

Erik C. Dreaden

Coulter Department of Biomedical Engineering
Georgia Institute of Technology and Emory University
Aflac Cancer and Blood Disorders Center
Children's Healthcare of Atlanta and Emory School of Medicine

Email: e.dreaden@gatech.edu
e.dreaden@emory.edu
HSRB E108
Office: 404.778.3033

**updated 24 Sept, 2017*

EDUCATION

Massachusetts Institute of Technology , Cambridge, MA Ruth L. Kirschstein Postdoctoral Fellow, Koch Institute for Integrative Cancer Research	2012 –
Georgia Institute of Technology , Atlanta, GA Ph.D., Chemistry and Biochemistry Dissertation: "Chemistry, Photophysics, and Biomedical Applications of Gold Nanotechnologies"	2006 – 2012
University of Georgia , Athens, GA BS, Chemistry	2002 – 2006

PROFESSIONAL APPOINTMENTS

Emory University, Georgia Institute of Technology, Children's Healthcare of Atlanta Assistant Professor (IT), Departments of Biomedical Engineering and Pediatrics	2017 –
Massachusetts Institute of Technology , Koch Institute for Integrative Cancer Research, Cambridge, MA NIH-Kirschstein Postdoctoral Fellow, Department of Chemical Engineering	2012 – 2017
Georgia Institute of Technology , Department of Chemistry and Biochemistry, Atlanta, GA Graduate Research Fellow	2006 – 2012
University of Georgia , Department of Chemistry, Athens, GA Undergraduate Research Associate	2004 – 2006

AWARDS

Koch Institute IMAGE Award, Massachusetts Institute of Technology	2014 – 2015, 2017 – 2018
NIH Ruth L Kirschstein Postdoctoral Fellowship (F32)	2013 – 2015
Graduate Student Award, 60th Meeting of Nobel Laureates; Lindau, Germany	2010
Predocorral Fellowship, Center for Drug Design, Development, and Delivery (CD4)	2010 – 2011
Anthony Shuker Research Award, Georgia Research Alliance	2010
Robert Bosch Foundation Fellowship	2010
GAANN Predocorral Fellowship	2006 – 2008
William H. Emerson Fellowship	2006 – 2007

TEACHING EXPERIENCE

Teaching Assistant , Georgia Institute of Technology, Atlanta, GA	
• General Chemistry Lecture	2006
• General Chemistry Laboratory	2006
• Organic Synthesis Laboratory	2007

PUBLICATIONS

Published / In Press:

**co-first author*

36. Saei, A.A.; Yazdani, M.; Lohse, S.E.; Bakhtiary, Z.; Serpooshan, V.; Ghavami, M.; Asadian, M.; Mashaghi, S.; Dreaden, E.C.; Mashaghi, A.; Mahmoudi, M., Nanoparticle Surface Functionality Dictates Cellular and Systemic Toxicity, *Chemistry of Materials*, **2017**, 29 (16), 6578-6595.
35. Behzadi, S.; Serpooshan, V.; Tao, W.; Hamaly, M.A.; Alkawareek, M.Y.; Dreaden, E.C.; Brown, D.; Alkilany, A.M.; Farokhzad, O.C.; Mahmoudi, M., Cellular uptake of nanoparticles: journey inside the cell, *Chemical Society Reviews*, **2017**, *in press*.
34. Correa, S.* Dreaden, E.C..* Gu, L.; Hammond, P.T., Engineering Nanolayered Particles for Modular Drug Delivery, *Journal of Controlled Release*, **2016**, 240, 364–386.
33. Min, J.; Choi, K.Y.; Dreaden, E.C.; Padera, R.F.; Braatz, R.D.; Spector, M.; Hammond, P.T., Designer Dual Therapy Nanolayered Implant Coatings Eradicate Biofilms and Accelerate Bone Tissue Repair, *ACS Nano*, **2016**, 10(4), 4441–4450.

32. Shopsowitz, K.E.; Wu, C.; Liu, G.; [Dreaden, E.C.](#); Hammond, P.T., Periodic-shRNA Molecules are Capable of Gene Silencing, Cytotoxicity and Innate Immune Activation in Cancer Cells, *Nucleic Acid Research*, **2016**, 44 (2), 545-557. PMID: PMC4737167
31. Kong, Y.W.*; [Dreaden, E.C.](#)*; Hammond, P.T.; Yaffe, M.B., Exploiting Nanocarriers for Combination Cancer Therapy. In *Intracellular Delivery III*; 1st Ed. Prokop, A.; Weissig, V., Eds.; Springer International: Switzerland, **2016**. ISBN: 978-3-319-43525-1.
30. Roh, Y.H.; Deng, J.Z.; [Dreaden, E.C.](#); Park, J.H.; Yun, D.S.; Shopsowitz, K.E.; Hammond, P.T., A Multi-RNAi Microsponge Platform for Simultaneous Controlled Delivery of Multiple Small Interfering RNAs, *Angewandte Chemie International Edition*, **2016**, 55, 3347–3351. PMID: PMC4768639
29. Correa, S.; Choi, K.Y.; [Dreaden, E.C.](#); Renggli, K.; Shi, A.; Gu, L.; Shopsowitz, K.E.; Quadir, M.; Ben-Akiva, E.; Hammond, P.T., Highly scalable, closed-loop synthesis of drug-loaded, layer-by-layer nanoparticles, *Advanced Functional Materials*, **2016**, 26, 991–1003. PMID: PMC4847955
28. [Dreaden, E.C.](#); Kong, Y.W.; Morton, S.W.; Correa, S.; Choi, K.Y.; Shopsowitz, K.E.; Renggli, K.; Drapkin, R.; Yaffe, M.B.; Hammond, P.T., Tumor-Targeted Synergistic Blockade of MAPK and PI3K from a Layer-by-Layer Nanoparticle, *Clinical Cancer Research*, **2015**, 21(19), 4410-4419. PMID: PMC4624301
27. Choi, J.H.; Kim, S.-O.; Linardy, E.; [Dreaden, E.C.](#); Zhdanov, V.P.; Hammond, P.T.; Cho, N.-J., Influence of pH and Surface Chemistry on Poly-L-Lysine Adsorption onto Solid Supports Investigated by Quartz Crystal Microbalance with Dissipation Monitoring, *Journal of Physical Chemistry B*, **2015**, 119(33), 10554–10565.
26. Choi, J.H.; Kim, S.-O.; Linardy, E.; [Dreaden, E.C.](#); Zhdanov, V.P.; Hammond, P.T.; Cho, N.-J., Adsorption of Hyaluronic Acid on Solid Supports: Role of pH and Surface Chemistry in Thin Film Self-Assembly, **2015**, *Journal of Colloid & Interface Science*, **2015**, 448, 197-207.
25. [Dreaden, E.C.](#), Morton, S.W.; Shopsowitz, K.E., Choi, J.H.; Deng, Z.J.; Cho, N.-J.; Hammond, P.T., Bimodal Tumor-Targeting From Microenvironment Responsive Hyaluronan Layer-by-Layer (LbL) Nanoparticles. *ACS Nano*, **2014**, 8 (8), 8374-8382. PMID: PMC4148172
24. Sowers, M.A.; McCombs, J.R.; Wang, Y.; Paletta, J.T.; Morton, S.W.; [Dreaden, E.C.](#); Boska, M.; Ottaviani, F.; Hammond, P.T.; Rajca, A.; Jeremiah, J.A., Redox responsive branched-bottlebrush polymers for in vivo MRI and fluorescence imaging. *Nature Communications*, **2014**, 5, 5460. PMID: PMC4269368
23. Roh, Y.H.; Lee, J.B.; Shopsowitz, K.E.; [Dreaden, E.C.](#); Morton, S.W.; Poon, Z.; Hong, J.; Yamin, I.; Bonner, D.K.; Hammond, P.T., Layer-by-Layer Assembled Anti-Sense DNA Microsponge Particles for Efficient Delivery of Cancer Therapeutics. *ACS Nano*, **2014**, 8(10), 9767-9780. PMID: PMC4148172
22. Shah, N.J.; Hsu, B.B.; [Dreaden, E.C.](#); Hammond, P.T., Engineering Layer-by-Layer Thin Films for Multiscale and Multidrug Delivery Applications. In *Layer-by-Layer Films for Biomedical Applications*; 1st Ed. Picart, C.; Caruso, F., Voegel, J.-C., Eds.; Wiley-VCH: Weinheim, **2014**. ISBN: 978-3-527-33589-3.
21. [Dreaden, E.C.](#); El-Sayed, I.H.; El-Sayed, M.A. Structure-Activity Relationships For Tumor-Targeting Gold nanoparticles. In *Frontiers of Nanobiomedical Research*; 1st Ed. Torchilin, V.P., Ed.; World Scientific: Hackensack, NJ, **2014**. ISBN: 978-981-4520-64-5.
20. Morton, S.W.; Lee, M.J.; Deng, Z.J.; [Dreaden, E.C.](#); Siouve, E.; Shopsowitz, K.E.; Shah, N.J.; Yaffe, M.B., Hammond, P.T. A Nanoparticle-Based Combination Chemotherapy Delivery System for Enhanced Tumor Killing by Dynamic Rewiring of Signaling Pathways. *Science Signaling*, **2014**, 7 (325), ra44. PMID: PMC4138219
19. Austin, L.A.; Mackey, M.A.; [Dreaden, E.C.](#); El-Sayed, M.A.; The optical, photothermal, and facile surface chemical properties of gold and silver nanoparticles in bionanomedicine, therapy, and drug delivery. *Archives in Toxicology*, **2014**, 88 (7), 1391-417. PMID: PMC4136654
18. Liao, L.; Liu, J.; [Dreaden, E.C.](#); Morton, S.; Shopsowitz, K.E.; Hammond, P.T.; Johnson, J.A., A convergent synthetic platform for single-nanoparticle triplex combination cancer therapy: ratiometric loading and release of cisplatin, doxorubicin, and camptothecin. *Journal of the American Chemical Society*, **2014**, 136 (16), 5896–5899. PMID: PMC4105175
17. [Dreaden, E.C.](#); Raji, I.O.; Austin, L.A.; Fathi, S.; Mwakwari, S.C.; Humphries IV, W.H.; Kang, B.; Oyelere, A.K.; El-Sayed, M.A. P-glycoprotein-Dependent Trafficking of Nanoparticle-Drug Conjugates. *Small*, **2014**, 10 (9), 1719–1723. PMID: PMC4136971
16. Deng, Z.J.; Morton, S.W.; Ben-Akiva, E.; [Dreaden, E.C.](#); Shopsowitz, K.E.; Hammond, P.T., Layer-by-Layer Nanoparticles for Systemic Codelivery of an Anticancer Drug and siRNA for Potential Triple-Negative Breast Cancer Treatment. *ACS Nano*, **2013**, 7 (11), 9571–9584. PMID: PMC3870477
15. [Dreaden, E.C.](#); Gryder, B.G.; Austin, L.A.; Tene Defo, B.A.; Hayden, S.C.; Pi, M.; Quarles, L.D.; Oyelere, A.K.; El-Sayed, M.A., Antiandrogen Gold Nanoparticles Dual-Target and Overcome Treatment Resistance in Hormone-Insensitive Prostate Cancer Cells. *Bioconjugate Chemistry*, **2012**, 23 (8), 1507-1512. PMID: PMC3434689
14. [Dreaden, E.C.](#); Mwakwari, S.C.; Austin, L.A.; Kieffer, M.J.; Oyelere, A.K.; El-Sayed, M.A. Small Molecule-Gold Nanorod Conjugates Selectively Target and Induce Macrophage Cytotoxicity Towards Breast Cancer Cells. *Small*, **2012**, 8 (18), 2819-2822. PMID: PMC3459581

13. Dreaden, E.C.; El-Sayed, M.A.; Detecting and Destroying Cancer Cells in More than One Way with Noble Metals and Different Confinement Properties on the Nanoscale. *Accounts of Chemical Research*, **2012**, 45 (11), 1854–1865.
12. Dreaden, E.C.; Austin, L.A.; Mackey, M.A.; El-Sayed, M.A.; Size Matters: Gold Nanoparticles in Targeted Cancer Drug Delivery. *Therapeutic Delivery*, **2012**, 3, 457-478. PMID: PMC3596176
11. Dreaden, E.C.; Alkilany, A.; Huang, X.; Murphy, C.J.; El-Sayed, M.A. The Golden Age: Gold Nanoparticles for Biomedicine. *Chemical Society Reviews*, **2012**, 41, 2740-2779.
10. Dreaden, E.C.; Near, R.D.; Abdallah, T.; Talaat, M.H.; El-Sayed, M.A., Multimodal Plasmon Coupling in Low Symmetry Gold Nanoparticle Pairs Detected in Surface-Enhanced Raman Scattering (SERS). *Applied Physics Letters*, **2011**, 98, 183115.
9. Dreaden, E.C.; El-Sayed, M.A.; El-Sayed, I.H., Nanotechnology and Nanostructures Applied in Head and Neck Cancer. In *Nanomedicine and Cancer*, 1st Ed. Preedy, V.R., Srirajaskanthan, R., Eds.; Nanoscience Applied to Health and Medicine Series; Science Publishers: Enfield, NH, **2011**, 373-395; ISBN 978-1-57808-727-3.
8. Yen, C.-W.; Hayden, S.C.; Dreaden, E.C.; Szymanski, P.; El-Sayed, M.A., Tailoring Plasmonic and Electrostatic Field Effects to Maximize Solar Energy Conversion by Bacteriorhodopsin, the Other Natural Photosynthetic System. *Nano Letters*, **2011**, 11 (9), 3821–3826.
7. Dreaden, E.C.; Mackey, M.A.; Huang, X.; Kang, B.; El-Sayed, M.A., Beating Cancer in Multiple Ways Using Nanogold. *Chemical Society Reviews*, **2011**, 40 (7), 3391–3404.
6. Dreaden, E.C.; Neretina, S.; Qian, W.; Hughes, R.A.; Preston, J.S.; Mascher, P.; El-Sayed, M.A., Plasmonic Enhancement of Nonradiative Charge Carrier Relaxation and Proposed Effects from Enhanced Radiative Electronic Processes in Semiconductor-Gold Core-Shell Nanorod Arrays. *Journal of Physical Chemistry C*, **2011**, 115, 5578–5583.
5. Dreaden, E.C.; Mwakwari, S. C.; Sodji, Q. H.; Oyelere, A. K.; El-Sayed, M. A., Tamoxifen-Poly(ethylene glycol)-Thiol Gold Nanoparticle Conjugates: Enhanced Potency and Selective Delivery for Breast Cancer Treatment. *Bioconjugate Chemistry*, **2009**, 20, 2247–2253. PMID: PMC2839930
4. Neretina, S.; Dreaden, E.C.; Qian, W.; Hughes, R.A.; Preston, J.S.; Mascher, P.; El-Sayed, M.A., The Dependence of the Plasmon Field Induced Nonradiative Electronic Relaxation Mechanisms on the Gold Shell Thickness in Vertically Aligned CdTe–Au Core–Shell Nanorods. *Nano Letters*, **2009**, 9 (11), 3772–3779.
3. Neretina, S.; Qian, W.; Dreaden, E.C.; El-Sayed, M. A.; Hughes, R. A.; Preston, J. S.; Mascher, P., Exciton Lifetime Tuning by Changing the Plasmon Field Orientation with Respect to the Exciton Transition Moment Direction: CdTe-Au Core-Shell Nanorods. *Nano Letters*, **2009**, 9 (3), 1242-1248.
2. Dickerson, E. B.;* Dreaden, E.C.;* Huang, X.; El-Sayed, I. H.; Chu, H.; Pushpanketh, S.; McDonald, J. F.; El-Sayed, M. A., Gold nanorod assisted near-infrared plasmonic photothermal therapy (PPTT) of squamous cell carcinoma in mice. *Cancer Letters*, **2008**, 269 (1), 57-66. PMID: PMC3413727
1. Neretina, S.; Qian, W.; Dreaden, E.C.; El-Sayed, M. A.; Hughes, R. A.; Preston, J. S.; Mascher, P., Plasmon field effects on the nonradiative relaxation of hot electrons in an electronically quantized system: CdTe-Au core-shell nanowires. *Nano Letters*, **2008**, 8 (8), 2410-2418.

MANUSCRIPTS IN PREPARATION

Dreaden, E.C.;* Kong, Y.W.*; Quadir, M.A.; Correa, S.; Suárez-López, L.; Barberio, A.E.; Hwang, M.K.; Shi, A.C.; Olberton, B.J.; Gallagher, P.N.; Shopsowitz, K.E.; Elias, K.M.; Yaffe, M.B.; Hammond, P.T., Drugging DNA Damage Pathways in High-Grade Serous Ovarian Tumors via RNA-Peptide Nanoplexes, *in preparation*.

Kong, Y.W.*; Dreaden, E.C.;* Morandell, S.; Dhara, S.; Quadir, M.A.; Dinh, A.; Shopsowitz, K.E.; Varmeh, S.; Hammond, P.T.; Yaffe, M.B., Co-targeting of cell cycle checkpoints and DNA repair using RNAi nanoparticles augments the efficacy of platinum-based chemotherapy in murine NSCLC in vivo, *submitted to Science Translational Medicine*.

Dreaden, E.C.; Morton, S.W.; D'Arcy, J.M.; Shopsowitz, K.E.; Echevarria, S.C.; Deng, Z.J.; Quadir, M.; Hammond, P.T., Physiochemical Determinants of Tissue Disposition for Tumor-Targeting Nanoparticles, *in preparation*.

Aitken, B.A.; D'Arcy, J.M.; Dreaden, E.C.; Hammond, P.T., Rapid Fabrication of Large-Area Colloidal Crystals, *in preparation*.

Aitken, B.A.; D'Arcy, J.M.; Dreaden, E.C.; Hammond, P.T., Electrochemically Mechanomutable Carbon Nanotube Hydrogels, *in preparation*.

PATENTS

Dreaden, E.C.; Hammond, P.T.; 2014 April. Nanotechnologies for Tumor-Targeted Horizontal Blockade of MAPK and PI3K. Pending.

Dreaden, E.C.; Hammond, P.T.; 2014 April. Multimodal Tumor-Targeting Polyelectrolyte Drug Carriers. Pending.

Dreaden, E.C.; Oyelere, A.K.; Gryder, B.; El-Sayed, M.A.; 2012 June. Nanotechnologies for Targeting and Immunomodulation of Breast and Brain Tumor-Associated Macrophages. 61/655,733 pending.

Dreaden, E.C.; Oyelere, A.K.; Gryder, B.; El-Sayed, M.A.; 2012 May. Endocrine Targeted Nanotechnologies for Breast, Prostate, Ovarian, and other Hormone-Associated Cancers. 61/652,576 pending.

Oyelere, A.K.; El-Sayed, M.A.; Dreaden, E.C.; 2010 Sept. 24, Targeted Cellular Delivery of Nanoparticles. United States patent 12/890,519 pending.

MENTORING

High School Research Mentor, Massachusetts Institute of Technology, P. Gallagher	2015
MIT-K12 Project Team Mentor, Massachusetts Institute of Technology	2012 –
Youth Mentor, Big Brothers Big Sisters of Metro Atlanta; Atlanta, GA	2008 – 2012
Graduate Mentor, Georgia Institute of Technology, D. Snare, S. Hayden, P. Bagchi, C. Ruschman, S. Lee	2007 – 2012
Undergraduate Research Mentor, Georgia Institute of Technology, L. Romero	2011 – 2011
Undergraduate Research Mentor, NNIN-REU, F. O'Connell	2010 – 2010
Undergraduate Research Mentor, Georgia Institute of Technology, M. Kieffer	2009 – 2010
Undergraduate Research Mentor, Georgia Institute of Technology, L. Tankesley	2008 – 2008
Undergraduate Research Mentor, Georgia Institute of Technology, N. Bloodworth	2008 – 2009
Undergraduate Research Mentor, NSF-REU, O. Dellanoy-Bruno	2008 – 2008
Youth Mentor, Big Brothers Big Sisters of Metro Atlanta; Stockbridge, GA	2000 – 2002

LEADERSHIP

Committees and Appointments:

Chair, ACS 2015 Symposia: 'Biological and Biomedical Polymers'	2015
Departmental Review (Visiting) Committee, MIT Corporation	2015 – 2016
Co-Chair, BMES 2013 Symposia: 'Nanotechnologies for Cancer Detection and Treatment'	2013
Chemistry in Cancer Research (CICR) Working Group (AACR)	2013 –
MIT Presidential Advisory Committee, Toxic Chemicals	2012 – 2013

Journal Peer Review:

Nature Medicine (NPG)	Langmuir (ACS)
Bioconjugate Chemistry (ACS)	Nanomedicine (Future Science)
Nature Communications (NPG)	Dalton Transactions (RSC)
Cancer Research (AACR)	Journal of Applied Physics (AIP)
ACS Nano (ACS)	Chemical Communications (RSC)
Chemical Society Reviews (RSC)	Colloids and Surfaces (Elsevier)
Nano Today (Elsevier)	Materials Horizons (RSC)
Small (Wiley)	Therapeutic Delivery (Future Science)
Acta Biomaterialia (Elsevier)	Medicinal Chemical Communications (RSC)
Applied Physics Letters (AIP)	Journal of Nanomaterials (Hindawi)
IEEE Selected Topics in Quantum Electronics (IEEE)	Analyst (RSC)
Biomacromolecules (ACS)	Journal of Physical Chemistry B/C (ACS)
Journal of Materials Chemistry A/B/C (RSC)	RSC Advances (RSC)
New Journal of Chemistry (RSC)	Chemical Research in Toxicology (ACS)
AIP Advances (AIP)	Metalomics (RSC)
Eur. J. Pharm. Biopharm. (Elsevier)	Nanoscale (RSC)

OUTREACH

"Light-Activated Therapy Kills Cancer Cells" <i>Cancer Discovery</i> (Sept 2015, AACR)	2015
"Tiny Technologies" <i>NBC Learn</i> (NBC Universal)	2015
"Bridging the Gap: Science With/IN/Sight" (MIT, Dana-Farber, MGH)	2014
"Cell Picture Show" <i>Cell</i> (Cell Press)	2014
"The Art of Science" MIT Technology Review	2014
"Fighting Cancer" WCVB Chronicle (ABC)	2012
Consultant, MIT+Kahn Academy Educational Outreach	2012 –
Cambridge Science Festival Volunteer	2012 –
STEM Youth Outreach Program, National Nanotechnology Infrastructure Network (NNIN)	2007 – 2012
Georgia Tech Future Faculty Jobs Group	2009 – 2010
US Representative, Euroscience Forum; Torino, Italy	2010
US Representative, NSF US-Egypt Advanced Studies Institute (ASI) Workshop, Cairo, Egypt	2010 – 2010

PROFESSIONAL MEMBERSHIPS

American Institute of Chemical Engineers (AIChE)	2014 –
--	--------

• Pharmaceutical and Bioengineering Division	• Materials Engineering and Sciences Division	2013 –
American Association of Cancer Research (AACR)		
• Chemistry in Cancer Research (CICR) Division	• Cancer Immunology (CIMM) Division	
Materials Research Society (MRS)		2013 –
Biomedical Engineering Society (BMES)		2013 –
American Association for the Advancement of Science (AAAS)		2011 –
American Chemical Society (ACS)		2006 –
• Nanoscience Division	• Medicinal Chemistry Division	
• Physical Chemistry Division	• Inorganic Chemistry Division	

PRESENTATIONS

38. Dreaden, E.C.; Drugging DNA Damage Response in Advanced Solid Tumors via Peptide-Mediated RNA Interference. Invited Seminar, **Georgia Institute of Technology and Emory University**. 2017 Sept 15, Atlanta, GA.
37. Dreaden, E.C.; Molecular and Nanoscale Tools for Rational Combination and Immune Modulatory Cancer Therapy. Invited Seminar, **Aflac Center for Cancer and Blood Disorders, Children's Healthcare of Atlanta**. 2017 Sept 5, Atlanta, GA.
36. Dreaden, E.C.; Chemically Tailoring Rational Combination Therapies against Metastatic Tumors. Invited Seminar, **University of Michigan Medical School**. 2017 Feb 16, Ann Arbor, MI.
35. Dreaden, E.C.; Polymer and Peptide Nanotechnologies for Rational Combination Therapy of Tumors Metastases. Invited Seminar, **University of Illinois at Urbana-Champaign**, Department of Chemistry. 2017 Feb 7, Champaign, IL.
34. Dreaden, E.C.; Engineering Peptide and Polymer Nanotechnologies for Rational Combination Therapy of Tumors Metastases. Invited Seminar, **Washington University in St. Louis**, Department of Biomedical Engineering. 2017 Jan 31, St. Louis, MO.
33. Dreaden, E.C.; A Tale of Two Particles: Engineering Rational Combination Therapies against Metastatic Tumors. Invited Seminar, **University of Wisconsin-Madison**, School of Pharmacy. 2016 May 19, Madison, WI.
32. Dreaden, E.C.; Engineering Rational Combination Therapies against Metastatic Tumors. Invited Seminar, **Boston University**, Department of Biomedical Engineering. 2016 Jan 21, Boston, MA.
31. Dreaden, E.C.; Nanoscale Precision Medicines: Gold Colloids and Engineered Polymers in Translational Cancer Therapeutics. Invited Seminar, **ETH Zurich**, Institute for Chemical and Bioengineering. 2015 Aug 24, Zurich, Switzerland.
30. Dreaden, E.C.; Kong, Y.W.; Yaffe, M.B.; Hammond, P.T.; Self-Assembled Peptide Amphiphile Nanoparticles for Rational Combination Therapies against Metastatic Solid Tumors. **250th ACS National Meeting**. 2015 Aug 16-20, Boston, MA.
29. Dreaden, E.C.; Kong, Y.W.; Yaffe, M.B.; Hammond, P.T.; Chemosensitizing Metastatic Tumors with Peptide Amphiphile-Mediated Silencing of p38/MK2 Pathway Signaling. **Gordon Research Conference** on Cancer Nanotechnology. 2015 July 28 – June 3, West Dover, VT.
28. Dreaden, E.C.; Turning the pepTide on Cancer: Chemosensitizing Metastatic Tumors with Peptide Amphiphile-Mediated Silencing of MK2. **MIT-Koch Institute FOCUS Seminar**. 2015 June 5, Cambridge, MA.
27. Dreaden, E.C.; Nanoscale Biomaterials for Rational Combination Therapies against Metastatic Solid Tumors. Invited Seminar, **University of Southern California**, Department of Chemical Engineering and Materials Science. 2015 April 23, Los Angeles, CA.
26. Dreaden, E.C.; Nanoscale Biomaterials for Rational Combination Therapies against Metastatic Solid Tumors. Invited Seminar, **Ecole Polytechnique Fédérale de Lausanne**, Institute of Materials. 2015 Mar 17, Lausanne, Switzerland.
25. Dreaden, E.C.; Nanoscale Biomaterials for Rational Combination Therapies against Metastatic Solid Tumors. Invited Seminar, **University of Washington**, Department of Bioengineering. 2015 April 2, Seattle, WA.
24. Dreaden, E.C.; Drugging Tumors on the Nanoscale: Rational Combination and RNA Interference Therapy. Invited Seminar, **Imperial College London**, Department of Bioengineering. 2015 Jan 15, London, UK.
23. Dreaden, E.C.; Kong, Y.W.; Yaffe, M.B.; Hammond, P.T.; Self-Assembled Polymer Nanomedicines for Synergistic and Synthetic Lethal Drugging of Breast and Ovarian Tumors. Annual Meeting of the **American Institute of Chemical Engineers**. 2014 Nov 16-21, Atlanta, GA.
22. Dreaden, E.C.; Kong, Y.W.; Yaffe, M.B.; Hammond, P.T.; Drugging Metastatic and Locally-Disseminated Solid Tumors Using RNAi Combination Chemotherapy. Annual Meeting of the **Biomedical Engineering Society**. 2014 Oct 22-25, San Antonio, TX.
21. Dreaden, E.C.; A Tale of Two Particles: Drugging Solid Tumors with Smart Polymer Nanotechnologies, **Google[x]**, Google Life Sciences Division. 2014 Sept 24, Mountain View, CA.

20. Dreaden, E.C.; Kong, Y.W.; Yaffe, M.B.; Hammond, P.T.; Synergistic and Synthetic Lethal Drugging of Breast and Ovarian Tumors Using Self-Assembled Polymer Nanomedicines. **Gordon Research Conference** on Drug Carriers in Medicine & Biology. 2014 Aug 17-22, Waterville Valley, NH.
19. Dreaden, E.C.; Morton, S.W.; Deng, J.; Yaffe, M.B.; Hammond, P.T.; Self-Assembled Polymer Drug Carriers for Rational Combination and RNA Interference Therapy of Solid Tumors. 248th **ACS National Meeting**. 2014 Aug 10-14, San Francisco, CA.
18. Dreaden, E.C.; Morton, S.W.; Deng, J.; Hammond, P.T.; Layer-by-Layer Nanoparticles: Rational Delivery of Rational Drug Combinations. Fall Meeting of the **Materials Research Society**. 2013 Dec 1-6, Boston, MA.
17. Dreaden, E.C.; Morton, S.W.; Deng, J.; Hammond, P.T.; LbL Nanoparticles for Combination Cancer Therapies: Receptor Targeting and Microenvironment Response. Annual Meeting of **Biomedical Engineering Society**. 2013 Sept 25-28, Seattle, WA.
16. Dreaden, E.C.; Morton, S.W.; Deng, J.; Shopsowitz, K.E., Hammond, P.T.; Layer-by-Layer (LbL) Nanoparticles for Active Targeting of Tumor-Initiating and Drug-Resistant Breast Carcinoma. 2013 **Harvard Dana-Farber** Cancer Biology Departmental Retreat. 2013 July 26, Boston, MA.
15. Dreaden, E.C.; Morton, S.W.; Deng, J.; Shopsowitz, K.E., Hammond, P.T.; Active Targeting of Triple-Negative Breast Tumors Using Hypoxia-Responsive Layer-by-Layer Nanoparticles. **Gordon Research Conference** on Cancer Nanotechnology. 2013 July 14-19, West Dover, VT.
14. Dreaden, E.C.; Self-Assembled Polymer Nanotechnologies for Multimodal Drug Delivery. Invited Seminar, **Servier Pharmaceutical Laboratories**. 2013 May 28-29, Boston, MA.
13. Dreaden, E.C.; Morton, S.W.; Deng, J.; Hammond, P.T.; LbL Nanoparticles for Combination Cancer Therapies: Receptor Targeting and Microenvironment Response. 245th **ACS National Meeting**. 2013 April 7-11, New Orleans, LA.
12. Dreaden, E.C.; Morton, S.W.; Deng, J.; Hammond, P.T.; Integrated Polymer Cancer Nanotechnologies. 2012 **Koch Institute Fall Retreat**. 2012 Oct 15-16, Hyannis, MA.
11. Dreaden, E.C.; Beyond Gilding the Lily: Leveraging Gold Nanotechnologies in Cancer Diagnostics and Therapeutics. 2011 **Graduate Awards Symposium**. 2011 Oct 28, Atlanta, GA.
10. Dreaden, E.C.; Gryder, B.G.; Austin, L.A.; Mwakwari, S. C.; Sodji, Q. H.; Tene Defo, B.A.; Hayden, S.C.; Oyelere, A.K.; El-Sayed, M.A., Hormone Receptor Targeted Nanotechnologies for Breast and Prostate Cancer Treatment. Second Annual Investigators Meeting of the Phase II **NCI Alliance for Nanotechnology in Cancer** (ANC). 2011 Sept 31-23, Boston, MA.
9. Dreaden, E.C.; Dickerson, E.B.; El-Sayed, I.H.; Huang, X.; McDonald, J.F.; Oyelere, A.K.; El-Sayed, M.A., Anti-Cancer Gold Nanoparticle Conjugates: Endocrine Targeted Treatment Strategies and Laser Photothermal Therapy. **NSTI Nanotech 2011** Conference and Expo. 2011 Jun 13-16, Boston, MA.
8. Dreaden, E. C.; Gold Nanoparticles in Cancer Diagnostics and Therapeutics. Invited Seminar, 2011 Fellows of the **Center for Drug Design, Development, and Delivery** (CD4) Meeting. 2011 Feb 8, Atlanta, GA.
7. Dreaden, E. C.; Neretina, S.; Qian, W.; Hughes, R.A.; Preston, J.S.; Mascher, P; El-Sayed, M.A., Plasmonic Enhancement of Nonradiative Charge Carrier Relaxation in Vertically Aligned Semiconductor-Metal Core-Shell Nanorod Arrays. 2011 **Georgia Tech Research Innovation Conference** (gtRIC). 2011 Feb 8, Atlanta, GA.
6. Dreaden, E. C.; Mwakwari, S.C.; Sodji, Q.H.; Oyelere, A.K.; Dickerson, E.B.; Huang, X.; Chu, H.; Pushpanketh, S.; El-Sayed, I.H.; McDonald, J.F.; El-Sayed, M.A. , Multimodal Cancer Treatment Strategies Using Small-Molecule Targeted Gold Nanoparticles. **Georgia Life Sciences Summit** 2010. 2010 Oct 28, Atlanta, GA.
5. Dreaden, E. C.; Neretina, S.; Qian, W.; Hughes, R.A.; Preston, J.S.; Mascher, P; El-Sayed, M.A., Plasmon-Exciton Coupling in Vertically Aligned Core-Shell CdTe-Au Nanorod Arrays. The **US-Egypt Advanced Studies Institute** (ASI) on “Nanomaterials and Nanocatalysis for Energy, Petrochemicals and Environmental Applications”. 2010 Mar 27 – April 5, Cairo, Egypt.
4. Dreaden, E. C.; Mwakwari, S. C.; Sodji, Q. H.; Oyelere, A. K.; El-Sayed, M. A., Enhancing Breast Cancer Drug Potency Via Nanoparticle Ligation. 2010 Meeting of the **Integrative BioSystems Institute** (IBSI). 2010 Mar 3, Atlanta, GA.
3. Dreaden, E. C.; Mwakwari, S. C.; Sodji, Q. H.; Dickerson, E. B.; Huang, X.; Chu, H.; Pushpanketh, S.; El-Sayed, I. H.; Oyelere, A. K.; McDonald, J. F.; El-Sayed, M. A., Gold Nanoparticles in Cancer Drug Delivery and Photothermal Therapeutics. 2010 **Georgia Tech Research Innovation Conference** (gtRIC). 2010 Feb 8, Atlanta, GA.
2. Dreaden, E. C.; Mwakwari, S. C.; Sodji, Q. H.; Dickerson, E. B.; Huang, X.; Chu, H.; Pushpanketh, S.; El-Sayed, I. H.; Oyelere, A. K.; McDonald, J. F.; El-Sayed, M. A., Gold Nanoparticles in Cancer Drug Delivery and Photothermal Therapeutics. **Research in Cancer Biology and Technology**. 2009 Nov 19, Atlanta, GA.

1. Tabor, C.; Neretina, S.; Dreaden, E. C.; El-Sayed, M. A., Application of the universal scaling law in the coupling of plasmonic nanoparticle pairs of unique symmetries. 236th **ACS National Meeting**. 2008, Aug 20, Philadelphia, PA.