

# Erik C. Dreaden

Massachusetts Institute of Technology  
Koch Institute for Integrative Cancer Research  
Department of Chemical Engineering  
Building 76 Room 579, 500 Main Street  
Cambridge, MA 02139

Email: [edreaden@mit.edu](mailto:edreaden@mit.edu)  
Office: 617.253.6443  
Mobile: 678.770.5498  
[www.erik.dreaden.org](http://www.erik.dreaden.org)

*\*updated 23 Mar, 2016*

## EDUCATION

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- Massachusetts Institute of Technology**, Cambridge, MA 2012 –  
Ruth L. Kirschstein Postdoctoral Fellow, Koch Institute for Integrative Cancer Research  
Advisor: Prof. Paula T. Hammond (Chemical Engineering)
- Georgia Institute of Technology**, Atlanta, GA 2006 – 2012  
Ph.D., Chemistry and Biochemistry  
Advisor: Prof. Mostafa A. El-Sayed  
Dissertation: “Chemistry, Photophysics, and Biomedical Applications of Gold Nanotechnologies”
- University of Georgia**, Athens, GA 2002 – 2006  
BS, Chemistry  
Advisor: Prof. John L. Stickney

## AWARDS

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- Koch Institute IMAGE Award, Massachusetts Institute of Technology 2014 – 2015  
NIH Ruth L Kirschstein Postdoctoral Fellowship (F32) 2013 – 2015  
Graduate Student Award, 60th Meeting of Nobel Laureates; Lindau, Germany 2010  
Predoctoral 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 Predoctoral Fellowship 2006 – 2008  
William H. Emerson Fellowship 2006 – 2007

## RESEARCH EXPERIENCE

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- Massachusetts Institute of Technology**, Koch Institute for Integrative Cancer Research, Cambridge, MA 2012 –  
NIH-Kirschstein Postdoctoral Fellow, Department of Chemical Engineering  
*Postdoctoral Research Advisor: Prof. Paula T. Hammond*  
Engineered polymer nanotechnologies for rational combination therapies against metastatic tumors.
- Georgia Institute of Technology**, Department of Chemistry and Biochemistry, Atlanta, GA 2006 – 2012  
Graduate Research Fellow  
*Advisor: Prof. Mostafa A. El-Sayed*  
Explored the structural, chemical, and optical properties of nanoscale gold particles and their applications in tumor-targeted imaging and therapy.
- University of Georgia**, Department of Chemistry, Athens, GA 2004 – 2006  
Undergraduate Research Associate  
*Advisor: Prof. John L. Stickney*  
Developed hierarchically assembled semiconductor nanostructures for enhanced solar energy harvesting.

## TEACHING EXPERIENCE

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

## PUBLICATIONS

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### Published / In Press:

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, **2016**, *in press*, *ACS Nano*.
32. [Dreaden, E.C.](#); Correa, S.; Gu, L.; Hammond, P.T., Engineering Nanolayered Particles for Modular Drug Delivery, **2016**, *in press*, *Journal of Controlled Release*.
31. 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, **2016**, *in press*, *Nucleic Acid Research*.
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.
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.
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*; 1<sup>st</sup> 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.](#); Sioue, 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 biondiagnostics, 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., Srirajakanthan, 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. [Dreaden, E.C.](#); Dickerson, E. B.; 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.; Hammond, P.T.; Yaffe, M.B., Synergistic RNA Interference Therapy Targeting p38/MAPK and Translesion DNA Synthesis in Metastatic Non-Small Cell Lung Cancer, *in preparation*.

Dreaden, E.C.; Kong, Y.W.; Yaffe, M.B.; Hammond, P.T., A Synthetic Lethal RNA Interference Combination Chemotherapy for Metastatic Ovarian Cancer, *in preparation*.

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**

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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.

## **SUPPLEMENTARY GRADUATE COURSEWORK**

---

Cancer Biology, Massachusetts Institute of Technology (R.A. Weinberg) 2014

Drug Design, Development and Delivery, Georgia Institute of Technology 2011

Managing Resources of the Technological Firm, Georgia Institute of Technology 2007

Electrochemistry and Electroanalytical Chemistry, University of Georgia 2006

## **MENTORING**

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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**

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### **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)

Bioconjugate Chemistry (ACS)

Applied Physics Letters (AIP)

Cancer Research (AACR)

ACS Nano (ACS)

Chemical Society Reviews (RSC)

Acta Biomaterialia (Elsevier)

IEEE Selected Topics in Quantum Electronics (IEEE)

Journal of Materials Chemistry A/B/C (RSC)  
New Journal of Chemistry (RSC)  
AIP Advances (AIP)  
Eur. J. Pharm. Biopharm. (Elsevier)  
Langmuir (ACS)  
Nanomedicine (Future Science)  
Dalton Transactions (RSC)  
Journal of Applied Physics (AIP)  
Chemical Communications (RSC)  
Colloids and Surfaces (Elsevier)

Materials Horizons (RSC)  
Therapeutic Delivery (Future Science)  
Medicinal Chemical Communications (RSC)  
Journal of Nanomaterials (Hindawi)  
Analyst (RSC)  
Journal of Physical Chemistry B/C (ACS)  
RSC Advances (RSC)  
Chemical Research in Toxicology (ACS)  
Metallomics (RSC)  
Nanoscale (RSC)

## OUTREACH

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“Light-Activated Therapy Kills Cancer Cells” *Cancer Discovery* (Sept 2015, AACR) 2015  
“Tiny Technologies” *NBC Learn* (NBC Universal) 2015  
“Bridging the Gap: Science With/IN/Sight” (MIT, Dana-Farber, MGH) 2014  
“Cell Picture Show” *Cell* (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

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American Institute of Chemical Engineers (AIChE) 2014 –  
• Pharmaceutical and Bioengineering Division • Materials Engineering and Sciences Division  
American Association of Cancer Research (AACR) 2013 –  
• 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

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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.
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## PROFESSIONAL REFERENCES

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### **Prof. Paula T. Hammond** (*Postdoctoral Advisor*)

David H. Koch Professor in Engineering  
Bayer Chair Professor of Chemical Engineering  
Department Head, Chemical Engineering  
Massachusetts Institute of Technology  
77 Massachusetts Avenue  
Cambridge, MA 02139  
Tel: +1 617 258 7577  
Email: [hammond@mit.edu](mailto:hammond@mit.edu)

### **Prof. Mostafa A. El-Sayed** (*Ph.D. Advisor*)

Julius Brown Chair, Regents' Professor  
US National Academy of Sciences  
School of Chemistry and Biochemistry  
Georgia Institute of Technology  
901 Atlantic Dr NW  
Atlanta, GA 30332-0400  
Tel: +1 404 894 0292  
Email: [melsayed@gatech.edu](mailto:melsayed@gatech.edu)

### **Prof. Jeremiah A. Johnson** (*Postdoctoral Collaborator*)

Firmenich Professor  
Department of Chemistry  
Program in Polymer Science and Materials  
Massachusetts Institute of Technology  
77 Massachusetts Avenue  
Cambridge, MA 02139  
Tel: +1 617 253 1819  
Email: [jaj2109@mit.edu](mailto:jaj2109@mit.edu)

### **Prof. Michael B. Yaffe** (*Postdoctoral Collaborator*)

Professor of Biology and Biological Engineering  
Massachusetts Institute of Technology, Broad Institute  
Surgical Intensivist, Harvard-Beth Israel Deaconess Medical Center  
77 Massachusetts Avenue  
Cambridge, MA 02139  
Tel: +1 617 452 2442  
Email: [myaffe@mit.edu](mailto:myaffe@mit.edu)

### **Prof. Yomi K. Oyelere** (*Graduate Collaborator, PhD Committee*)

Associate Professor  
Petit Institute for Biosciences and Bioengineering  
School of Chemistry and Biochemistry  
Georgia Institute of Technology  
901 Atlantic Dr NW  
Atlanta, GA 30332-0400  
Tel: +1 404 894 4047  
Email: [aoyelere@gatech.edu](mailto:aoyelere@gatech.edu)