BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors. Follow this format for each person. DO NOT EXCEED FIVE PAGES.

NAME: Joel M. Gelfand

eRA COMMONS USER NAME (credential, e.g., agency login): Gelfandj

POSITION TITLE: Associate Professor of Dermatology and Epidemiology

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Tufts University, Medford, MA	B.S.	1989-1993	Biology
Harvard Medical School, Boston, MA	M.D.	1993-1998	Medicine
University of Pennsylvania, Philadelphia, PA	M.S.C.E.	2001-2003	Epidemiology

A. Personal Statement

Dr. Gelfand's research program focuses on observational and experimental studies in patients with psoriasis, a chronic, immune mediated disease of the skin and joints that affects over 125 million people worldwide. His research program has been highly influential (h index 43, i10-index 99, over 9300 citations) and has led to changes in the standard of care for psoriasis patients. He has established large population-based and multi-centered clinic based cohorts of patients with psoriasis which are the focus of longitudinal studies evaluating cardiovascular risk and the comparative effectiveness of treatment modalities in this population. He is also conducting translational and mechanistic clinical trials to determine how targeted and skin directed treatments impact vascular inflammation and lipid metabolism. He additionally has expertise in atopic dermatitis, cutaneous T cell lymphoma, and hidradenitis research. Dr. Gelfand has extensive experience in team science and has established collaborations with investigators in translational medicine, nuclear medicine, neurology, psychiatry, oncology, hepatology, cardiology, rheumatology, epidemiology, and biostatistics necessary for the success multi-disciplinary studies. He has extensive experience mentoring pre and post-doctoral fellows and candidates in the Master of Science in Epidemiology Program and junior faculty at PENN and institutions across the United States. Of special relevance to this application, Dr. Gelfand has extensive experience in the design and analysis of experimental studies spanning numerous approaches and disciplines.

B. Positions and Honors

Positions and Employment

1998-1999	Intern in Medicine, Mount Sinai Hospital, New York, NY
1999-2002	Resident Dermatology, Hospital of the University of Pennsylvania, Philadelphia, PA
2002-2003	Epidemiology Fellow, Hospital of the University of Pennsylvania, Philadelphia, PA
2002-2003	Instructor, Department of Dermatology, University of Pennsylvania
2003-2011	Assistant Professor, Department of Dermatology, University of Pennsylvania
2003-2010	Associate Scholar, Center for Clinical Epidemiology and Biostatistics, U of Penn
2008-	Faculty Fellow, Center for Public Health Initiatives, University of Pennsylvania
2010-	Senior Scholar, Center for Clinical Epidemiology and Biostatistics, U of Penn
2010-2011	Assistant Professor of Epidemiology, Department of Epidemiology and Biostatistics, University of Pennsylvania
2012-	Associate Professor (tenured) of Dermatology and Epidemiology, University of Pennsylvania Perelman School of Medicine, Philadelphia PA

Other Experience and Professional Memberships

2003- Member, Cancer Center, University of Pennsylvania
2003- Medical Director, Clinical Studies Unit, Department of Dermatology, U of Penn
2005- National Psoriasis Foundation, Selected Member, Medical Board 2005-2010; Selected Member, Grants Review Committee 2007, Scientific Committee 2009-2014
2005- National Institute of Arthritis, Musculoskeletal and Skin Diseases (NIAMS), Selected Member, NIH/NIAMS Study Section, Contract on Innovative Therapies for Rheumatic and Skin Diseases 2005; Selected Member, Challenge Grant Peer Reviewer July 2009; Selected Member, NIAMS ACTS Study Section on Small Business Applications, October 2009; Selected Member, NIAMS Roundtable on Clinical Trials in Skin Diseases, December 11, 2009; Special Emphasis Panel/ Scientific Review Group- Clinical Trials Planning, Pilot and Research Grants 2011, 2013 NIAMS *ad hoc* reviewer Loan repayment program
2007- Member, Institute for Translational Medicine and Therapeutics, U of Penn
2008-2013 The FDA/CDER Office of Surveillance and Epidemiology, Appointed member, Special Government Employee to the Drug Safety and Risk Management Advisory Committee
2013- Director, Patient Centered Outcomes Research Track, Masters of Clinical Epidemiology Program (PENN)
2013- Associate Director, Center for Dermatoepidemiology and Translation (PENN)
2013- Elected member, American Society for Clinical Investigation

Honors

1991 Hughes Foundation Undergraduate Research Fellow
1993 Thomas and Emily Carmichael Prize Scholarship, for excellence in human physiology
1993 Class of 1947 Victor Prather Prize Scholarship, for excellence in research
1993 *Phi Beta Kappa Summa cum laude* Tufts University
1996 Carl W. Walter Research Fellowship, Harvard Medical School
1997 Mount Sinai Department of Dermatology Research Award
1998 *Magna cum laude* Harvard Medical School
2001 The College of Physicians of Philadelphia Johnson Beerman Award for Research
2001-2003 NIH National Research Service Award for Individual Postdoctoral Fellows (F32)
2002-2006 NIH Clinical Research Medical School Loan Repayment Award
2003 American Skin Association Research Grant Award
2003 Dermatology Foundation Career Development Award
2004 NIH/NIAMS K23 Mentored Career Development Award in Clinical Research
2011 American Skin Association Achievement Award for Psoriasis
2011 Perelman School of Medicine Bowman New Investigator Research Award
2013 Elected Member, American Society for Clinical Investigation
2013 The Odland Lecturer, University of Washington, Seattle Washington
2013 Elected member, American Dermatological Association
2014 The Eugene Farber Lecturer, Society for Investigative Dermatology
2015 Epidemiology Teaching Award, University of Pennsylvania Perelman School of Medicine

C. Contribution to Science

1. *Demonstration of increased cardiovascular risk, diabetes, and kidney disease in patients with psoriasis independent of traditional risk factors*. In 2006 we were the first to demonstrate that psoriasis is an independent risk factor myocardial infarction using modern epidemiological methods. We have since gone on to demonstrate an increased risk of stroke, CV mortality, diabetes, and chronic kidney disease independent of traditional risk factors, culminating in a 5 year reduction in life expectancy for patients with moderate to severe psoriasis. These studies launched a new field of investigation of psoriasis associated co-morbidities and evaluation of psoriasis as a systemic disease. The findings have changed clinical practice with guidelines being issued addressing the need to identify co-morbidities in psoriasis patients. Dr. Gelfand continues to investigate this area as the PI of the first and currently only prospective population-based cohort of approximately 9000 psoriasis patients in which severity has been determined by measurements of body surface area affected (called the incident health outcomes and psoriasis events (iHOPE) study).
    a. Gelfand, JM, Neimann, AL, Shin, DB, Wang, X, Margolis, DJ, and Troxel, AB. The risk of myocardial infarction in patients with psoriasis. *Journal of the American Medical Association.* 2006;296:1735-41.

b. Mehta, NN, Azfar, RS, Shin, DB, Neimann, AL, Troxel, AB, and Gelfand, JM. Patients with severe psoriasis are at increased risk of cardiovascular mortality: A cohort study using the General Practice Research Database. *European Heart Journal* 2010;31:1000-6 (PMC 2894736)
c. Wan J, Wang S, Haynes K, Denburg MR, Shin DB, Gelfand JM. Risk of moderate of advanced kidney disease in patients with psoriasis: population based cohort study. *BMJ* 2013 Oct 15;347:f5961 (PMC3805477)
d. Ogdie A, Yu Y, Haynes K, Love TJ, Maliha S, Jiang Y, Troxel AB, Hennessy S, Kimmel SE, Margolis DJ, Choi H, Mehta NN, Gelfand JM. Risk of Major cardiovascular events in patients with psoriatic arthritis, psoriasis and rheumatoid arthritis: a population-based cohort study. *Annals of Rheumatic Disease* 2015; 74: 326-32 (PMC ID in progress)

2. *Demonstration of impaired HDL function and increased aortic vascular inflammation in patients with psoriasis compared to patients without psoriasis.* Working in collaboration with Dr. Nehal Mehta, Dr. Gelfand and his team have shown that psoriasis is associated with increased aortic inflammation (measured by FDG-PET/CT) equivalent to a decade of aging and impaired HDL function as measured by cholesterol efflux capacity. Both vascular inflammation and HDL function have been shown to be risk factors for major cardiovascular events and may be part of the mechanism by which psoriasis confers CV risk. These studies formed the basis for multiple ongoing clinical trials (called Vascular Inflammation in Psoriasis) led by Dr Gelfand evaluating the impact of adalimumab, phototherapy, and ustekinumab on vascular inflammation and lipid metabolism (NCT01553058, NCT01866592, and NCT02187172).
    a. Mehta NN, Yu Y, Saboury B, Foroughi N, Krishnamoorthy P, Raper A, Baer A, Antigua J, Van Voorhees AS, Torigian DA, Alavi A, Gelfand JM. Systemic and vascular inflammation in patients with moderate to severe psoriasis as measured by [18F]-fluorodeoxyglucose positron emission tomography-computed tomography (FDG-PET/CT): a pilot study. *Arch Dermatol*. 2011;147:1031-9 (PMC3158301)
    b. Mehta NN, Li R, Krishnamoorthy P, Yu Y, Farver W, Rodrigues A, Raper A, Wilcox M, Baer A, DerOhannesian S, Wolfe M, Reilly MP, Rader DJ, VanVoorhees A, Gelfand JM. Abnormal lipoprotein particles and cholesterol efflux capacity in patients with psoriasis. *Atherosclerosis*. 2012;224:218-21 (PMC3693845)

3. *Determination of the comparative effectiveness of treatments used for moderate to severe psoriasis.* Evaluating the comparative effectiveness of treatments for moderate to severe psoriasis is a national priority (IOM 2009 Initial national priorities for comparative effectiveness research). Dr. Gelfand created the Dermatology Clinical Effectiveness Research Network (DCERN, www.dermcern.org) in 2010 and conducted a multi-center prospective evaluation of 1800 consecutively seen patients with moderate to severe psoriasis in the routine clinical practice setting. This work demonstrated that biologic treatments are more effective than traditional medications such as methotrexate but that patients are more likely to discontinue these biologics over time due to loss of efficacy. Moreover, we demonstrated that the response rates to biologics in clinical practice are substantially lower than that reported in clinical trials, demonstrating the need for more effective treatments. The studies impacted clinical practice as the American Academy of Dermatology has relied on our data to set performance standards for the treatment of moderate to severe psoriasis.
    a. Gelfand JM, Wan J, Callis Duffin, K, Krueger GG, Kalb RE, Weisman JD, Sperber BR, Stierstorfer MB, Brod BA, Schleicher SM, Bebo BF, Troxel AB, Shin DB, Steinemann JM, Goldfarb J, Yeung H, and Van Voorhees AS. Comparative Effectiveness of Commonly Used Systemic Treatments or Phototherapy for Moderate to Severe Plaque Psoriasis in the Clinical Practice Setting. *Archives of Dermatology* 2012;148(4):487-94 (PMC3476943)
    b. Yeung H, Wan J, Van Voorhees AS, Callis Duffin K, Krueger GG, Kalb RE, Weisman JD, Sperber BR, Brod BA, Schleicher SM, Bebo BF Jr, Shin DB, Troxel AB, Gelfand JM. Patient-reported reasons for the discontinuation of commonly used treatments for moderate to severe psoriasis. *J Am Acad Dermatol.* 2013;68(1):64-72. (PMC3488143)
    c. Callis Duffin K, Yeung H, Takeshita J, Krueger GG, Robertson AD, Troxel AB, Shin DB, Van Voorhees AS, Gelfand JM Patient satisfaction with treatments for moderate-to-severe plaque psoriasis in clinical practice. *Br J Dermatol*. 2014;170(3):672-80. (PMC4302409)

4. *Validation of electronic medical record data for studying psoriasis and psoriatic arthritis.* We have conducted a series of careful studies demonstrating that electronic codes of psoriasis and psoriatic arthritis reflect the true clinical diagnosis based on the gold standard of querying of the treating physician in two population-based, electronic medical records systems (General Practice Research Database and The Health Improvement Network). These studies have allowed these systems to be used extensively for the study of psoriasis by numerous investigators worldwide.
    a. Gelfand JM, Weinstein R, Porter SB, Neimann AL, Berlin JA, Margolis DJ. Prevalence and treatment of psoriasis in the United Kingdom: a population-based study. *Arch Dermatol*. 2005 Dec;141(12):1537-41.
    b. Seminara, N, Abuabara, K, Langan, S, Shin, DB, Kimmel S, Margolis, DJ, Troxel, AB, and Gelfand, JM. Validity of The Health Improvement Network (THIN) for the study of psoriasis. *British Journal of Dermatology* 2011;164(3):602-9 (PMC3064479)
    c. Ogdie A, Alehashemi S, Love TJ, Jiang Y, Haynes K, Hennessy S, Choi H, Gelfand JM. Validity of psoriatic arthritis and capture of disease modifying antirheumatic drugs in the health improvement network. *Pharmacoepidemiol Drug Saf*. 2014 Sep;23(9):918-22. (PMC4149813)

5. *Training of the next generation of clinical scientists.* Dr. Gelfand is a dedicated mentor with over 20 MD and PhDs having spent at least one full year under his mentorship, 10 of whom have received a Master's degree in clinical epidemiology. His trainees have received numerous grants from the National Psoriasis Foundation, the National Institute for Health Research (United Kingdom), the NIH (F32, T32, K23, and a Lasker Award), the Dermatology Foundation and the American College of Rheumatology. Examples include Andrea Neimann, MD MSCE (Assistant Professor of Dermatology and Director of Dermatopharmacology, NYU), Anokhi Jambusaria MD MSCE (Assistant Professor of Clinical Dermatology Mayo Clinic), Erica Dommasch, MD (Instructor, Dermatology, Harvard), Katrina Abuabara MD MHA (Instructor, Dermatology PENN), Alexis Ogdie MD MSCE (Assistant Professor of Medicine (Rheumatology, PENN), Daniel Shin MS (PhD candidate in biostatistics, PENN), Joy Wan, MD, T32 recipient and dermatology resident PENN), Nehal Mehta MD MSCE (Section Chief, Inflammation and Atherosclerosis NHLBI), Sinead Langan MB BCh MRCP MSc (Clinical Scientist, London School of Tropical Hygiene), Junko Takeshita MD PhD (Instructor, PENN), Zelma Chiesa MD (Instructor Penn), Anita Kumar MD MSCE (Instructor of Medicine- Oncology, PENN), and Megan Noe MD MPH (Instructor, Dermatology PENN).

Complete List of Published Work in MyBibliography (Over 100 publications):
http://www.ncbi.nlm.nih.gov/sites/myncbi/joel.gelfand.1/bibliography/41145910/public/?sort=date&direction=ascending

D. Research Support

Ongoing

K24AR064310 (PI Gelfand) 4/1/2013-3/31/2018
NIH/NIAMS
Psoriasis and the risk of diabetes
The goal of this project is to evaluate the risk of diabetes and influence of psoriasis treatment on novel biomarkers of diabetes risk in clinic-based, population-based, and randomized controlled trial-based cohorts of psoriasis patients. Additionally, the PI will mentor junior scientists towards careers in independent research.

R01- HL111293 (PI Gelfand) 2/8/12-1/31/17
NIH/NHLBI
A trial to determine the effect of psoriasis treatment on cardiometabolic disease
The goal of this project is to determine the impact of adalimumab, UVB phototherapy and placebo on vascular inflammation and lipid metabolism. AKA Vascular Inflammation in Psoriasis (VIP) trial

R01CA165836 (Seykora PI, Gelfand Co-I) 8/1/12-7/31/17
The role of FYN and SRCASM in UVB-induced cutaneous neoplasia.
The major goal of this project is to use mouse models and engineered human skin to determine how skin cancer develops and identify chemo-preventative agents.

Industry Grant Abbvie (PI Gelfand) 2/1/12-1/31/18
The Vascular Inflammation in Psoriasis Trial Extension Study
The major goal of this project is to determine the impact of up to one year of treatment of psoriasis with adalimumab, a TNF inhibitor, on vascular inflammation and lipid metabolism.

Industry Grant Jansen (PI Gelfand) 7/1/14-6/30/17
The Vascular Inflammation in Psoriasis Ustekinumab Trial
The goal of this project is to determine the impact of ustekinumab, an IL12/13 inhibitor, and placebo on vascular inflammation and lipid metabolism.

Industry Grant Pfizer (PI Gelfand) 7/1/14-12/31/16
The risk of major medical comorbidities in patients with psoriasis.
The major goal of this project is to evaluate cancer, liver, cardiovascular, and infectious outcomes in a large cohort of psoriasis patients using The Health Improvement Network in the United Kingdom and the Incident Health Outcomes and Psoriasis Events study (iHOPE)

Psoriasis Fellowship Grant (PI Gelfand) 07/01/14-06/30/15
National Psoriasis Foundation
The major goal of this fellowship is for the PI to train dermatologists to conduct research in psoriasis. This grant will be used to support in part the post-doctoral fellowship of Zelma Chiesa MD.

Completed (Abbreviated)
R01-HL089744 (PI Gelfand) 3/1/09-2/28/15
NIH/NHLBI The Risk of Myocardial Infarction in Patients with Psoriasis
The goal of this project is to determine the risk of MI and stroke in patients with psoriasis. AKA the Incident Health Outcomes and Psoriasis Events study (iHOPE)
R01FD004092 (Multi-PD Rook PI Gelfand PI) 9/1/12-9/31/15
Phase I study of resiquimod gel therapy for cutaneous T cell lymphoma
The major gold of this study is to determine the safety, tolerability, and preliminary evidence of efficacy of resiquimod gel for cutaneous T cell lymphoma.
R01 CA122569 (Rook-PI, Gelfand-Co-PI) 9/1/08-8/31/13
NIH/NCI "Toll Receptor Ligand Therapy in Cutaneous T-Cell Lymphoma" To characterize the safety, efficacy, immune and antitumor effects of a TLR 7/8 agonist in the imidazoquinolone family when used for CTCL
RC1 AR058204 (Gelfand) 09/24/09-08/31/12
NIH/NIAMS: „Comparative effectiveness of biologics for psoriasis". The major goal of this project is to establish a network (Dermatology Clinical Effectiveness Research Network – DCERN) to conduct comparative effectiveness studies in psoriasis
RC1-AI086107 (subcontract to Gelfand, Herrington PI) 09/28/09-08/31/11
NIH/NIAID: "Kaiser Permanente Autoimmune Disease Registry". The goal of this study is to develop a registry of patients with auto-immune and inflammatory diseases for comparative effectiveness studies.
F32AR056799 (Azfar) NIH/NIAMS 9/1/2008-8/31/2010
"Risk of diabetes and poor diabetic control in patients with psoriasis" The goal of this project is to determine the risk of diabetes in patients with psoriasis and to determine if, among patients with diabetes, psoriasis is associated with poor glucose control. Role: Co-sponsor
NIH/NIAMS K23 AR 051125-01 4/1/04-3/31/09
"Investigating the risk of lymphoma in psoriasis patients" The goal of this proposal is to validate the General Practice Research Database for identifying psoriasis patients and to determine the risk of lymphoma in psoriasis patients in the GPRD population. Role: PI
NIH/ P20RR020741 12/1/07-8/31/08
"Impact of narrow band phototherapy on cutaneous gene expression in patients with psoriasis: A pilot study
The goal of this study is to determine which genes are up or down regulated during treatment of psoriasis with phototherapy. Role: Pilot PI
NIH/NIAMS F32 AR48100 (Gelfand) 7/1/01-6/30/03
"Surrogate markers of venous ulcer healing" The goal of this study was to identify clinical predictors of wound healing. Role: PI, sponsor David Margolis