JOSHUA R. FREEDMAN

1700 Whitehorse - Hamilton Square Road D-1 Hamilton Square NJ 08540
Phone: (609) 890-2600 Email: Freedman.Dermatology@gmail.com

EDUCATION

Residency Training

Dermatology – Jackson Memorial Hospital / University of Miami – Miami, Fl -2012-2015
Internal Medicine – Advocate Illinois Masonic Hospital - Chicago, IL 2011-2012

Doctor of Medicine

Rush University, College of Medicine 2011

Masters of Science –Electrical and Biomedical Engineering, Electrophysics

Drexel University, College of Electrical, College of Biomedical Engineering 2007

Bachelor of Science – Electrical Engineering: Radio Frequency & Electronics

Drexel University, College of Electrical Engineering 2003

LICENSURE

State of New Jersey: Doctor of Medicine and Surgery, CDS, DEA
State of Florida: Doctor of Medicine and Surgery

PROFESSIONAL AFFILIATIONS

American Academy of Dermatology – member
American Society for Dermatologic Surgery - member
American Contact Dermatitis Society – member
Miami Dermatology Society - member
Florida Society for Dermatologic Surgeons - member

HONORS

Residency Awards/Grants

- Samuel & Cecilia Resnik Resident Research Day - First Place, 2015
- Resident of Distinction Award, DermMentors; First Place, 2014
- Native American Health Services Grant, American Academy of Dermatology 2014
- American Society for Laser Medicine & Surgery, Preceptorship Grant 2014
- American Society for Dermatologic Surgery, Preceptorship Grant 2014

Medical School Honors/Awards/Fellowships:

- Preclinical Honors: Cellular Histology, Anatomy, Neurobiology, Pharmacology
- Clinical Honors/High Pass: Neurology, Psychology / Surgery, Family Medicine, ObGyn
- Charles M. Solomon MD Grant (2008, 2009, 2010)
- Rush University, Deans Research Fellowship 2008
- Faculty Selected Speaker - Rush University Research Day 2008

Graduate School Honors/Awards/Fellowships:

- Drexel University Deans List 2004-2007: 3.9 GPA
- IGERT – National Science Foundation Fellowship (2005-2006, 2006-2007)
- Deans Award: Best Poster – Drexel University Research Day 2006
- National Science Foundation GRFP – Honorable Mention 2006
- Drexel University College of Engineering Dean's Fellowship (2005-2006)

Undergraduate Honors/Awards/Fellowships:

- A.J. Drexel Scholar (1998-2003)
- Drexel University Honor's Society (1998-2003)
- Drexel University Dean's List (1998-2003)
- Pennsbury Scholar (1998-2000)

RESEARCH

Sylvester Cancer Center, University of Miami 2012- present

- Research and development of novel cutaneous imaging device to enhance and provide new insight in early cancer detection and diagnostics.

Center for Facial Rejuvenation, Oculofacial Aesthetic & Reconstructive Surgery 2010

- Authored comprehensive review of primary and secondary lacrimal canaliculitis, diagnostic algorithms, medical and surgical treatment modalities
- Designed novel electro-optic measurement device for opthalmalogic use

Rush Craniofacial Center, Dept. of Plastic and Reconstructive Surgery, 2008-2009

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- Conducted case series cohort study in monobloc distraction procedure in syndromic craniofacial dysostosis in children and adults
- Received University Dean's Research Grant for associated proposal
- Completed training in IRB regulations and authored IRB protocols
- Presented findings at American Cleft Palate Association annual conference, Grand Rounds, and University Research Day

Drexel University Nano Soft Lithography Laboratory, 2005-2007

- Developed magnetically guided nanotube tipped intracellular probe (patent pending)
- Investigated intracellular field manipulation of novel magnetic carbon nanotubes

Drexel University Photonics Department, 2004-2005

- Researched fabrication methods of polymer dispersed liquid crystal transmission gratings
- Investigated thin film reflective gratings as a means of creating tunable wavelength filter devices for biomedical optical endoscopy applications, and NASA satellite applications

Medical College of Philadelphia Neuro-Engineering Facility, 2001-2003

- Designed, constructed, and tested custom electronic hardware for biomedical engineering research, and animal behavioral studies.
- Designed novel electrophysiological / electrochemical device for in-vivo neural tissue implantation, funding granted from the National Institute of Health.

Naval Air Warfare Center Lakehurst NJ, 2000-2001

- Software consultant for Interactive Electronic Technical Manuals for naval helicopters.
- Design/production of electromagnetic emissions sensitive devices on US naval carriers.

Drexel University Power Systems Laboratory, 1996-1998

- Optimization algorithms development for 3-phase power distribution for naval systems.

PUBLICATIONS

[1] Freedman, J.R., Kaufman, J., Metelitsa, A. I., & Green, J. B. Picosecond Lasers: the Next Generation of Short-Pulsed Lasers. *Sem Cutan Med & Surg* Dec 2014 Vol. 33, No.4, pp. 164-168

[2] Yin NC, Choudhary S, Freedman JR, Kerdel FA, Milikowski C " Localized Vasculitis in newly formed striae: a unique manifestation of systemic lupus erythematosus" Int J Dermatol. 2014 Dec;53 (12):e581-3

[3] Freedman, JR; Greene J, Green JB "Histological effects of Resurfacing Lasers" *Facial Plastic Surg.* Feb 2014 30(1):40-8

[4] Herskovitz I, Freedman J, Tosti A, "Minoxidil induced hypertrichosis in a 2 year-old child" *F1000Res.* 2013 Oct 28; 2:226

[5] Yin N; Choudhary S, Freedman JR, Kerdel FA, "A Unique Manifestation of Systemic Lupus Erythematous *International Journal of Dermatology* [accepted] 2013

[6] Freedman J.R.; Markert M.S.; Cohen A.J.; "Primary and Secondary Lacrimal Canaliculitis: A Review of Literature" *Surv Ophthalmol* 2011 Jul-Aug;56(4):336-47. 2011 May 28

[7] Campbell L; Freedman, J.R.; Chevalier, M; O'Donague M; Dy LC, Tharp MD; "Erythema Gyratum Repens Without Associated Malignancy" J Am Acad Dermatol. 2011 Jul;65(1):e22-3

[8] Freedman J.R., Mattia D., Korneva G., Gogotsi Y., Friedman G., Fontecchio A.K., "Magnetic Assembly of Carbon Nanotube Tipped Pipettes" Appl. Phys Lett. vol 90 (10) 103-108 (2007)

ONLINE PUBLICATIONS

[1] Freedman, J.R., Kaufman, J., Green, J. B. Fractionate Bipolar Radiofrequency Devices Rejuvenate Skin *Dermatology Times* Feb 2015

[2] Freedman J, Cronin T; "Roundtable on Melanoma"; *Dialogues in Dermatology* Jan.2014

[3] Freedman J, Camacho I; "Hyperkeratosis of the Nipple"; E-Medicine Medscape

[4] Freedman J, Camacho I; "Dermatologic Manifestations of Chancroid; E-Medicine Medscape

[5] Freedman J, Kirsner RJID VisualDx Quiz: Feb 2014; JID (2014) 134, e13

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ABSTRACTS

[1] K Messner DO[1], JR Freedman MD[2], L Fine MD[2], N Segall MD[2] and M Braniecki MD[1] "Atypical Eosinophilic Cellulitis in a Soccer Player due to Fecal Contaminated Cleats" 15th Annual Joint Meeting of the International Soc. for Dermatopathology March 14th, 2012
[2] Y. Gogotsi, G. Friedman, E. Vitol, R. Singhhal, J. Freedman, D. Mattia, "Carbon Nanotube Tipped Cellular Probes" 213th Elec. Chem. Soc. Pheonix, AZ May 18th-22nd 2008

POSTERS

[1] Freedman J.R, Friedman G., Gogotsi Y., Mattia D., Korneva G., Fontecchio A.K., "Nanoprobe Fabrication: Field Manipulation of Nanoparticles" Drexel University Research Day, **Awarded Best Poster** - June 2006
[2] Freedman J.R., Moxon K.A*, et. al.* "Design of a Near-Simultaneous Electrochemical and Electrophysiological Recording Device for Neural Tissue," Drexel Univ. Research Day 2003
[3] S.C. Leiser, J.R. Freedman, K.A. Moxon "Response Properties of Trigeminal Ganglion (VG) Neurons during Exploratory Tactile Behaviors in the Awake Rat*"* Drexel U Research Day 2002

PRESENTATIONS

[1] Freedman. J, Grichnik J "Cutaneous Vascular Imaging: A Novel Method" **Awarded Grand Prize: Resident of Distinction Competition.** *Winter Clinical Dermatology Conference*, Hawaii 2014
[2]Polley J.W., Maurice S., Freedman J., Figueroa A., "Outcomes in Rigid External Distraction" *American Society of Plastic Surgery*, Seattle WA, Oct 22, 2009
[3] Polley J.W., Maurice S., Freedman J., Figueroa A., "Monobloc Midface Advancement with Rigid External Distraction (R.E.D.)" International Soc. Craniofacial Surgery, Paris France 2009
[4] Freedman J.R., Maurice S., Christopoulos N.A., Figueroa A.A., Polley J.W., "Monobloc Advancement by Distraction Osteogenesis with Rigid External Distraction: Peri and Post Operative Morbidity" *Amer. Cleft. Palate Assoc.*, Scottsdale AZ, 2009
[5] Freedman J.R., Maurice S., Christopoulos N.A., Figueroa A.A., Polley J.W., "Monobloc Advancement by Rigid External Distraction; Peri- and Post Operative Morbidity" Grand Rounds, Rush Univ. Dept. of Plastics and Reconstructive surgery, April 2009
[6] Freedman J.R., Figueroa A.A., Polley J.W., "Monobloc Advancement by Rigid External Distraction; Operative Morbidity" **Faculty Selected Student Speaker**, 26th Annual. Rush University Forum for Research & Clinical Investigation, March 2009
[7] Freedman J.R., Friedman G., Gogotsi, Y., Fontecchio, A. K. "Nanoprobe Fabrication by Field Manipulation of Nanotubes" *Materials Research Society*, *San Francisco, CA* April 18th, 2006
[8] Freedman J.R., Friedman G., Gogotsi, Y., Fontecchio, A. K*,* "Field Manipulation of Nanoparticles" Univ. of Pennsylvania Nanoday, 2005

LEADERSHIP & COMMUNITY SERVICE

DERMATOLOGY VOLUNTEER CLINICS & EVENTS.
Native American Rural Health Service: Chinle, AZ, Tsaile AZ, August- September 2014
Florida Keys Health Fair: Marathon Key, Key West, FL, Feb 2013, 2014, 2015
Camillus House: Miami, FL 2011-2015
Annual Melanoma Fun Run: Crandon Park, Key Biscayne 2012-2015
Bike MS 150: Breakaway to the Keys: – Created Department of Dermatology cycling team "Gyrate Erythema" for annual Multiple Sclerosis charity ride and conducted fundraising efforts for MS. Jan 2014,2015

MEDICAL STUDENT SURGERY INTEREST GROUP.
Senior Advisor 09-10: Organized student ACS/Soc. of Cardiothoracic Surgeons course & wet lab 2009, instructed Student Suture lab 2009. Facilitated Davincci Surgery Robot simulation sessions for students.
President 08-09 –Approached and recruited distinguished national lecturers for student lectures and panel discussions including the president of Organ Procurement and Transplantation Network (OPTN)/United Network for Organ Sharing (UNOS), Event Coordinator in Plastics, Cardiothoracics, Otolaryngology, Retinal Surgery, and General Surgery lectures. Restructured

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the organization to include larger student board, new website and email services, monthly newsletter and expanded student services.
Plastics Chair 07-10: Advised students interested in Plastic surgery in shadowing and research opportunities, facilitated conference attendance as junior members at Plastic Surgery 2008

COMMUNITY HEALTH CLINIC: STUDENT-RUN FREE CLINIC (2008-present)
Steering Committee Member – Directed multiple aspects of managing, scheduling and supervising students, recruiting and scheduling attending physicians, and fundraising for the clinic that provided healthcare to the uninsured. Supervised clinic 1-4 times per month: directing patient flow, organized personnel, educated first and second year students in clinical skills, and assisted with medical records, labs, specialty referrals, in house specialty procedures, and community outreach and education programs.
Founder of Free Audiology Clinic 2008 Originated program concept, utilized NIH funded audiometry equipment, personally proposed to executive board and recruited Audiologist Faculty and student volunteers. Created program which continues to be run by current audiology students and treat uninsured patients weekly for the past 3 years.
Volunteer Education 2008: Co-Designed the medical education program for volunteers
Medical Volunteer 2008-present

RUSH UNIVERSITY MEDICAL HISTOLOGY TUTORING
Tutor 08-09 **-** Taught tri-weekly sessions in cellular histology, and accrued more than 40% of the 1st year class as students defected to fill these sessions. Created Course Review Lectures and Materials used by vast majority of subsequent histology tutors and medical students for 3 years.
Review Coordinator: Designed and implemented end of semester materials and off campus review event for first year histology students

RUSH COMMUNITY SERVICES INITIATIVE PROGRAM-CHARITY EVENT
Student Organizer (2008) Charity Gala; Organized all students and faculty volunteers, training, and transport for a large Black Tie Affair & Casino night at Soldier Field which raised over $94,000 for community medical services in Chicago.

RUSH COMMUNITY SERIVCES CLINICAL SKILLS TRAINING
Preceptor: (2009) Training of 1st year medical students in clinical skills, immunizations, glucometer use, and injections to prepare them for various medical volunteering clinincs

MEDICAL VOLUNTEERING
Medical Volunteer - Franciscan House Homeless Shelter 2008-2009
Medical Volunteer - Community Christian Industrial League 2008-2009
Medical Volunteer – St. Pius V Parrish 2009
Emergency Medical Volunteer - Women's Gymnastics Invitational, 2009
Medical Volunteer - RCSIP Community Health Fair, 2008
Medical Volunteer -University of Pennsylvania, Emergency Department 2006-2007
Medical Volunteer - Neurology ICU 2005
Medical Services Volunteer – Burning Man Festival, Blackrock Nevada 2008

EXTRA-CURRICULAR LEADERSHIP & HOBBIES
Team Captain 2008, Chicago Inter-Medical School Softball Tournaments, 2008, 2009
President – Chess Club, Little Italy community, Chicago 2008-09 & Drexel Univ.1998-2003
Photographer – Rush Student and Faculty Art Show 2009, monthly displays in local cafés
Cyclist – group rides, road bicycling, mountain biking, amateur mechanic
Snowboarding – avid boarder, coordinator of medical school, and undergrad group excursions

MEDICAL CONFERENCES

Invited Speaker -American Cleft Palate Assoc. Annual Conf., Scottsdale AZ, May 2009
Student Organizer - Cardiothoracic Surgery in the Future, Technical Overview for Residents & Medical Students 2009, sponsored by ACS, STS, and AATS, Chicago IL -

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Junior Member - Plastic Surgery 2008, Junior Member Conf/Medical Student Day, Chicago, IL
Student Guest – Chicago Dermatological Society: April, May 2009

PROFESSIONAL MEMBERSHIP

Member – American Academy of Dermatology
Member - American Cleft Palate Association (2008-present)
Student Member – American Medical Student Association (2007-2010)
Member – Materials Research Society (2004-2007)
Student Member – Institute of Electrical and Electronic Engineers (1999-2005)

PATENT

Magnetophoretic Fabrication of Nanostructured Cellular Probes (pending: Drexel legal dept.)

INVENTIONS

VASCULAR IMAGING DEVICE – 2013-present: Presently designing a novel dermatological instrument which is highly sensitive for imaging microvascular structures to aid in cutaneous oncology screening and dermatologic preventative care. Creating and testing experimental optical techniques utilizing absorption, fluorescence, and digital enhancement to reveal smaller, deeper cutaneous structures which may aid in earlier detection of malignant, and premalignant lesions.

EPILUMINESCENT DERMOSCOPES – 2010-12: Designed and constructed handheld epiluminescent dermoscopic devices for personal clinical use. Tunable optical filters allow visualization of surface features through deep structures. Illuminates subjects with ultraviolet (Wood's lamp), linearly polarized or nonpolarized light, and three-peak color spectrum. Magnification models at 5x and 8-16x. Battery operated.

MAGNETICALLY ASSEMBLED NANOPROBES – 2007: See patent and article: Freedman, J.R. et al. "Magnetic Assembly of Carbon Nanotube Tipped Pipettes" Appl. Phys Lett. 90 103108 (2007)

DUAL FUNCTION NEURAL RECORDING DEVICE – 2003: Designed and constructed novel device for measuring neuronal action potentials and neurotransmitter concentrations using implantable multisite electrodes and signal processing unit with software interface. Currently in use in Drexel University Neuro-engineering laboratories.

BIO-ENVIRONMENTS – 2001-2002: designed and constructed multiple animal environments with digital interfaces and feedback methods for neuro-behavioral studies

SLIDING TIMBRE ELECTRIC GUITAR PICKUP – 1999: designed, constructed, novel guitar pickup for enhanced musical performance options and sound engineering.

NATIONAL SCIENCE FOUNDATION INITIATIVES

Research Experience for Undergraduates – Mentor (2005-2007)
Research Experience for Teachers – Mentor (2006, 2007)
Nano-Enlightenment Initiative – Presenter, Guide (2006)