

## Curriculum Vitae, Harvard Medical School Format

**Date Prepared:** July, 2019

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### Education:

| Year | Degrees<br>(Honors)       | Fields of Study<br>(Thesis advisor for doctoral<br>research degrees)                     | Institution            |
|------|---------------------------|--|------------------------|
| 2001 | A.B.<br>Magna cum Laude   | Biology modified with<br>Psychological and Brain<br>Sciences (major); English<br>(minor) | Dartmouth College      |
| 2006 | D.Phil.<br>Rhodes scholar | Educational Studies<br>(Supervisor: Geoffrey Walford)                                    | Oxford University      |
| 2008 | M.D.                      | Medicine   | Harvard Medical School |

### Postdoctoral Training:

| Month/Year(s) | Title    | Specialty/Discipline<br>(Lab PI for postdoctoral<br>research) | Institution                                |
|---------------|----------|---|--|
| 07/08-07/09   | Intern   | Internal Medicine   | University of California,<br>San Francisco |
| 07/09-07/12   | Resident | Neurology   | University of California,<br>San Francisco |
| 07/12-07/13   | Fellow   | Neurohospitalist Medicine                                     | University of California,<br>San Francisco |

### Faculty Academic Appointments:

| Month/Year(s) | Academic Title                  | Department                                   | Academic Institution                        |
|---------------|---------------------------------|--|---|
| 07/13-07/16   | Assistant Professor             | Neurology                                    | Washington University<br>School of Medicine |
| 07/13-07/16   | Assistant Professor             | George Warren Brown<br>School of Social Work | Washington University<br>in St. Louis       |
| 07/16-present | Assistant Professor             | Neurology                                    | Harvard Medical School                      |
| 07/16-present | Visiting Assistant<br>Professor | Computer and Information<br>Science          | Northeastern University                     |

### Appointments at Hospitals/Affiliated Institutions:

| Month/Year(s) | Position Title        | Department (Division, if applicable)                          | Institution                     |
|---------------|-----------------------|---|---------------------------------|
| 07/13-07/16   | Attending Neurologist | Neurology<br>General and Stroke                               | Barnes-Jewish Hospital          |
| 07/16-present | Associate Neurologist | Hospital Neurology, Stroke<br>and Cerebrovascular<br>Diseases | Brigham and Women's<br>Hospital |

### Major Administrative Leadership Positions:

#### Local

| Year(s)      | Position Title   | Institution (note if specific department) |
|--------------|--|---|
| 2014         | Chair and Conference Organizer, Washington University Landau Speaker Committee | Washington University School of Medicine  |
| 2016-present | Secretary of Division Meetings, Division of Neurohospitalist Medicine          | Brigham and Women's Hospital              |
| 2017-present | Co-founder, Neuroscience Internal Brigham Study Section (NIBSS)                | Brigham and Women's Hospital              |

#### National

| Year(s)      | Position Title                                       | Institution (note if specific department)              |
|--------------|--|--|
| 2011-2013    | Representative, Neurology Residency Review Committee | American Council of Graduate Medical Education (ACGME) |
| 2012         | Representative, Neurology Milestones Committee       | American Council of Graduate Medical Education (ACGME) |
| 2019-present | Delegate, National Diversity Leadership              | American Heart Association                             |

#### International

| Year(s)                 | Position Title   | Institution (note if specific department) |
|-------------------------|--|---|
| 2012-2017, 2019-present | Member, Canadian Western Region Rhodes Selection Committee | Rhodes Scholarship Trust                  |

### Committee Service:

#### Local

| Year(s) of Membership | Name of Committee                                      | Institution/Organization  |
|-----------------------|--|---|
|                       | Dates of Role(s)                                       | Title of Role(s)  |
| 2002-2003             | Harvard Search Committee for Dean of Medical Education | Harvard Medical School  |
| 2011-2012             | 2002-2003<br>Neurology Education Committee             | Student Representative<br>University of California, San Francisco   |
| 2013-2014             | 2011-2012<br>Neurology Medical Students Committee      | Resident Representative<br>Washington University School of Medicine |
| 2014-2016             | 2013-2014<br>Neurology Residents as Teachers Committee | Faculty Representative<br>Washington University School of Medicine  |
|                       | 2014-2016  | Faculty Representative  |

|              |   |   |
|--------------|---|---|
| 2016-present | Hospital Neurology Division               | Brigham and Women's Hospital              |
| 2018-present | Partners Human Research Committees (IRBs) | Secretary<br>Brigham and Women's Hospital |
|              | 2018-present                              | Faculty Member                            |

### Regional

| Year(s) of Membership | Name of Committee                             | Institution/Organization   |
|-----------------------|---|----------------------------|
|                       | Dates of Role(s)                              | Title of Role(s)           |
| 2014                  | St. Louis Harvard College Interview Committee | Harvard College            |
|                       | 2014  | Regional Interviewer       |
| 2017-present          | Partners Stroke Quality Leaders Committee     | Partners Healthcare        |
|                       | 2017-present                                  | BWH Faculty Representative |

### National and International

| Year(s) of Membership | Name of Committee                                  | Institution/Organization                               |
|-----------------------|--|--|
|                       | Dates of Role(s)                                   | Title of Role(s)                                       |
| 2011-2013             | Residency Review Committee                         | American Council of Graduate Medical Education (ACGME) |
|                       | 2011-2013  | Committee Member                                       |
| 2012                  | Neurology Milestones Committee                     | American Council of Graduate Medical Education (ACGME) |
|                       | 2012   | Committee Member                                       |
| 2012-2017             | Canadian Western Region Rhodes Selection Committee | Rhodes Scholarship Trust                               |
|                       | 2012-2019  | Committee Member                                       |
| 2019-present          | National Diversity Leadership                      | American Heart Association                             |
|                       | 2019   | Committee Member                                       |

### Professional Societies:

| Year(s) of Membership | Society Name   |   |
|-----------------------|--|---|
|                       | Dates of Role(s)   | Title of Role(s)                        |
| 2009-present          | <b>American Academy of Neurology</b>                     |   |
|                       | 2009-present   | Member, Neurohospitalist section        |
|                       | 2014-2018  | Medical Education Research Committee    |
| 2011-2013             | <b>California Neurology Society</b>                      |   |
|                       | 2011-2013  | State Resident Representative           |
| 2013-present          | <b>American Heart Association</b>                        |   |
|                       | 2013-present   | Member, Stroke Association              |
|                       | 2019-present   | Delegate, National Diversity Leadership |
| 2013-present          | <b>Neurohospitalist Society</b>                          | Member                                  |
| 2013-present          | <b>American Neurological Association</b>                 | Member                                  |
| 2016-present          | <b>International Network for Social Network Analysis</b> | Member                                  |

**Grant Review Activities:**

| Year(s) of Membership | Name of Committee                                  | Institution/Organization      |
|-----------------------|--|-------------------------------|
|                       | Dates of Role(s)                                   | Title of Role(s)              |
| 2014-2018             | Medical Education Research Grants Review Committee | American Academy of Neurology |
|                       | 2014-2018  | Member                        |

**Editorial Activities:****Ad hoc Reviewer:**

Journals for which you serve as a reviewer

New England Journal of Medicine  
Circulation  
Neurology  
JAMA Neurology  
Neurocritical Care  
Neurohospitalist  
Journal of Stroke and Cerebrovascular Disease  
Archives of Physical Medicine and Rehabilitation  
Journal of Medical Case Reports  
Oxford University Press  
Ethnography and Education

**Other Editorial Roles:**

| Year(s)      | Role                           | Journal Name                               |
|--------------|--------------------------------|--|
| 1999-2001    | Co-Founder and Editor-in-chief | Dartmouth Undergraduate Journal of Science |
| 2014-present | Editorial board member         | The Neurohospitalist                       |

**Honors and Prizes:**

| Year | Name of Honor/Prize   | Awarding Organization      | Achievement for which awarded (if unclear from award title) |
|------|---|----------------------------|---|
| 1999 | Ernest T. Saeger 1914 Scholarship                           | Dartmouth College          | Academic scholarship  |
| 2000 | Barry Goldwater National Scholarship                        | Barry Goldwater Foundation | Academic scholarship  |
| 2001 | Presidential Scholar  | Dartmouth College          | Academic scholarship for research                           |
| 2001 | Christopher G. Reed Biologist Award                         | Dartmouth College          | Academic scholarship for outstanding biology research       |
| 2001 | Raw W. Smith Award for Community Service                    | Dartmouth College          | Outstanding community service                               |
| 2001 | Alfred K. Priest Fellowship for study at Harvard University | Dartmouth College          | Academic scholarship  |
| 2003 | Rhodes Scholarship, Canada                                  | Rhodes Scholarship Trust   | Academic scholarship  |

|            |   |  |                            |
|------------|---|--|----------------------------|
| 2008       | Rose Seegal Prize for best paper on community and medicine  | Harvard Medical School                       |                            |
| 2011       | Annual Meeting Resident Scholarship                         | American Academy of Neurology                |                            |
| 2011       | Clinical Teaching Excellence Award for Cherished Housestaff | University of California, San Francisco      |                            |
| 2012       | Alpha Omega Alpha   | AQA, University of California, San Francisco | Honor society in medicine  |
| 2014, 2015 | Neurology Clerkship Student Teaching Award Honor Roll       | Washington University School of Medicine     |                            |
| 2015       | Excellence in Skills Lab Teaching Award                     | Washington University in St. Louis           |                            |
| 2015       | Best Doctors in America                                     | Best Doctors, Inc.                           | Excellence in patient care |
| 2016       | Best Doctors in America                                     | Best Doctors, Inc.                           | Excellence in patient care |

## **Report of Funded and Unfunded Projects**

### **Funding Information:**

#### **Past**

| Year(s)   | Grant title<br>Grant type and number<br>Role of Project<br>Description of the major goals  |
|-----------|--|
| 1998      | Visuospatial processing in Parkinson's Disease<br>First Year Summer Research Grant, Dartmouth College<br>PI (\$5000)<br>The goal was to use cognitive neuroscience methods to show the impact of Parkinson's disease on higher visual processing pathways compared to normal controls.                           |
| 2002      | A culturally appropriate peer education model for Vietnam<br>Paul Dudley White/Andrew Sellard Travelling Fellowship, Harvard Medical School<br>PI (\$5000 and travel costs)<br>I worked with the Center for Disease Control Field Station in Hanoi to research and develop a Vietnamese model of peer education. |
| 2003-2006 | Peer learning among a group of heroin addicts in India<br>The Rhodes Trust, Oxford University<br>PI (\$150,000)<br>This was an ethnographic study to examine the range of peer learning practices such as poetry and street medicine engaged by heroin addicts in New Delhi.                                     |
| 2008      | The culture of neurology in a hospital in Beijing: An ethnographic study<br>Paul Dudley White/Andrew Sellard Travelling Fellowship, Harvard Medical School<br>PI (\$5000 and travel costs)<br>I studied the diagnostic and management methods of neurologists at Capital Medical University in Beijing.          |
| 2010-2011 | Ethnography of the clinical practice of neurology<br>Flexible Residency in Neurology, University of California, San Francisco<br>PI (\$35,000 salary support)  |

I studied the diagnostic process of experienced neurologists in Northern California.

- 2014-2016 Social networks and stroke recovery  
AHA Mentored Clinical & Population Research Award 14CRP20080001  
PI (\$154,000)  
The aims are to evaluate the change of social networks after ischemic stroke and assess whether initial network characteristics influence recovery outcomes.
- 2015-2016 Improving stroke recovery using body worn cameras  
Clinical and Translational Research Funding Program, Barnes-Jewish Hospital  
PI (\$50,000)  
This grant aims to determine the accuracy of body worn camera images to capture social interactions when used by stroke survivors.

## Current

| Year(s)   | Grant title<br>Grant type and number<br>Role of Project (if PI or site PI, total direct costs)<br>Description of the major goals   |
|-----------|--|
| 2015-2020 | Impact of Social Network Structure on Stroke Recovery<br>NIH/K23 K23HD083489<br><b>Principal Investigator</b> (\$619,645)<br>The major goals are to train in clinical research, determine the evolution of social networks after stroke, and assess the impact of networks on patient reported recovery outcomes.  |
| 2018-2020 | Study of social networks and their inter-relations with diet, physical activity, and obesity.<br>Pilot and Feasibility Award, Boston Nutrition Obesity Research Center<br><b>Principal Investigator</b> (\$50,000)<br>The goal of this research study is to examine the interplay of social networks, physical activity, and diet in relation to obesity.  |
| 2018-2019 | Social networks of football players: Association with functional, cardiac, and cognitive outcomes.<br>Football Players Health Study, Harvard University<br><b>Principal Investigator</b> (\$150,000)<br>The goal of this research study is to assess the social network characteristics of retired professional football players, and the relationship to functional, cardiac, and cognitive outcomes. |

## Pending

| Year(s)   | Grant title<br>Grant type and number<br>Role of Project (if PI or site PI, total direct costs)<br>Description of the major goals  |
|-----------|---|
| 2019-2024 | SocialBit: Establishing the accuracy of a wearable sensor to detect social interactions after stroke<br>NIH/R01 R01 HD099176-01 – <i>scored at last review, pending council decision.</i><br><b>Principal Investigator</b> (\$2,388,765)<br>The major goal is to determine the accuracy of a wearable sensor to detect social interactions after stroke and the relationship with measures of social isolation. |

## Report of Local Teaching and Training

**Teaching of Students in Courses:**

| Year(s)    | Course Title<br>Type of student/audience   | Location<br>Level of Effort  |
|------------|--|--|
| 2002-2003  | Student teacher training elective<br>1 <sup>st</sup> and 2 <sup>nd</sup> year medical students | Harvard Medical School<br>3 hours per week for 8 weeks             |
| 2003-2006  | Neuroscience tutorial<br>1 <sup>st</sup> -3 <sup>rd</sup> year medical students                | Oxford University<br>15 hours per week for 16 weeks                |
| 2015, 2016 | Skills lab: Qualitative data analysis<br>Students in Masters of Public Health                  | Washington University in St. Louis<br>15 hours over 3 days         |
| 2015       | Social Network Analysis<br>Graduate students in Public Health                                  | Washington University in St. Louis<br>3 hours per week for 8 weeks |
| 2017-2019  | Management S-4150: Leadership<br>Students at Harvard Summer School                             | Harvard Summer School<br>3 hours guest lecturer                    |
| 2019       | Neurology Clerkship, Stroke<br>2 <sup>nd</sup> and 3 <sup>rd</sup> year medical students       | Harvard Medical School<br>1 hour guest lecturer                    |

**Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs):**

| Year(s)      | Title<br>Type of student/audience                                 | Location<br>Level of Effort                                     |
|--------------|---|---|
| 2011         | Stroke: A Clinical Approach<br>Emergency medicine residents       | University California, San Francisco<br>1 hour/week x 4 weeks   |
| 2014-        | Neurology morning report<br>Neurology residents                   | Washington University School of Medicine<br>45 minutes per week |
| 2016-        | Dhand Lab meetings<br>Research fellows                            | Brigham and Women's Hospital<br>1 hour per week plus 1:1 time   |
| 2017         | Stroke for Internists<br>PGY 1-3 Internal Medicine Residents      | Brigham and Women's Hospital, Medicine<br>1 hour                |
| 2017-present | Social networks and stroke outcomes<br>PGY2-4 Neurology Residents | Massachusetts General Hospital, Neurology<br>1 hour             |

**Clinical Supervisory and Training Responsibilities:**

| Year(s)      | Type of responsibility  | Level of Effort                       |
|--------------|---|---------------------------------------|
| 2013-2016    | Neurology Inpatient Attending<br>Washington University School of Medicine       | 10-12 weeks per year                  |
| 2016-present | Neurology Inpatient Attending<br>Brigham and Women's Hospital                   | 10 weeks per year                     |
| 2017-present | Preceptor, HMS MS3 students in Stroke<br>Clinic<br>Brigham and Women's Hospital | One half session per every other week |

**Laboratory and Other Research Supervisory and Training Responsibilities:**

| Year(s) | Type of responsibility   | Level of Effort    |
|---------|--|--------------------|
| 2014-   | Principal Investigator, Dhand Lab.<br>Mentoring trainees in research thinking,<br>data science techniques, and presentation<br>skills. | 10 hours per week. |

**Formally Supervised Trainees:**

| Year(s) | Names and degrees/ Current position |
|---------|-------------------------------------|
|---------|-------------------------------------|

|              | Describe the type of supervision and the specific accomplishments of your trainee that occurred as a direct result of your supervision (maximum one sentence)   |
|--------------|---|
| 2014-2016    | Michael Tsiaklides, B.A., Clinical Research Coordinator.<br>Mentor when he was a research assistant.<br>Two papers on social networks in neurology, one published in <i>Nature Communications</i> .   |
| 2015-2016    | Ali Dalton, B.A. Software Engineer at Perchwell.<br>Mentor when she was a research assistant.<br>One paper on body cameras and stroke published in <i>J Stroke and Cerebrov Dis</i> .   |
| 2015-2018    | Rupa Patel, M.D., Assistant Professor at Washington University School of Medicine.<br>Mentor when she was an Assistant Professor.<br>One paper on social networks in men who have sex with men in <i>LGBT Health</i> .  |
| 2015-2018    | Beth Prusaczyk, Ph.D., Assistant Professor at Washington University in St. Louis.<br>Mentor when she was a graduate student and Postdoctoral Research Fellow.<br>One paper on interprofessional hospital networks in <i>Journal of Interprofessional Care</i> . |
| 2016-present | Praveen Kumar, Ph.D., Assistant Professor at Boston College.<br>Mentor when he was a graduate student and Assistant Professor.<br>One paper on social networks for sustained use of clean cooking published in <i>Archives of Public Health</i> .               |
| 2016-2017    | Jesse M Thon, M.D., Fellow in Advanced General, Autoimmune, Infectious Disease Neurology, Massachusetts General Hospital.<br>Mentor when he was a Neurology Resident at Partners Neurology/HMS.<br>One paper on clival metastasis published in BMJ Case Report. |
| 2016-2017    | Simone Renault, B.A. Medical student at UCLA.<br>Mentor when she was a research assistant.<br>One paper on social networks in ALS published in <i>Annals of Neurology</i> .   |
| 2017-2018    | Angela Kim, B.A. Medical student at SUNY Downstate.<br>Mentor when she was a research assistant.<br>One paper on social networks and stroke recovery under review.  |
| 2017-present | Karin Li, B.A., Research Assistant.<br>Mentor when she was a research assistant.<br>One paper on social networks and stroke recovery under review.  |
| 2017-present | Sam Snider, M.D., Neurocritical Care Fellow, Partners Neurology/HMS.<br>Mentor on a data science approach to understand patient deteriorations in hospital. One paper under development.  |
| 2018-present | Abby Halm, B.A., Research Assistant<br>Mentor when she was a research assistant.<br>One paper on social networks and stroke systems of care under review.   |
| 2018-present | Liam McCafferty, B.A., Research Assistant.<br>Mentor when he was a research assistant.<br>One paper on social network and stroke recovery under review.   |
| 2018-present | Lien Quach, PhD, MPH, MD, Research Scientist, Massachusetts Veterans Epidemiology, VA Boston Healthcare System.<br>Mentor on her career development grant focusing on learning social network methods.  |
| 2018-present | Morgan Prust, M.D., Neurology Resident, Partners Neurology/HMS.<br>Mentor on a project comparing social network metrics in stroke patients. One paper under development.  |

#### Local Invited Presentations:

| Year(s) | Title of presentation/ Type of presentation<br>Department and Institution where presented (Sponsor, if any) |
|---------|---|
| 2006    | Using learning theory to understand access in ethnographic research   |



Education, Oxford

2009 Emergency Medical Services-Bases Community Stroke Education: Study Review  
Neurology, UCSF

2009 Carotid and vertebral artery transluminal angioplasty study: Study Review  
Neurology, UCSF

2009 Maintaining ethnographic practices during medical residency  
Medical Anthropology, UCSF

2010 History of the neurological examination  
Internal Medicine, UCSF

2010 Case presentation for Dr. Martin Samuels  
Neurology, UCSF

2010 Localization theory  
Neurology, UCSF

2011 39 year old man with right facial droop  
Neurology, UCSF

2011 Status epilepticus  
Neurology, UCSF

2011 Stroke: A Clinical Approach  
Neurology, UCSF

2011 The pathophysiology of spasticity  
Neurology, UCSF

2011 Neurology of the tongue  
Neurology, UCSF

2012 Observations on the practice of diagnosis in neurology  
Neurology, UCSF

2012 Inherited Muscle Diseases of Childhood  
Neurology, UCSF

2012 NMDA Receptor Limbic Encephalitis  
Neurology, UCSF

2012 Functional disorders in Neurology  
Neurology, UCSF

2013 Diagnostic practice of community neurologists  
Neurology, UCSF

2013 The Neurology of Itch  
Neurology, UCSF

2013 Grand rounds case discussant  
Neurology, WUSM

2014 International Stroke Conference 2014: Thrombosis after pregnancy  
Neurology, WUSM

2014- Evidence-based approach to risk factor management in stroke  
Neurology, WUSM

2015 What did I learn at ISC? Disability trajectories  
Neurology, WUSM

2015 Evidence-based practice in Inpatient Neurology  
Neurology, WUSM

2015 Neurological emergencies for Internists  
Internal Medicine, WUSM

2015 Social networks and hospital arrival after ischemic stroke  
Neurology, WUSM

2015 Neurology Grand Rounds: Social networks and stroke outcomes  
Neurology, WUSM

2016 International Stroke Conference 2016 Review

|      |  |
|------|--|
| 2016 | Neurology, WUSM<br>Neurological Emergencies for Rehabilitation Physicians<br>Rehabilitation Medicine, WUSM |
| 2016 | Hospital Networks<br>Center for Complex Network Research, Northeastern                                     |
| 2016 | Social Networks and Health Outcomes<br>Channing Center of Network Medicine, BWH                            |
| 2017 | Social Networks and Neurological Outcomes<br>Neurology, BWH  |
| 2017 | Social Networks and Stroke Outcomes<br>Stroke Conference, MGH  |
| 2017 | Social Networks and Stroke Outcomes<br>Stroke Quality Leaders Conference, Partners                         |
| 2017 | Stroke for Internists<br>Medical Residents Conference, BWH   |
| 2017 | Social Networks and Stroke Outcomes<br>Neurology for the Non-Neurologist, Kennebunkport, Maine             |
| 2017 | Social Networks and Stroke Recovery<br>Harvard 25 <sup>th</sup> Annual Update in Neurology, BWH            |
| 2017 | Social Networks and Stroke Recovery<br>Stroke Camp, BWH  |
| 2018 | Social Networks and Stroke Recovery<br>Neurorecovery Group, MGH  |
| 2018 | Social Networks and Stroke Recovery<br>Stroke Camp, BWH  |
| 2018 | Networks Science and Stroke Outcomes<br>Stroke Conference, MGH   |
| 2018 | Hospital networks and the foodome<br>Network Science Institute, Northeastern                               |
| 2018 | Personal Network Study<br>Football Players Health Study, HMS   |

### **Report of Regional, National and International Invited Teaching and Presentations**

No presentations below were sponsored by outside entities.

#### **Regional**

| Year(s) | Title of presentation or name of course/ Type of presentation/role(s) (note if presentation the result of a selected abstract)<br>Location (Sponsor, if any) |
|---------|--|
| 2012    | Recent Advances in Neurology: Clinicopathological Case Conference<br>San Francisco, CA   |
| 2017    | Social Networks, Course Lecture at Harvard Summer School   |
| 2018    | Natural Intelligence: Social Networks<br>Boston Society of Neurology and Neurosurgery  |
| 2018    | Social Networks, Course Lecture at Harvard Summer School   |
| 2018    | A Networked Life, Course Lecture at Harvard Summer School  |

#### **National**

| Year(s) | Title of presentation or name of course/ Type of presentation/role(s) (note if presentation the result of a selected abstract)<br>Location (Sponsor, if any) |
|---------|--|
| 2014    | Falls and their prevention   |

|      |  |
|------|--|
| 2014 | Neurohospitalist Meeting, Denver, CO<br>ICU/Stroke Research Seminar: Examining patients' social networks to improve stroke recovery<br>Columbia University, New York, NY       |
| 2015 | Patients' social networks influence timing of hospital arrival after stroke<br>Center for Complex Network Research, Northeastern University                                    |
| 2015 | <b>Neurology Grand Rounds:</b> Social networks and stroke outcomes<br>Washington University School of Medicine, St. Louis, MO  |
| 2016 | Understanding hospital networks to improve patient outcomes and reduce healthcare costs<br>Effective Use of the R Language (EARL) Conference, Boston, MA.                      |
| 2017 | Webinar: Diagnostic Process in Neurology<br>Society to Improve Diagnosis in Medicine   |
| 2017 | <b>Neurology Grand Rounds:</b> Social Networks and Neurological Outcomes<br>George Washington University, Washington, DC.  |
| 2017 | <b>Neurology Grand Rounds:</b> Social Networks and Stroke Outcomes<br>University of Pittsburgh Medical Center, Pittsburgh, PA  |
| 2019 | ICU/Stroke Research Seminar: Social Networks and Stroke Outcomes<br>Yale University, New Haven, CT   |
| 2019 | <b>Neurology Grand Rounds:</b> Social Networks and Stroke: Impact of Interpersonal Connections on Hospital Arrival Time and Recovery<br>Henry Ford Health System, Detroit, MI  |
| 2019 | <b>Neurology Grand Rounds:</b> Social Networks and Stroke: Impact of Interpersonal Connections on Stroke Outcomes<br>University of Massachusetts Medical School, Worcester, MA |

## International

| Year(s) | Title of presentation or name of course/ Type of presentation/role(s) (note if presentation the result of a selected abstract)<br>Location (Sponsor, if any) |
|---------|--|
| 2008    | <b>Neurology Grand Rounds:</b> Deep learning in medicine: Ideas for teachers and students<br>Capital Medical University, Beijing, China                      |
| 2014    | <b>Neurology Grand Rounds:</b> Examining patients' social networks to improve stroke recovery<br>University of Saskatchewan, Saskatoon, Canada               |
| 2015    | Patients' social networks influence timing of hospital arrival after stroke<br>Effective Use of the R Language (EARL) Conference, London, England.           |
| 2018    | Social networks and stroke rehabilitation, Rehabilitation Medicine, VU University Medical Center, Amsterdam, Netherlands                                     |
| 2019    | Social networks and global health, NIH Fogarty International Center, Global Environmental and Occupational Health Workshop, Udaipur, India                   |

## Report of Clinical Activities and Innovations

### Current Licensure and Certification:

| Year         | Type of License or Certification                           |
|--------------|--|
| 2010-2014    | Licensed Physician, California Medical License (A111868)   |
| 2012         | Diplomate, American Board of Neurology and Psychiatry      |
| 2013-2016    | Licensed Physician, Missouri Medical License (2013015294)  |
| 2016-present | Licensed Physician, Massachusetts Medical License (266766) |

**Practice Activities:**

| Year(s)      | Type of activity                                 | Name and location of practice | Level of activity  |
|--------------|--|-------------------------------|--------------------|
| 2013-2016    | Inpatient Neurology Service Attending            | Barnes-Jewish Hospital        | 4-6 weeks per year |
| 2013-2016    | Inpatient Neurology Consult Service Attending    | Barnes-Jewish Hospital        | 4-6 weeks per year |
| 2013-2016    | Inpatient Neurology Stroke Service Attending     | Barnes-Jewish Hospital        | 4-6 weeks per year |
| 2013-2016    | Outpatient Neurology Clinics, General and Stroke | Barnes-Jewish Hospital        | ½ per week         |
| 2016-present | Inpatient Neurology Service Attending            | Brigham and Women's Hospital  | 10 weeks per year  |
| 2016-present | Outpatient Neurology Clinics, Stroke             | Brigham and Women's Hospital  | ½ day per week     |

**Clinical Innovations:**

| Name of clinical innovation                       | Describe the influence or potential influence of the innovation on clinical care or practice management, including how the innovation is used or has been implemented locally (at HMS), regionally, nationally or internationally; if developed as a member of a committee, describe your contribution.  |
|---|--|
| Neurology Milestones                              | We created the Neurology Milestones in 2013-2014 to aid in evaluating neurology residents and residency programs by the Accreditation Council for the Graduate Medical Education (ACGME). The Neurology Milestones detail neurology-specific clinical domains that are relevant to neurological training and progression toward competence in independent practice. I was a neurology representative on the committee. Description published in the Journal of Graduate Medical Education 2014; 6(1 Suppl 1): 102-104. |
| Diagnosis monitoring tool for inpatient neurology | Diagnostic errors account for 40,000 to 80,000 deaths every year. The Institute of Medicine called for tools to monitor physicians' diagnostic process. We developed the first secure web application for clinicians to record and analyze their diagnostic process. This was implemented by the full neurohospitalist division at Washington University in St. Louis from 2014-2016. Results were published in The Neurohospitalist 2017; 7(3): 132-136.  |

**Report of Technological and Other Scientific Innovations**

| Year(s)   | Innovation  |
|-----------|---|
| 2010-2014 | NeuroBoard: A clinical teaching tool that is a dry erase map of the brain. It is copyrighted by the Regents of the University of California and it was sold internationally by the American Academy of Neurology.   |
| 2014      | CardioBoard: A clinical teaching tool that is a dry erase map of the heart.   |
| 2018      | Personal network instrument created by our lab was posted on REDCap Shared Library for international use. The codebase to analyze results is available on GitHub < <a href="https://github.com/AmarDhand/PersonalNetworks">https://github.com/AmarDhand/PersonalNetworks</a> >. |

**Report of Education of Patients and Service to the Community****Activities**

| Year(s) | Organization or institution/ Role (Sponsor, if any) |
|---------|---|
|---------|---|

|      | One sentence description (optional)   |
|------|---|
| 2017 | Social Networks and Stroke Recovery<br>Stroke Camp, a 2-day camp for stroke survivors.                            |
| 2017 | Social Networks and Stroke Recovery<br>Stroke Survivors Evening Meeting   |
| 2018 | Rehabbing Together: A Social Network Intervention After Stroke<br>Stroke Camp, a 2-day camp for stroke survivors. |

## Educational Material for Patients and the Lay Community:

### Patient educational material

| Year | Title                           | Type of contribution<br>(Sponsor, if any) | Citation, if any |
|------|---------------------------------|---|------------------|
| 2014 | Hemicraniectomy<br>Decision Aid | Booklet                                   |                  |

## Report of Scholarship

Peer reviewed publications in print or other media (underline indicates a mentee):

### Research investigations

1. **Dhand A**, Birdi S, Rajput AH. (1998). Frequency of respiratory disorders and bradycardia in essential tremor—consideration of treatment. *Parkinsonism and Related Disorders*, 4(1), 7-10.
2. **Dhand A** (2006). The practice of poetry among a group of heroin addicts in India: Naturalistic peer learning. *Ethnography and Education*, 1(1), 125-141.
3. **Dhand A** (2006). The roles performed by peer educators during outreach among heroin addicts in India: Ethnographic insights. *Social Science and Medicine*, 63(10), 2674-2685.
4. **Dhand A** (2007). Using learning theory to understand access in ethnographic research. In G. Walford (Ed.), *Developments in Ethnographic Methodology* (Vol. 12), pp.1-25. Oxford, UK: Elsevier.
5. **Dhand A** (2009). Street 'doctory' among a group of heroin addicts in India: Naturalistic peer learning. *Ethnography and Education*, 4(1), 101-116.
6. Kamel H, Dhaliwal G, Navi BB, Pease AR, Shah M, **Dhand A**, Johnston SC, Josephson SA (2011). A randomized trial of hypothesis-driven vs screening neurological examination. *Neurology* 77(14), 1395-1400.
7. Grady E, Roise A, Barr D, Lynch D, Lee LBS, Daskivich T, **Dhand A**, Butler PD (2012). Defining scholarly activity in graduate medical education. *Journal of Graduate Medical Education* 4(4), 558-561.
8. **Dhand A**, Engstrom J, Dhaliwal G (2013). How experienced community neurologists make diagnoses during clinical encounters. *Neurology* 81(16), 1460-1466.
9. **Dhand A**, Harp J, Borgatti SP (2014). Leadership in neurology: a social network analysis. *Annals of Neurology* 75(3), 342-350.

10. Luke DA, Carothers BJ, **Dhand A**, Bell RA, Moreland-Russell S, Sarli CC, Evanoff BA (2015). Breaking down silos: Mapping growth of cross-disciplinary collaboration in a translational science initiative. *Clinical and Translational Science* 8(2), 143-149.
11. **Dhand A**, Luke DA, Carothers BJ, Evanoff BA (2016). Academic Cross-Pollination: The role of disciplinary affiliation in research collaboration. *PLOS ONE* 11(1), p.e015916.
12. Ong CJ, **Dhand A**, Diringer MN (2016). Early withdrawal decision-making in patients with coma after cardiac arrest: A qualitative study of intensive care clinicians. *Neurocritical Care* 25(2), 258-265.
13. **Dhand A**, Dalton AE, Luke DA, Gage BF, Lee JM (2016). Accuracy of wearable cameras to track social interactions in stroke patients. *Journal of Stroke and Cerebrovascular Diseases*, 25(12), 2907-2910.
14. **Dhand A**, Bucelli R, Varadhachary A, Tsiaklides M, de Bruin G, Dhaliwal G (2017). Monitoring the diagnostic process on an inpatient neurology service. *Neurohospitalist*, 7(3): 132-136.
15. Kumar P, **Dhand A**, Tabak RG, Brownson RC, Yadama GN (2017). Adoption and sustained use of cleaner cooking fuels in rural India: A case control study protocol to understand household, network, and organizational drivers. *Archives of Public Health*, 75:70, DOI 10.1186/s13690-017-0244-2.
16. Patel RR, Luke DA, Proctor EK, Powderly WG, Chan PA, Mayer KH, Harrison LC, **Dhand A** (2018). Sex venue-based network analysis to identify HIV prevention dissemination targets for men who have sex with men. *LGBT Health*, 5(1): 78-85.
17. **Dhand A**, Longstreth Jr WT, Chaves PHM, Dhamoon MS (2018). Social network trajectories in myocardial infarction versus ischemic stroke. *Journal of the American Heart Association*, 7(8): e008029.
18. **Dhand A**, White CC, Johnson C, Xia Z, De Jager P (2018). A scalable online tool for quantitative social network assessment reveals potentially modifiable social environmental risks. *Nature Communications*, 9(1): 3930-3939.
19. Prusaczyk B, Kripanlani S, **Dhand A**. (2019). Networks of hospital discharge planning teams and readmissions. *Journal of Interprofessional Care*, 33(1): 85-92.
20. **Dhand A**, Luke DA, Lang CE, Tsiaklides M, Feske S, Lee JM (2019). Social networks and risk of delayed hospital arrival after acute stroke. *Nature Communications*, 10: 1206-1214.
- 21.

#### **Scholarship without named authorship**

22. Johnston SC, Easton JD, Farrant M, and the POINT Investigators\* (2018). Clopidogrel and aspirin in acute ischemic stroke and high-risk tia. *New England Journal of Medicine*, 379(3): 215-225.

#### **Reviews, chapters, case reports, and commentaries**

23. **Dhand A**, Dhaliwal G. (2010). Examining patient conceptions: A case of metastatic breast cancer in an African American male to female transgender patient. *Journal of General Internal Medicine*, 25(2), 158-61.
24. **Dhand A**, Nakagama K, Nagpal S, Gelfand JM, Kim AS, Smith WS, Tihan T (2010). Cardiac rupture after intravenous t-PA administration in acute ischemic stroke. *Neurocritical Care* 13(2), 261-2.
25. **Dhand A**, Zhang X, Josephson SA (2010). Increasing aerobic exercise in the community: The adult playground in Beijing, China. *Archives of Neurology* 67(10), 1283.
26. **Dhand A** (2012). Right Brain: The case library as a tool to enhance clinical observation. *Neurology* 78(7): 512-513.
27. **Dhand A**, Engstrom J, Dhaliwal G (2014). Author response. *Neurology* 82(17), 1568.
28. **Dhand A**, Aminoff MJ (2014). The neurology of itch. *Brain* 137(2), 313-322.
29. **Dhand A**, Landau WM (2014). Hemispherectomy for middle-cerebral-artery stroke. *New England Journal of Medicine* 379(24), 2346.
30. Lewis SL, Jozefowicz RF, Kilgore S, **Dhand A**, Edgar L (2014). Introducing the Neurology Milestones. *Journal of Graduate Medical Education* 6(1s1), 102-104.
31. Kang P, **Dhand A** (2015). Teaching video neuroimages: Movement of a paralyzed arm with yawning. *Neurology* 84(16), e118.
32. **Dhand A** (2015). Quality metrics in inpatient neurology. *Seminars in Neurology* 35(6), 708-715.
33. **Dhand A**, Feske S (2016). Caregivers and families of critically ill patients. *New England Journal of Medicine* 375(10), 1000.
34. **Dhand A**, Luke DA, Lang CE, Lee JM (2016). Social networks and neurological illness. *Nature Reviews Neurology* 12(10), 605-612.
35. Renault S, **Dhand A** (2017). Converse well-being of locked-in patients and caregivers. *Annals of Neurology* 82(3):490-491.
36. Lee C, Thon JM, **Dhand A** (2017). Clival metastasis from a gastrointestinal adenocarcinoma causing multiple cranial neuropathies. *BMJ Case Reports*, pii: bcr-2017-222725. doi: 10.1136/bcr-2017-222725.
37. Luke DA, **Dhand A**, Carothers BJ (2017). Social network analysis. In Drs. Galea and El-Sayed (Eds.), *Systems Science and Population Health*.
38. Maamari RN, Stunkel L, Kung NH, Ferguson CJ, Tanabe J, Schmidt RE, Dahiya S, **Dhand A**, Van Stavern GP, Rajagopal R, Harocopos GJ (2019). Acute posterior multifocal placoid pigment epitheliopathy complicated by fatal cerebral vasculitis. *J Neuroophthalmol*, Epub ahead of print.
39. Zachrison K, **Dhand A**, Schwamm LH, Onnela J-P (in press). A network approach to stroke systems of care. *Circulation: Cardiovascular Quality and Outcomes*.

### **Non-peer reviewed scientific or medical publications/materials in print or other media**

1. **Dhand A**, Douglas V (2010). Neurology. Le, Bushan, Bagga (Eds), *First Aid for the USMLE Step 3*. New York: McGraw Hill, 235-256.
2. **Dhand A**, Douglas V (2010). Ethics and Statistics. Le, Bushan, Bagga (Eds), *First Aid for the USMLE Step 3*. New York: McGraw Hill, 91-102.

### **Professional educational materials or reports, in print or other media**

1. **Dhand A**, Mandell J, Lieberman G (2007). <http://www.lesionlocalizer.com>. World Wide Web, available November 1, 2007.
2. **Dhand A** (2009). <http://sites.google.com/site/neurologylaunchpad>. World Wide Web, available November 1, 2009.
3. **Dhand A** (2010, 2011, 2012, 2013, 2014). NeuroBoard: A dry erase map of the brain.
4. **Dhand A** (2014). CardioBoard: A dry erase map of the heart.
5. **Dhand A** (2014). Hemicraniectomy Decision Aid.
6. **Dhand A** (2015, 2016, 2017, 2018, 2019). <http://www.dhandlab.com>. World Wide Web, available July 1, 2015.
7. Munz, Michelle (January 28, 2016). How social networks affect recovery after a stroke. *St. Louis Post-Dispatch*. [https://www.stltoday.com/lifestyles/health-med-fit/health/how-social-networks-affect-recovery-after-a-stroke/article\\_8672f9e1-d87e-5cf0-bafe-b6b4a273c96c.html](https://www.stltoday.com/lifestyles/health-med-fit/health/how-social-networks-affect-recovery-after-a-stroke/article_8672f9e1-d87e-5cf0-bafe-b6b4a273c96c.html).
8. Bahrampour, Tara (September 12, 2016). To stay healthy as we age, large social networks trump close-knit ones. *Washington Post*. [https://www.washingtonpost.com/local/social-issues/to-stay-healthy-as-we-age-large-social-networks-trump-close-knit-ones/2016/09/11/d1154376-7818-11e6-bd86-b7bbd53d2b5d\\_story.html?utm\\_term=.0e3fe3f723ba](https://www.washingtonpost.com/local/social-issues/to-stay-healthy-as-we-age-large-social-networks-trump-close-knit-ones/2016/09/11/d1154376-7818-11e6-bd86-b7bbd53d2b5d_story.html?utm_term=.0e3fe3f723ba).

### **Thesis**

**Dhand A** (2006). Peer learning among a group of heroin addicts in India: An ethnographic study. DPhil thesis. Green College, Oxford University.

### **Abstracts, Poster Presentations, and Exhibits Presented at Professional Meetings**

1. **Dhand A**, Harp J, Borgatti S (2014). Social network analysis of presidents in neurology organizations since 1948. American Academy of Neurology 2014. Philadelphia, PA.
2. **Dhand A**, Varadhachary A, de Bruin G, Bucelli R. (2014). Neurohospitalist database to track diagnoses: Design and preliminary results. Neurohospitalist meeting 2014. Denver, CO.



3. Carothers B, Luke D, **Dhand A**, Moreland-Russell S, Sarli C, Evanoff B (2014). Mapping the Growth of Transdisciplinary Partnerships over Time in a Large Scientific Initiative. Sunbelt 2014. St. Pete Beach, FL.
4. **Dhand A**, Luke D, Tsiaklides M, Lang C, Lee J-M (2015). Patients' social networks influence timing of hospital arrival after acute ischemic stroke. 140th Annual Meeting of the American Neurological Association. Chicago, IL.
5. **Dhand A**. (2015). Personal networks influence timing of hospital arrival after stroke [oral abstract]. Sunbelt 2015. Brighton, United Kingdom.
6. **Dhand A** (2015). Social network analysis in R applied to stroke patients' health behaviors [oral abstract]. Effective Applications of R Conference, London, United Kingdom.
7. **Dhand A**, Luke D, Tsiaklides M, Lang C, Lee J-M (2016). Patients' social networks influence timing of hospital arrival after acute ischemic stroke: A mixed methods study. International Stroke Conference 2016. Los Angeles, CA.
8. **Dhand A**, Dalton A, Luke D, Gage BF, Lee J-M (2016). Accuracy of wearable cameras to tract social interactions in stroke patients. 141th Annual Meeting of the American Neurological Association. Baltimore, MD.
9. Bucelli R, Varadhachary A, de Bruin G, **Dhand A** (2016). Clinician-defined case mix on an academic inpatient neurology service. 141th Annual Meeting of the American Neurological Association. Baltimore, MD.
10. **Dhand A**, Cornelius S (2016). Understanding hospital networks to improve patient outcomes and reduce healthcare costs. Effective Applications of R Conference, Boston, MA.
11. **Dhand A** (2017). Patient-sharing hospital network centrality and its effect on inpatient mortality. NetSci 2017. Indianapolis, IN.
12. **Dhand A**, Longstreth Jr., W.T., Chaves, P.H.M., Dhamoon, M.S. (2017) Social network trajectories in ischemic stroke versus myocardial infarction. Neurocritical Care Society 2017. Big Island, HI.
13. **Dhand A**, Luke D, Kim A, Feske SK, Lang C, Lee J-M (2018). Network size at stroke onset is associated with 6-month stroke outcomes. International Stroke Conference 2018. Los Angeles, CA.
14. **Dhand A**, Luke DA, Lang CE, Tsiaklides M, Feske S, Lee JM (2018). Social network size at stroke onset is associated with 3 and 6-month stroke outcomes [oral abstract]. Neurohospitalist Conference 2018. St. Louis, MO.
15. **Dhand A**, Kim A, Li K, Feske S (2018). Egocentric networks in medicine [oral abstract]. Sunbelt 2018. Utrecht, Netherlands.
16. Levin S, **Dhand A**, Riley C, De Jager P, Leavitt V (2018). Social network structure is a novel protective factor related to cognitive reserve in MS. ECTRIMS 2018. Berlin, Germany.

17. Kumar P, Yadama G, **Dhand A**, Tabak R, Brownson R (2019). Role of gender based networks in adoption of cleaner cooking fuels: Evidence from rural India. Energy and Society in Transition: 2<sup>nd</sup> International Conference on Energy Research and Social Science. Tempe, AR.
18. **Dhand A** (2019). Retired NFL players' personal networks and relation to general health metrics. Sunbelt 2019. Montreal, Canada.
19. Levin A, Dhand A, Xia Z, De Jagger P. Social network structure is associated with physical function and disability severity in adults with multiple sclerosis. ECTRIMS 2019. Stockholm, Sweden.

## Narrative Report

The narrative should describe your major contributions and achievements and should be clear to those outside your field. Readers should understand your career trajectory and impact. You need not reiterate your history of training, but the chronology of your accomplishments should be clear. You should make clear the extent of your reputation and the key achievements for which you are known. If your accomplishments bridge difference arenas (e.g., research and clinical care), you may wish to clarify any connections that are not readily apparent.

The narrative should be written in the first person and should be concise. In general, length should be commensurate with rank. Most narratives for Assistant Professor candidates should  $\leq$  page; no narrative should exceed two pages.

Please include:

- Your contributions in your Area of Excellence (Investigation, Teaching and Educational Leadership, or Clinical Expertise and Innovation). You may want to include a description of work in progress that may otherwise not be reflected in your CV.
- Your contributions in teaching (if not already described under your Area of Excellence).
- Your contributions in any Significant Supporting Activities (Investigation, Clinical Expertise, Special Merit in Education, Administration & Institutional Service, Education of Patients and Service to the Community).

I have been a nationally-funded clinician investigator since 2014, leading my own laboratory in the innovative area of social networks in neurological disease. I have served as the PI on 1 NIH K23 grant, 1 AHA grant, and 4 foundation grants. As a board-certified neurologist and Assistant Professor of Neurology at Harvard Medical School, I supervise residents and medical students in inpatient and consult neurology services for 10-12 weeks per year. Currently, I spend 75% of my time on research and mentoring within the context of social networks and neurological disease.

In my clinical capacity, I have led innovative initiatives that have received national recognition. In 2013-2014, I was part of creating the Neurology Milestones with the ACGME. As the rubric to define the core domains of expertise of a graduating neurology resident, the Neurology Milestones have been adopted nation-wide. In 2014-2016, I created a diagnosis monitoring tool for inpatient neurology. This tool tracked the process of making a diagnosis by inpatient clinicians. The results were presented at national professional conferences and published in the *Neurohospitalist*. I was also the creator of the NeuroBoard, a hand-held dry erase map of the brain that serves as a teaching tool for trainees and patients. The tool was copyrighted by the Regents of the University of California and sold nationally and internationally by the American Academy of Neurology Store.

In my research capacity, I lead the Dhand Lab ([www.dhandlab.com](http://www.dhandlab.com)), a multi-disciplinary research group with an international reputation. We explore the longitudinal effects of social network risk factors underlying stroke. For this work, we've created new open source instruments for quantitative assessment of social networks in neurology patients. These instruments have been adopted for studies across diseases including traumatic brain injury, multiple sclerosis, amyotrophic lateral sclerosis, and prostate cancer. Our research has been nationally and internationally recognized as a new lens on neurological disease. I have discussed our work in 5 grand round presentations. Our work has been featured in national and international conferences, lay person outreach events, and public newspapers and radio shows. I have published 38 articles, including reports in high impact journals such as *Nature Communications*, *Annals of Neurology*, and *Neurology*.

A particular emphasis of mine throughout my career has been to mentor younger colleagues toward academic careers. Collectively, I have mentored 14 mentees who have published 5 first author papers in leading journals. They have also been successful in varied career paths including medical school, clinician investigator, and data scientist.