formulations of Near Infrared Fluorophores. Surgery Research Forum, Omaha, NE, September 2018.
3. **Mohs AM.** Multimodal contrast agents for integrated preoperative and intraoperative imaging of pancreatic cancer. Pancreatic SPORE External Advisory Board Meeting; Omaha, NE, November 2017.
4. **Mohs AM.** The versatility of hyaluronic acid as a therapeutic and imaging agent delivery vehicle. Cancer Genes & Molecular Regulation Program (CGMRP), Buffett Cancer Center; Omaha, NE, September 2017.
5. **Mohs AM.** Nanoparticle formulations of Orlistat for treatment of chemoresistant cancer: an update. COBRE External Advisory Board Meeting; Omaha, NE, July 2017.
6. **Mohs AM.** Nanoparticle-based detection technology. Air Force Surgeon General Acquisition Staff; Omaha, NE, July 2017
7. **Mohs AM.** Applications of modified polysaccharides: Experiences in intraoperative imaging and drug discovery, Biochemistry and Molecular Biology Seminar Series, UNMC; Omaha, NE, February 2017.
8. **Mohs AM.** Multimodality contrast agent development: Potential for pancreatic cancer. UNMC Pancreatic SPORE Meeting; Omaha, NE, August 2016.
9. **Mohs AM.** Image-guided surgery: Investigations at the interface of science, medicine, and engineering. MD-PhD Scholars Program Invited Seminar; Omaha, NE, June 2016.
10. **Mohs AM.** Nanoparticle formulations of Orlistat for treatment of chemoresistant cancer. COBRE Retreat; Nebraska City, NE, June 2016.
11. **Mohs AM.** Surgical Guidance Using Near Infrared Fluorescence; Invited Seminar; Genitourinary Oncology Focus Group, University of Nebraska Medical Center; Omaha, NE, April 2016.
12. **Mohs AM.** Nanoparticle Formulations of near infrared dyes for image-guided surgery. Surgery Research Forum, Omaha, NE, March 2016.

**COMMUNITY SERVICE/OUTREACH**

- 2018 Marshal, Pinnacle Bank Championship, Golf Course at Indian Creek, Elkhorn, NE  
 2012 Science fair evaluator, Sherwood Forest Elementary, Winston-Salem, NC

**PUBLICATIONS**

**A) Published Journal Articles**

1. Olson MT, Ly QP, **Mohs AM**. Fluorescence Image-Guided Surgery in Surgical Oncology. *Mol. Imaging Biol.* **2018**; (In Press). PMID: 29942988
2. Soucek JJ, Wojtynek NE, Payne WM, Holmes MB, Dutta S, Qi B, Datta K, LaGrange CA, **Mohs AM**. Optimized hyaluronic acid formulation of near infrared fluorophores for surgical detection of a prostate tumor xenograft. *Acta Biomater.* **2018**; 75:323-333. PMID: 29890268
3. Svechkarev D, Kyrychenko A, Payne WM, **Mohs AM**. Probing the self-assembly dynamics and internal structure of amphiphilic hyaluronic acid conjugates by fluorescence spectroscopy and molecular dynamics simulations. *Soft Matter* **2018**; 14(23):4762-4771. PMID: 29799600
4. Svechkarev D, Sadykov MR, Bayles KW, **Mohs AM**. A ratiometric fluorescent sensor array as a versatile tool for bacterial pathogen identification and analysis. *ACS Sens.* **2018**;3(3):700-708. PMID: 29504753
5. Svechkarev D, **Mohs AM**. Organic fluorescent dye-based nanomaterials: Advances in the rational design for imaging and sensing applications. *Curr. Med. Chem.* **2018**;(In Press). PMID: 29484973
6. Gurysh E, Kelkar S, McCabe-Lankford E, Kuthirummal N, Brown T, Kock N, **Mohs AM**, Levi-Polyachenko N. Hybrid donor-acceptor polymer particles with amplified energy transfer for detection and on-demand treatment of breast cancer. *ACS Appl. Mater. Interfaces.* **2018**; 10(9):7697-7703. PMID: 29457709
7. Qi B, Crawford AJ, Wojtynek NE, Holmes MB, Soucek JJ, Almeida-Porada G, Ly QP, Cohen SM, Hollingsworth MA, **Mohs AM**. Indocyanine green loaded hyaluronan-derived nanoparticles for fluorescence-enhanced surgical imaging of pancreatic cancer. *Nanomedicine* **2018**;14:769-780. PMID: 29325740
8. Payne WM, Svechkarev D, Kyrychenko A, **Mohs AM**. The role of hydrophobic modification on hyaluronic acid dynamics and self-assembly. *Carbohydr. Polym.* **2018**;182:132-141. PMID: 29279107
9. Svechkarev D, Kyrychenko A, Payne WM, **Mohs AM**. Development of colloiddally stable carbazole-based fluorescent nanoaggregates. *J. Photochem. Photobiol A.* **2018**;352:55-64.
10. Bogdan D, Svechkarev D, Arnulf R, Tromayer M, Liska R, **Mohs AM**, Vauthey E. Direct observation of a photochemical alkyne-allene reaction and of a twisted and rehybridized intramolecular charge-transfer state in a donor-acceptor dyad. *J. Am. Chem. Soc.* **2017**;139(46):16885-16893. PMID: 29068229
11. Bhattacharya D, Svechkarev D, Soucek JJ, Hill TK, Taylor MA, Natarajan A, **Mohs AM**. Impact of structurally modifying hyaluronic acid on CD44 interaction. *J Mater Chem B.* **2017**;5(41):8183-8192. PMID: 29354263
12. Payne WM, Hill TK, Svechkarev D, Holmes MB, Sajja B, **Mohs AM**. Multimodal imaging nanoparticles derived from hyaluronic acid for integrated preoperative and intraoperative cancer imaging. *Contrast Media Mol Imaging.* **2017**;Article ID 9616791. PMID: 29097944

13. Soucek JJ, Davis AL, Hill TK, Holmes MB, Qi B, Singh PK, Kridel SJ, **Mohs AM**. Combination treatment with orlistat-containing nanoparticles and taxanes is synergistic and enhances microtubule stability in taxane-resistant prostate cancer cells. *Mol Cancer Ther*. **2017**;16(9):1819–1830. PMID: 28615298
14. Zarifpour M, Andersson K-E, Kelkar SS, **Mohs A**, Mendelsohn C, Schneider K, Marini F, Christ GJ. Characterization of a murine model of bioequivalent bladder wound healing and repair following subtotal cystectomy. *Biores Open Access*. **2017**;6(1):35–45. PMID: 28560089
15. Hill TK, Kelkar SS, Wojtynek NE, Soucek JJ, Payne WM, Stumpf K, Marini FC, **Mohs AM**. Near infrared fluorescent nanoparticles derived from hyaluronic acid improve tumor contrast for image-Guided surgery. *Theranostics*. **2016**;6(13):2314–2328. PMID: 27877237
16. Yoon Y, **Mohs AM**, Mancini MC, Nie S, Shim H. Combination of an integrin-targeting NIR tracer and an ultrasensitive spectroscopic device for intraoperative detection of head and neck tumor margins and metastatic lymph nodes. *Tomography*. **2016**;2(3):215–222. PMID: 27738656
17. Kelkar SS, Hill TK, Marini FC, **Mohs AM**. Near infrared fluorescent nanoparticles based on hyaluronic acid: Self-assembly, optical properties, and cell interaction. *Acta Biomater*. **2016**;36:112–21. PMID: 26995504
18. Hill TK, Davis AL, Wheeler FB, Kelkar SS, Freund EC, Lowther WT, Kridel SJ, **Mohs AM**. Development of a Self-Assembled Nanoparticle Formulation of Orlistat, Nano-ORL, with Increased Cytotoxicity against Human Tumor Cell Lines. *Mol Pharm*. **2016**;13(3):720–8. PMID: 26824142
19. Hill TK, **Mohs AM**. Image-guided tumor surgery: will there be a role for fluorescent nanoparticles? *WIREs Nanomed Nanobiotechnol*. **2016**;8(4):498–511. PMID: 26585556
20. Niu G, Sapoznik E, Lu P, Criswell T, **Mohs AM**, Wang G, Lee S-J, Xu Y, Soker S. Fluorescent imaging of endothelial cells in bioengineered blood vessels: the impact of crosslinking of the scaffold. *J Tissue Eng Regen Med*. **2016**;10(11):955–966. PMID: 24616385
21. Stevenson AT, Reese LM, Hill TK, McGuire J, **Mohs AM**, Shekhar R, Bickford LR, Whittington AR. Fabrication and characterization of medical grade polyurethane composite catheters for near-infrared imaging. *Biomaterials*. **2015**;54:168–76. PMID: 25907050
22. Hill TK, Abdulahad A, Kelkar SS, Marini FC, Long TE, Provenzale JM, **Mohs AM**. Indocyanine green-loaded nanoparticles for image-guided tumor surgery. *Bioconjug Chem*. **2015**;26(2):294–303. PMID: 25565445
23. **Mohs AM\***, Mancini MC, Provenzale JM, Saba CF, Cornell KK, Howerth EW, Nie S. An integrated widefield imaging and spectroscopy system for contrast-enhanced, image-guided resection of tumors. *IEEE Trans Biomed Eng*. **2015**;62(5):1416–1424. PMID: 25585410. \*Denotes corresponding author.
24. Opie AMT, Bennett JR, Walsh M, Rajendran K, Yu H, Xu Q, Butler A, Butler P, Cao G, **Mohs AM**, Wang G. Study of scan protocol for exposure reduction in hybrid spectral micro-CT. *Scanning*. **2014**;36(4):444–55. PMID: 24604215



25. Bennett JR, Opie AMT, Xu Q, Yu H, Walsh M, Butler A, Butler P, Cao G, **Mohs A**, Wang G. Hybrid spectral micro-CT: system design, implementation, and preliminary results. *IEEE Trans Biomed Eng.* **2014**;61(2):246–53. PMID: 23996533
26. Provenzale JM, **Mohs AM**. Nanotechnology in neurology-current status and future possibilities. *US Neurol.* **2010**;6(1):12–17.
27. **Mohs AM**, Mancini MC, Singhal S, Provenzale JM, Leyland-Jones B, Wang MD, Nie S. Hand-held spectroscopic device for in vivo and intraoperative tumor detection: contrast enhancement, detection sensitivity, and tissue penetration. *Anal Chem.* **2010**;82(21):9058–65. PMID: 20925393
28. **Mohs AM**, Provenzale JM. Applications of nanotechnology to imaging and therapy of brain tumors. *Neuroimaging Clin N Am.* **2010**;20(3):283–92. PMID: 20708547
29. **Mohs AM**, Duan H, Kairdolf BA, Smith AM, Nie S. Proton-resistant quantum dots: stability in gastrointestinal fluids and implications for oral delivery of nanoparticle agents. *Nano Res.* **2009**;2(6):500–508. PMID: 20379372
30. Smith AM, **Mohs AM**, Nie S. Tuning the optical and electronic properties of colloidal nanocrystals by lattice strain. *Nat Nanotechnol.* **2009**;4(1):56–63. PMID: 19119284
31. Smith AM, Duan H, **Mohs AM**, Nie S. Bioconjugated quantum dots for in vivo molecular and cellular imaging. *Adv Drug Deliv Rev.* **2008**;60(11):1226–40. PMID: 18495291
32. Feng Y, Jeong E-K, **Mohs AM**, Emerson L, Lu Z-R. Characterization of tumor angiogenesis with dynamic contrast-enhanced MRI and biodegradable macromolecular contrast agents in mice. *Magn Reson Med.* **2008**;60(6):1347–52. PMID: 19025902
33. **Mohs AM**, Lu Z-R. Gadolinium(III)-based blood-pool contrast agents for magnetic resonance imaging: status and clinical potential. *Expert Opin Drug Deliv.* **2007**;4(2):149–64. PMID: 17335412
34. **Mohs AM**, Nguyen T, Jeong E-K, Feng Y, Emerson L, Zong Y, Parker DL, Lu Z-R. Modification of Gd-DTPA cystine copolymers with PEG-1000 optimizes pharmacokinetics and tissue retention for magnetic resonance angiography. *Magn Reson Med.* **2007**;58(1):110–8. PMID: 17659618
35. Zong Y, Guo J, Ke T, **Mohs AM**, Parker DL, Lu Z-R. Effect of size and charge on pharmacokinetics and in vivo MRI contrast enhancement of biodegradable polydisulfide Gd(III) complexes. *J Control Release.* **2006**;112(3):350–6. PMID: 16631270
36. Lu Z-R, **Mohs AM**, Zong Y, Feng Y. Polydisulfide Gd(III) chelates as biodegradable macromolecular magnetic resonance imaging contrast agents. *Int J Nanomedicine.* **2006**;1(1):31–40. PMID: 17722260
37. Zong Y, Wang X, Goodrich KC, **Mohs AM**, Parker DL, Lu Z-R. Contrast-enhanced MRI with new biodegradable macromolecular Gd(III) complexes in tumor-bearing mice. *Magn Reson Med.* **2005**;53(4):835–42. PMID: 15799038
38. **Mohs AM**, Zong Y, Guo J, Parker DL, Lu Z-R. PEG-g-poly(GdDTPA-co-L-cystine): effect of PEG chain length on in vivo contrast enhancement in MRI. *Biomacromolecules.* **2005**;6(4):2305–11. PMID:

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39. **Mohs AM**, Wang X, Goodrich KC, Zong Y, Parker DL, Lu Z-R. PEG-g-poly(GdDTPA-co-L-cystine): a biodegradable macromolecular blood pool contrast agent for MR imaging. *Bioconjug Chem.* **2004**;15(6):1424–30. PMID: 15546211

#### B) Chapters in Books

1. Kelkar SS, **Mohs AM**. Translational Imaging for Regenerative Medicine. In *Translational Regenerative Medicine*; Atala A, Allickson J, Eds.; Academic Press: Elsevier: Waltham, MA, 2015; pp 257-265.

#### C) Media Features

Related to manuscript Mohs AM, et al. *Anal Chem.* 2010;82(21):9058–65. PMID: 20925393.

[Chemical & Engineering News, October 15, 2010.](#)

[Optics & Photonics News, January 1, 2011](#)

Related to manuscript Mohs AM, et al. *IEEE Trans Biomed Eng.* 2015;62(5):1416–1424. PMID: 25585410.

[IEEE Trans Biomed Eng Cover](#) and [Feature](#) article.

[ScienceDaily, January 20, 2015.](#)

[Photonic Online, January 20, 2015.](#)

[WSJS Mohs Radio Interview.](#)

#### D) Abstracts and Preliminary Communications (Presenter underlined)

1. Qi B\*, Crawford AJ, Wojtynek NE, Ly QP, Hollingsworth MA, **Mohs AM**. Intraoperative Pancreatic Cancer Imaging using Hyaluronic Acid Conjugates Tuned for Minimized Background Signal. World Molecular Imaging Congress; Seattle, WA September 2018. *Podium Presentation*. \**Scholar Award by Women in Molecular Imaging Network*.
2. Qi B, Crawford AJ, Cohen SM, Ly QP, Hollingsworth HA, **Mohs AM**. Surgical imaging of pancreatic cancer using near infrared fluorescent hyaluronic acid nanomaterials. American Association for Cancer Research Annual Meeting; Chicago, IL, April 2018. *Poster*.
3. Svechkarev D, Kyrychenko A, Payne WM, **Mohs AM**. Self-assembly dynamics and inner morphology of hydrophobically modified hyaluronic acid nanoparticles: towards design of optimized drug nanocarriers. 255th ACS National Meeting and Expo; New Orleans, LA, March 2018. *Podium Presentation*.
4. Svechkarev D, **Mohs AM**. Tunable Fluorescent Organic Nanoparticles for Cancer Imaging Applications. NCI Innovative Molecular Analysis Technologies PI Meeting; Rockville, MD, December 2017. *Poster*.
5. Qi B, Hill TK, Crawford AJ, Wojtynek NE, Hollingsworth MA, **Mohs AM**. Tumor enhancement for fluorescent surgical navigation by near infrared hyaluronic acid conjugates. NanoDDS 2017, Ann Arbor, MI, September 2017. *Poster*.
6. Soucheck JJ, Davis AL, Hill TK, Qi B, Holmes MB, Wojtynek NE, Payne SM, Dutta S, Datta K, LaGrange CA, Singh PK, Kridel SJ, **Mohs AM**. Hyaluronic acid-based nanoparticles for drug delivery

- and imaging of taxane-resistant prostate cancer. NanoDDS 2017, Ann Arbor, MI, September 2017. *Poster*.
7. Qi B, Crawford AJ, Holmes MB, Wojtynek NE, Soucek JJ, Almeida-Porada G, Hollingsworth MA, **Mohs AM**. Indocyanine green loaded hyaluronan-derived nanoparticles for fluorescence-enhanced surgical imaging of an orthotopic pancreatic cancer model. World Molecular Imaging Congress; Philadelphia, PA, September 2017. *Podium Presentation*.
  8. Wojtynek NE, Payne WM, Svechkarev D, Holmes MB, Sajja BA, **Mohs AM**. Multimodal imaging nanoparticle based on hyaluronic acid for integrated preoperative and intraoperative cancer imaging. World Molecular Imaging Congress; Philadelphia, PA, September 2017. *Poster*.
  9. Soucek JJ, Wojtynek NE, Holmes MB, Dutta S, Qi B, Datta K, LaGrange CA, **Mohs AM**. Surgical navigation in a prostate tumor xenograft model by tuning the structural properties of near infrared fluorescent hyaluronan-derived nanoparticles. World Molecular Imaging Congress; Philadelphia, PA, September 2017. *Poster*.
  10. Svechkarev D, Payne WM, **Mohs AM**. Colloidal stability and spectral properties of carbazole-based fluorescent nanoaggregates. 17<sup>th</sup> IEEE International Conference on Nanotechnology; Pittsburgh, PA, July 2017. *Poster*.
  11. Payne WM, Svechkarev D, Kyrychenko A, **Mohs AM**. Computational models of polymeric nanoparticles for rational design in drug delivery. Gordon Research Conference on Cancer Nanomedicine; Mount Snow, VT, June 2017. *Poster*. **\*Selected for Podium Presentation**.
  12. Soucek JJ, Davis AL, Hill TK, Holmes MB, Qi B, Singh PK, Kridel SJ, **Mohs AM**. Quantification and mechanism of synergy between orlistat-loaded nanoparticles and taxanes in taxane-resistant prostate cancer cells. 49<sup>th</sup> Annual Pharmaceutics Graduate Student Research Meeting (PGSRM); Ann Arbor, MI, June 2017. *Podium* **\*Third Place Podium Presentation**.
  13. Bhattacharya DS, Svechkarev D, Soucek JJ, Hill TK, Taylor M, Natarajan A, **Mohs AM**. Tuning hyaluronic acid binding properties to CD44 using synthetic, in vitro and in silico approaches. 253rd American Chemical Society National Meeting and Exposition; San Francisco, CA, April 2017. *Poster*.
  14. Bhattacharya DS, Soucek JJ, Hill TK, Svechkarev D, Natarajan AM, **Mohs AM**. Altering hyaluronic acid binding properties to CD44 using synthetic, in vitro, and in silico approaches. 48th Annual Midwest Student Biomedical Research Forum; Omaha NE, March 2017. *Podium*.
  15. **Mohs AM**. Surgical guidance using hyaluronic acid derived contrast agents combined with an integrated widefield and spectroscopy imaging system. 2016 NCI Alliance for Nanotechnology in Cancer Principal Investigators Meeting; Bethesda, MD, November 2016. *Poster*.
  16. Payne WM, Svechkarev D, Boska MD, **Mohs AM**. Multimodal contrast agents for integrated preoperative and intraoperative imaging of cancer. American Chemical Society Midwest Regional Meeting, Special Section on Nanomedicine; Manhattan, KS, October 2016. *Oral Presentation*.
  17. Hill TK, Kelkar SS, Soucek JJ, Payne WM, Marini FC, **Mohs AM**. Near infrared hyaluronan-derived nanoparticles for fluorescence image-guided tumor surgery. Imaging in 2020; Jackson Hole, WY, September 2016. *Poster*.

18. Souчек JJ, Hill TK, Davis AL, Qi B, Holmes MB, Singh PK, Kridel SJ, **Mohs AM**. Combination treatment with Nano-Orlistat and taxanes is synergistic and enhances microtubule stability in taxane-resistant prostate cancer cells. 14th International Nanomedicine & Drug Delivery Symposium (NanoDDS); Baltimore, MD, September 2016. *Poster*. **\*Selected for "Rapid Fire Presentation" and awarded Society for Biomaterials-Drug Delivery Special Interest Group Research Award**
19. Payne WM, Svechkarev D, Boska MD, **Mohs AM**. Optimization of hyaluronic-acid based nanoparticles for magnetic resonance imaging. UNMC Biopharmaceutical Research Symposium; Omaha, NE, September 2016. *Poster*.
20. Bhattacharya DS, Souчек JJ, Hill TK, Svechkarev D, Natarajan AM, **Mohs AM**. Re-engineering Hyaluronic acid targetability using synthetic, in vitro and molecular modeling approaches. UNMC 3rd Biopharmaceutical Research Development Symposium; Omaha, NE, September 2016. *Poster*.
21. Souчек JJ, Hill TK, Davis AL, Qi B, Holmes MB, Singh PK, Kridel SJ, **Mohs AM**. Combination treatment with Nano-Orlistat and taxanes is synergistic and enhances microtubule stability in taxane-resistant prostate cancer cells. UNMC Biopharmaceutical Research & Development Symposium, September 2016, Omaha, NE. *Podium* **\*Excellence in Podium Presentation**.
22. Payne WM, Svechkarev DA, Boska MD, **Mohs AM**. Multimodal contrast agents for integrated preoperative and intraoperative cancer imaging. AACR Engineering and Physical Sciences in Oncology; Boston, MA, June 2016. *Poster*.
23. Souчек JJ, Hill TK, Davis L, Qi B, Singh PK, Kridel SJ, **Mohs AM**. Free and nanoparticle-formulated orlistat synergize with taxanes in taxane-resistant prostate cancer. 48<sup>th</sup> Annual Pharmaceutics Graduate Student Research Meeting; Kansas City, KS, June 2016. *Poster*.
24. Hill TK, Kelkar SS, Souчек JJ, Payne WM, Marini FC, **Mohs AM**. Hyaluronic acid nanoparticles for image-guided surgery improve contrast in two triple negative breast cancer models. 7th Annual Sino-U.S. Joint Research Forum; Omaha, NE, May 2016. *Poster*.
25. Souчек JJ, Hill TK, Davis AL, Qi B, Singh PK, Kridel SJ, **Mohs AM**. Nano-orlistat synergizes with taxanes in taxane-resistant prostate cancer cells. 7<sup>th</sup> Annual Sino-U.S. Joint Research Symposium, May 2016, UNMC, Omaha, NE. *Poster*. **\*First Place Poster**
26. Hill TK, Abdulahad A, Kelkar SS, Marini FC, Long TE, Provenzale JM, **Mohs AM**. Indocyanine green-loaded nanoparticles improve tumor contrast for image-guided surgery. NanoDDS; Seattle, WA, September 2015. *Poster*.
27. Hill TK, Davis AL, Wheeler FB, Kelkar SS, Freund EC, Lowther WT, Kridel SJ, **Mohs AM**. Nanoparticle formulation of orlistat improves drug stability and cytotoxicity against human cancer cell lines. NanoDDS; Seattle, WA, September 2015. *Poster*.
28. Payne WM, Kelkar S, Hall AR, **Mohs AM**. Detection of Liver Organoid Biomarkers by SERS-Immunolabeled Gold Nanoparticles. Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences Research Symposium; Blacksburg, VA, May 2015. *Oral Presentation* **\*Awarded 3<sup>rd</sup> place presentation**.
29. Kelkar SS, Hill TK, **Mohs AM**. Hyaluronic Acid Derived Fluorescent Imaging Agents with Tunable NIR Emission. Biomedical Engineering Society Annual Meeting; San Antonio, TX, October 2014. *Poster*.

30. Hill TK, Wheeler FB, Davis AL, Kelkar SS, Kridel SE, **Mohs AM**. Development of a Nanoparticle Formulation of Orlistat: Solubility, Stability, and Cytotoxicity. Biomedical Engineering Society Annual Meeting; San Antonio, TX, October 2014. *Poster*.
31. Kelkar SS, Hill TK, Gao X, **Mohs AM**. CD-44 Targeted Biodegradable Nanoparticles for Image-Guided Surgery. NanoDDS, 12th International Nanomedicine & Drug Delivery Symposium, Chapel Hill, NC, October 2014. *Poster*.
32. **Mohs AM**, Hill TK, Long TE, Marini FC, Levine EA. Targeted Near Infrared Fluorescent Nanoparticles for Image-Guided Tumor Surgery, Drug Carriers in Medicine and Biology Gordon Research Conference; Waterville Valley, NH, August 2014. *Poster*.
33. **Mohs AM**, Hill TK, Kelkar S, Marini FC, Levine EA. Hyaluronic acid derived fluorescent nanoparticles for image-guided tumor surgery, 41st Controlled Release Society Annual Meeting & Exposition; Chicago, IL, July 2014. *Poster*.
34. Hill TK, Kelkar S, Marini FC, Levine EA, Provenzale JM, **Mohs AM**. Synthesis, Characterization, and Pre-Clinical Evaluation of Hyaluronan Based Nanoparticles for Image-Guided Surgery. Duke University Fitzpatrick Institute for Photonics Annual Symposium, Durham, NC, March 2014. *Poster*.
35. **Mohs AM**, Raghavan S, Gilmont RR, Somara S, Marini FC, Bitar KN. Near infrared labeling and detection of enteric nerve cells: tracking differentiating neural progenitor cells and tissue innervation, Tissue Engineering and Regenerative Medicine International Society - Americas; Atlanta, GA, November 2013. *Poster*.
36. **Mohs AM**, Zarifpour M, Kelkar S, Kahlson MA, Marini FC, Christ GJ. Magnetic Resonance Imaging Characterization of Regenerating Bladder in a Murine Subtotal Cystectomy Model, Tissue Engineering and Regenerative Medicine International Society - Americas; Atlanta, GA, November 2013. *Poster*.
37. Rowe B, **Mohs AM**, Christ GJ, Harrison BS. Functional Recovery and Tissue Salvage in Ischemic Injury Using Non-Invasive MRI as a Tool to Quantify the Extent of Tissue Damage in a Rodent Ischemic Injury Model. North Carolina Tissue Engineering and Regenerative Medicine Society Annual Meeting; Winston-Salem, NC, October 2013. *Poster*.
38. Hill TK, Kelkar S, Marini FC, **Mohs AM**. Near Infrared Fluorescent Polysaccharide-Based Nanoparticles for Image-Guided Tumor Surgery. NCI Alliance for Nanotechnology in Cancer Annual Principal Investigators Meeting; Bethesda, MD, September 2013. *Podium Presentation*.
39. Hill TK, Marini FC, **Mohs AM**. Near infrared image-guided tumor removal: epidermal growth factor receptor as a target, Biomedical Engineering Society Annual Meeting; Atlanta, GA, October 2012. *Podium Presentation*.
40. **Mohs AM**, Wang Y, Mancini MC, Provenzale JM, Singhal S, Nie S. Intraoperative detection of fluorescent nanoparticles using a handheld spectroscopic pen device to guide tumor resection, AACR Special Conference on Nano in Cancer: Linking Chemistry, Biology, and Clinical Applications In Vivo; Miami, FL, January 2011. *Poster*.
41. **Mohs AM**, Singhal S, Nie S. Nanotechnology for minimally invasive cancer detection and resection, Kick-off Meeting - NCI Alliance for Nanotechnology in Cancer; Bethesda, MD, November 2010. *Poster*.

42. **Mohs AM**, Smith AM, Mancini MC, Provenzale JM, Nie S. The unusual chemistry and cellular toxicity of cadmium-free quantum dots, Fitzpatrick Institute for Photonics Annual Meeting; Duke University, Durham, NC, October 2010. *Poster*.
43. **Mohs AM**, Smith AM, Mancini MC, Wen MM, Nie S. Evaluating the Role of Chemical Composition and Colloidal Stability on Quantum Dot Cytotoxicity, NCI Alliance for Nanotechnology in Cancer Investigators Meeting; Chicago, IL, September 2008. *Poster*.
44. **Mohs AM**, Smith AM, Mancini MC, Nie S. Investigation into the toxicology of strain-tunable quantum dots, NCI Alliance for Nanotechnology in Cancer Investigators Meeting; Chapel Hill, NC, October 2007. *Poster*.
45. **Smith AM**, **Mohs AM**, Nie S. Strain-tunable, near infrared quantum dots for in vivo molecular imaging, Society for Molecular Imaging; Providence, RI, September 2007.
46. **Mohs AM**, Zong Y, Parker DL, Lu ZR. PEG-*g*-poly(GdDTPA-*co*-L-cystine): effect of PEG chain length on in vivo contrast enhancement in MRI. MR Angio Club - The 17th Annual International Conference on Magnetic Resonance Angiography; Beijing, China, September 2005. *Poster*.
47. **Mohs AM**, Zong Y, Feng Y, Guo J, Parker DL, Lu ZR. PEG-*g*-(GdDTPA-*co*-L-cystine): novel biodegradable macromolecular contrast agents for MRI, Controlled Release Society Annual Meeting, 32nd Annual Meeting & Exposition of the Controlled Release Society; Miami, FL, June 2005. *Poster*.
48. **Zong Y**, Guo J, Feng H, Sun Y, **Mohs AM**, Parker DL, Lu ZR. (Gd-DTPA)-cystine diethylester copolymers (GDCEP) as a biodegradable contrast agent for MR imaging, Controlled Release Society Symposium; Salt Lake City, UT, February 2005. *Poster*.
49. **Zong Y**, Wang X, **Mohs AM**, Goodrich KC, Lu ZR. MR imaging of a biodegradable polymeric contrast agent, cystine-DTPA-Gd complex. Controlled Release Society; Honolulu, HI, June 2004. *Poster*.
50. **Mohs AM**, Wang X, Zong Y, Goodrich KC, Parker DL, Lu ZR. Gd(III)DTPA-L-cystine-PEG copolymers: a biodegradable macromolecular agent for blood pool MR imaging, International Society of Magnetic Resonance in Medicine - 12th Scientific Meeting and Exposition; Kyoto, Japan, May 2004. *Poster*.
51. **Zong Y**, **Mohs AM**, Goodrich KC, Wang X, Parker DL, Lu ZR. Synthesis of Gd(III) DTPA-cystine a Gd(III) DTPA-cystine ethyl ester copolymers for MRI, Imaging in 2020; Jackson Hole, WY, September 2003. *Poster*.
52. **Tekavek TN**, Brueske CJ, **Mohs AM**, Westman AL, Schaller CP. Synthesis of molybdenum complexes of DACO' and pzpy'. 223rd ACS National Meeting; Orlando, FL, April 2002. *Poster*.

#### E) Published Continuing Education Materials

None.

## TEACHING ACTIVITIES

### A. Didactic Coursework

#### University of Nebraska Medical Center (Sept. 2015 – April 2018)

Course (Role):                      Pharmaceutical Sciences I, PHSC 570 (Instructor)

Duties: Prepared and presented lectures related to micromeritics and oral delivery formulations

Lectures Given: 14

**Course (Role): Pharmaceutical Sciences II, PHSC 670 (Instructor)**

Duties: Prepared and presented lectures related to zero and first-order rate equations, compartment modeling, and physiologically-based pharmacokinetics.

Lectures Given: 30

**Course (Role): Pharmaceutical Sciences III, PHSC 672 (Instructor & Coordinator (2018))**

Duties: Prepared and presented lectures related to the concepts and modeling of pharmacokinetic-pharmacodynamic relationships, modified release pharmacokinetics, nonlinear pharmacokinetics, drug-drug interaction pharmacokinetic.

Lectures Given: 20

**Course (Role): Pharmaceutical Science Applications in Pharmacy, PHSC 691 (Instructor)**

Duties: Prepared and gave lecture on nanotechnology for image-guided surgery

Lectures Given: 4

**Course (Role): PK and Biopharmaceutics, PHSC 910 (Instructor, Coordinator)**

Duties: Coordinate lectures, exams, project, lecture on compartment and non-compartment PK models and PK-toxicity relationships

Lectures Given: 5

**Course (Role): Pharmaceuticals Sciences Graduate Program Seminar, PHSC 970 (Co-Coordinator)**

Duties: Scheduled seminars and organized the itinerary of invited speakers; maintained student attendance

Non-lecture hours: 80

**Wake Forest University Health Sciences (Sept. 2011 – March 2015)**

**Course (Role): Quantitate Organ Systems Physiology, BMES 606 (Course Director, Instructor)**

Duties: Arranged schedules to integrate mathematical modeling, simulation, quantitative description of organ physiology and control, and supervise semester project.

Lectures Given: 27

Non-lecture hours: 90

**Course (Role): Medical Imaging II, BMES 751 (Instructor)**

Duties: Prepared and gave lectures on the chemistry of contrast agents and principles of contrast enhanced magnetic resonance imaging and computed tomography.

Lectures Given: 4

**Course (Role): Drug Discovery, Design and Development, CHM 740 (Instructor)**

Duties:	Prepared and gave lectures to introduce pharmaceutical sciences to chemistry undergraduate and graduate students, including adsorption, distribution, metabolism, excretion, and controlled release.
Lectures Given:	4
<b>Course (Role):</b>	<b>Introduction to Regenerative Medicine, BMES 631 (Instructor)</b>
Duties:	Prepared and gave lecture on drug delivery in tissue engineering and regenerative medicine.
Lectures Given:	1
<b>Course (Role):</b>	<b>Engineering Approaches to Treating Cancer, BMES 5984 (Instructor)</b>
Duties:	Prepared and gave a lecture on using nanotechnology for detecting, diagnosing, and treating cancer
Lectures Given:	1
<b>Course (Role):</b>	<b>Topics in Cancer Biology, MCB 723 (Instructor)</b>
Duties:	Prepared and gave lecture on cancer imaging.
Lectures Given:	1

#### B. Teaching Related to Undergraduate/Graduate/Postdoctoral Researchers

<b>Student:</b>	<b>William Payne – Graduate Student</b> <i>2018-2020 PhRMA Foundation Graduate Research Fellowship</i> <i>2018 DAAD German Studies Research Grant</i> <i>2017-2018 Blue Waters Graduate Fellowship (6 awarded nationally)</i> <i>2017 UNMC graduate student of distinction</i>
Program:	Pharmaceutical Sciences (UNMC); MS Biomedical Engineering (WFUHS)
<b>Student:</b>	<b>Deep S. Bhattacharya – Graduate Student</b> <i>2017-2019 Program of Excellence Assistantship Recipient</i> <i>2019 GlaxoSmithKline Co-op Internship (Rockville, MD)</i>
Program:	Pharmaceutical Sciences (UNMC)
<b>Student:</b>	<b>Bowen Qi – Graduate Student</b> <i>2016-2019 Chinese Scholarship Counsel Fellowship</i> <i>2018-2020 UNMC Graduate Studies Assistantship Recipient</i>
Program:	Pharmaceutical Sciences (UNMC)
<b>Student:</b>	<b>Nicholas Wojtynek – Graduate Student</b> <i>2018-2020 John Borrlson Memorial Scholarship and a Dean for Graduate Studies Stipend Recipient</i>
Program:	Cancer Research (UNMC)
<b>Student:</b>	<b>Madeline Olsen – Graduate Student</b> <i>2018-current Cancer Biology Training Grant; Eppley Institute Cancer Biology Training Grant from the National Cancer Institute (T32CA009476)</i>
Program:	Cancer Research (UNMC)
<b>Student:</b>	<b>Paul Lovell – Graduate Student</b>



Program: Pharmaceutical Sciences (UNMC)

**Student:** **Aishwarya Bapat – Graduate Student**  
Program: Pharmaceutical Sciences (UNMC)

**Student:** **Tanner Hill – Graduate Student, Postdoctoral Fellow**  
*2014-2015 Mike and Lucy Robbins Fellowship Award (Wake Forest) for academic, research, and leadership excellence*  
Program: Biomedical Engineering (WFUHS as graduate student); Pharmaceutical Sciences (UNMC as postdoctoral fellow)

**Student:** **Denis Svechkarev, PhD – Research Instructor**  
Program: Pharmaceutical Sciences (UNMC)

**Student:** **Joshua Soucek, PhD – Postdoctoral Fellow**  
Program: Pharmaceutical Sciences (UNMC)

**Student:** **Joe Gerald Jesu Raj, PhD – Postdoctoral Fellow**  
Program: Pharmaceutical Sciences (UNMC)

**Student:** **Sneha Kelkar, PhD – Postdoctoral Fellow**  
Program: Biomedical Engineering (WFU)

**Student:** **Noah Reed – Undergraduate Student**  
Program: UNMC Summer Undergraduate Research Program (attends University of Nebraska at Lincoln)

**Student:** **Lucas Hauser – Undergraduate Student**  
Program: UNO/UNMC Undergraduate Research Opportunities

**Student:** **Chaojun Wang – Undergraduate Student**  
Program: Asia Pacific Rim Development Program (attended Xi'an Jiaotong University Health Science Center, China)

**Student:** **Erica Freund – Undergraduate Student**  
Program: Physics Honors Thesis Advisor (attended Wake Forest University)

**Student:** **Gillian Lloyd – Undergraduate Student**  
Program: Undergraduate Trainee (attended Wake Forest University, Major: Biology)

**Student:** **Joshua Copus – Undergraduate Student**  
Program: Wake Forest Institute for Regenerative Medicine Summer Scholar (attended Clemson University, Major: Biomedical Engineering)

**Student:** **Xiangxi Gao – Undergraduate Student**  
Program: Wake Forest – Virginia Tech Biomedical Engineering Summer Scholar (attended Emory University, Major: Math, Biology)

**Student:** **Kindell Schmitt – Undergraduate Student**

Program: Wake Forest – Virginia Tech Biomedical Engineering Summer Scholar (attended Virginia Tech, Major: Biological Systems Engineering)

**Student: Martha Kahlson – Undergraduate Student**

Program: Wake Forest Institute for Regenerative Medicine Summer Scholar (attended Mount Holyoke College, Major: Biochemistry)

**Student: Robert Johnson, II – Undergraduate Student**

Program: NHLBI Excellence in Cardiovascular Sciences Program (attended Johnson C. Smith University, Major: Biology)

**Student: Florence McCarty – Undergraduate Student**

Program: NHLBI Excellence in Cardiovascular Sciences Program (attended Johnson C. Smith University, Major: Biology)