

Yah-el Har-el

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EDUCATION:

Johns Hopkins University

Ph.D., Chemical and Biomolecular Engineering, May 2005
 Dissertation: High DNA-Density Non-viral Gene Vectors
 3400 N. Charles St.
 Baltimore, Maryland 21218

Johns Hopkins University

Bachelor of Science, Dean's List, May 1998
 Double major: Chemical Engineering and Biomedical Engineering
 Minor in Mathematical Sciences
 3400 N. Charles St.
 Baltimore, Maryland 21218

RESEARCH EXPERIENCE:

Post Doctoral Fellow

September 2010 -present

Drexel University

Biomedical Engineering
 Philadelphia, PA USA
 Dr. Peter Lelkes

and Philadelphia University

School of Engineering and Textiles
 Philadelphia University
 Dr. David Brookstein

Use electrospinning techniques to develop a tissue engineering scaffold for the purpose of creating a cardiac patch. In order to culture stem cells for differentiation into cardiac myocytes, will incorporate drug delivery to the engineered scaffold. Am the laboratory coordinator for use of all equipment within the Integrated laboratory for Cellular Tissue Engineering & Regenerative Medicine (ICTERM).

Post Doctoral Fellow

June 2005-Aug 2009

Johns Hopkins University School of Medicine

Department of Radiology, Division of Nuclear Medicine
 Baltimore, MD USA
 Dr. George Sgouros

Encapsulated radionuclides within liposomes for targeted treatment of metastatic ovarian cancer and collaborated in the encapsulation of contrast agents within liposomes for diagnostic imaging applications.

Animal Models: animal handling and monitoring, maximal tolerated dose (MTD) studies, efficacy studies, biodistribution and dosimetry, SPECT/CT imaging studies, small animal MR imaging

Immunotargeted liposomes: determining targeting capability, stability under varying conditions, encapsulation efficiency

Cell culture: cell maintenance/passaging of multiple cell lines, freezing and preservation, viability assays, immunoreactivity, spheroid growth and monitoring, FACS, MR imaging of cell extracts

Accomplishments:

NIH/NCI Ruth L. Kirschstein National Research Service Award, 2006-2009

International Society of Magnetic Resonance in Medicine (ISMRM) Educational Stipend, 2006

Abstract highlighted during Society of Nuclear Medicine Annual Meeting, 2008

Graduate Student

Sept 1998-Jan 2005

Johns Hopkins University School of Engineering

Department of Chemical and Biomolecular Engineering

Baltimore, MD USA

Dr. Justin Hanes

Performed physical and biological characterization of DNA and drug delivery systems made of degradable and non-degradable polymers.

Physical characterization: static and dynamic light scattering, zeta potential measurement, transmission electron microscopy (TEM), scanning electron microscopy (SEM), Coulter multisizing, tap density measurement, aerosolization with Anderson impactor, gel permeation chromatography (GPC), protein and DNA release profiles

Biological characterization: cell maintenance/passaging of multiple cell lines, freezing and preservation, viability/MTT assays, FACS, transfection, confocal microscopy, specific activity assays

Methods used in drug and DNA loading: polymer and DNA complexation, complex coacervation, double and single emulsions, lyophilization

Was a teaching assistant for the course, "Engineering Aspects of Controlled Drug Delivery" for 4 semesters.

Accomplishments:

Dissertation: High DNA-Density Non-viral Gene Vectors

Passed Chemical Engineering PhD Qualifying Exam with Honors, 1999

Abel Wolman Fellowship recipient, granted to exceptional PhD students in engineering, 1999 -2000

Research Assistant

June 1998-Aug 1998

Carnegie Mellon University School of Engineering

Department of Mechanical Engineering

Pittsburgh, PA USA

Dr. Norman Chigier

Studied correlation between refractive index, temperature, and concentration of acetone-water mixtures

Undergraduate Research Assistant

Sept 1996-May 1998

Johns Hopkins University School of Engineering

Department of Chemical Engineering

Baltimore, MD USA

Dr. Kathleen Stebe and Dr. Timothy Barbari

Developed lab automation system to study surface modified membranes through ultra-filtration. Studied fouling properties of ultra-filtration membranes using bovine serum albumin (BSA).

Summer Research Intern

June 1997-Aug 1997

Genentech, Inc

Manufacturing Sciences Department

Dr. TomMcNerney

Characterized and separated proteins.

Capillary electrophoresis, cation exchange chromatography with HPLC and FPLC's

Undergraduate Research Assistant

Sept 1994-Aug 1996

Johns Hopkins University School of Engineering

Department of Chemical Engineering

Baltimore, MD USA

Dr. W. Mark Saltzman

Conjugated cell adhesion peptides to polymers to promote cell aggregation. Performed cell culture in incubators and in a microgravity chamber. Assisted in surgery involving rats.

Protein concentration assays, cell sonication
Cell maintenance /passaging and cell counting
Animal handling, fetal brain dissections, injection of cells into adult rat brain

Research Assistant June 1993-Aug 1994

University of Pittsburgh School of Engineering 10-40 Hrs/Wk

Department of Chemical Engineering

Dr. Eric Beckman

Synthesized and evaluated physical properties of polymers.

Organic polymer synthesis

Physical evaluation: viscosity measurement using 4-bulb viscometers, differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), Fourier transform infrared spectroscopy (FTIR)

OTHER QUALIFICATIONS:

JOB RELATED SKILLS:

Proficiency in MS Word, Excel, and Power Point

Proficiency and ability to train others in using techniques used in graduate and post-doc training listed above. This includes software associated with computer based applications. Exceptions to this would be only an ability to use and understand SPECT/CT and MR imaging, but not to train others.

AWARDS:

NIH/NCI Ruth L. Kirschstein National Research Service Award, 2006-2009

International Society of Magnetic Resonance in Medicine (ISMRM) Educational Stipend, 2006

Biomedical Engineering Society (BMES) Student Travel Award, 2003

Abel Wolman Fellowship recipient, granted to exceptional PhD students in engineering, 1999 -2000

Passed Chemical Engineering PhD Qualifying Exam with Honors, 1999

Dean's List, Johns Hopkins University, 1996-1998

SOCIETIES:

American Association for the Advancement of Science

American Association of Cancer Research

American Institute of Chemical Engineers

LEADERSHIP/TEAMWORK EXPERIENCES:

A member of six distinct collaborations as a post-doctoral fellow, resulting in numerous abstracts and currently two publications.

A teaching assistant in the course *Engineering Aspects of Controlled Drug Delivery* for four consecutive years.

A member of three teams in Senior Design and Chemical Engineering Lab, Johns Hopkins, 1997-98

Manager (2 yrs), Treasurer (1 yr), and Member (6 yrs) of Ketzev a Capella group, 1997-2004

SERVICE TO PROFESSION:

"Nanotechnology for In Vivo and In Vitro Imaging" American Institute of Chemical Engineering, Salt Lake City, UT 2010 (Chair, with Dr. Pankaj Karande)

"Bioimaging and Diagnostics" American Institute of Chemical Engineering, Salt Lake City, UT 2010 (Chair, with Dr. Melissa Moss)

"Nano-Diagnostics" American Institute of Chemical Engineering, Salt Lake City, UT 2010 (Co-Chair with Dr. Melissa Moss)

"Nanotechnology for In Vivo and In Vitro Imaging" American Institute of Chemical Engineering, Nashville, TN 2009 (Chair, with Dr. Pankaj Karande)

"Bioimaging and Diagnostics" American Institute of Chemical Engineering, Nashville, TN 2009 (Chair, with Dr. Mark Borden)

"Nanotechnology for In Vivo and In Vitro Imaging" American Institute of Chemical Engineering, Philadelphia, PA 2008 (Co-chair with Dr. Agnes Ostafin)

PUBLICATIONS:

Yah-el Har-el, Hong Song, David L. Huso, Andrew Prideaux, Caroline Esaias, Natalie Nilsen, Vincent Yeh, and George Sgouros. *Therapeutic efficacy of Ac-225 loaded immunoliposomes in a metastatic ovarian cancer model*. Submitted to Journal of Liposome Research.

Jason M. Zhao, Yah-el Har-el, Michael T. McMahon, Jinyuan Zhou, A. Dean Sherry, George Sgouros, Jeff W.M. Bulte and Peter C.M. van Zijl. *Size-induced Enhancement of Chemical Exchange Saturation Transfer (CEST) Contrast in Liposomes*. JACS **130**:5178-5184 (2008)

Yah-el Har-el and Yoshinori Kato. *Intracellular Delivery of Nanocarriers for Cancer Therapy*. Current Nanoscience. **3**:329-338 (2007)

Justin Hanes, Michelle Dawson, Yah-el Har-el, Junghae Suh and Jennifer Fiegel. *Gene Therapy in the Lung*. In: A. J. Hickey (ed.) *Pharmaceutical Inhalation Aerosol Technology*, 2nd edition. New York: Marcel Dekker Inc.

A comprehensive list of oral and poster presentations is available upon request.