

**Harvard Medical School/Harvard School of Dental Medicine
Curriculum Vitae**

Date Prepared: March 16, 2015
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Place of Birth: Seoul, South Korea

Education

| | | | |
|------|---------|-------------------------------------|---|
| 1998 | B.A. | Neuroscience and Behavior | Columbia University |
| 2001 | M.P.H. | Epidemiology | UCLA School of Public Health |
| 2005 | M.D. | Medicine | UCSF School of Medicine |
| 2011 | M.M.Sc. | Clinical and Translational Research | Harvard Medical School/ Clinical Investigator Training Program (CITP) |

Postdoctoral Training

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|-----------|-----------------|--|--|
| 6/05-6/09 | Resident | Psychiatry | Massachusetts General Hospital/McLean Hospital |
| 7/09-4/14 | Research Fellow | Schizophrenia and Bipolar Disorders Program (PI Dost Öngür, MD, PhD) | McLean Hospital |
| 7/12-4/14 | Fellow | Clinical Research Training Program | Harvard Medical School/ Judge Baker Children's Center |

Faculty Academic Appointments

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|---------------|------------|------------|------------------------|
| 07/09-present | Instructor | Psychiatry | Harvard Medical School |
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Appointments at Hospitals/Affiliated Institutions

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| 07/09-present | Assistant Psychiatrist | Psychotic Disorders Division | McLean Hospital |
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Major Administrative Leadership Positions

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| Local | | | |
| 7/08-6/09 | Chief Resident | Schizophrenia and Bipolar Disorders Program | McLean Hospital |

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| 10/10 | Organizer | Self-Disturbances in Schizophrenia Spectrum: Theory and Practice (Two-day course) | McLean Hospital |
| 06/11-02/14 | Co-Director McLean Site | Psychopathology and Introduction to Clinical Psychiatry (Course PS700MJ) | Harvard Medical School |
| 04/12 | Organizer | Advanced Examination of Anomalous Self-Experiences (EASE) Workshop (Three-day course) | McLean Hospital |
| 07/12-present | Director of Clinical Research | Schizophrenia and Bipolar Disorders Program | McLean Hospital |
| 09/13-present | Co-Medical Director | OnTrack First Episode Psychosis Program | McLean Hospital |

Committee Service

Local

| | | |
|--------------|--|--|
| 2008-2009 | Residency Training Sub-Committee | McLean Hospital |
| 2008-2009 | Seclusion and Restraints Committee | McLean Hospital |
| 2010-2014 | Residency Selection Committee | Massachusetts General Hospital/McLean Hospital |
| 2010, 2012 | Self-Disturbances Workshop Organizing Committee | McLean Hospital |
| 2013-present | OnTrack First Episode Program Steering Committee | McLean Hospital |

Professional Societies

| | | |
|--------------|-----------------------------------|--------|
| 2004-present | American Psychiatric Association | Member |
| 2006-present | American Medical Association | Member |
| 2008-present | Massachusetts Psychiatric Society | Member |
| 2009-present | Massachusetts Medical Society | Member |

Grant Review Activities

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|------|-----------------|--------------------------------|
| 2014 | Ad-Hoc Reviewer | Health Research Board, Ireland |
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Editorial Activities

| | | |
|--------------|------------------------|-------------------------|
| 2015-present | Editorial Board Member | Neuropsychopharmacology |
|--------------|------------------------|-------------------------|

Ad Hoc Review Activities

| | |
|--------------|--|
| 2009-present | Harvard Review of Psychiatry |
| 2010-2011 | CNS Neuroscience and Therapeutics |
| 2010 | Progress in Neuro-Psychopharmacology & Biological Psychiatry |

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|--------------|-----------------------------------|
| 2011 | Addictive Behaviors |
| 2011-2013 | Journal of Clinical Psychiatry |
| 2012 | Human Brain Mapping |
| 2012-present | Schizophrenia Research |
| 2012-present | JAMA Psychiatry |
| 2012 | Journal of Psychiatric Research |
| 2013 | Current Psychiatry Reviews (CPSR) |
| 2013-present | Psychological Medicine |
| 2014-present | BMJ Case Reports |
| 2014-present | Bipolar Disorders |
| 2014-present | Biological Psychiatry |
| 2014-present | Psychiatry Research |
| 2015-present | Psychiatry Research: Neuroimaging |
| 2015-present | American Journal of Psychiatry |
| 2015-present | Nature Reviews Neuroscience |

Honors and Prizes

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|-----------|---|--|
| 1997 | Summer Undergraduate Research Fellowship | Columbia University |
| 2002 | Minority Medical Student Fellowship | American Psychiatric Association |
| 2002 | Chair Scholarship | Korean American Scholarship Foundation |
| 2002 | Scaife Advanced Medical Student Fellowship in Alcohol and Other Drug Dependency | Institute on Research, Education, and Training in Addictions (IRETA) |
| 2006 | Resident Travel Award, 23 rd Annual Pittsburgh Schizophrenia Conference | University of Pittsburgh |
| 2007 | NIMH Outstanding Resident Award | National Institute of Mental Health |
| 2009 | Dr. Henry P. and M. Page Durkee Laughlin Foundation Award | McLean Hospital |
| 2012-2013 | Career Development Institute (CDI) for Psychiatry Participation via a competitive application process | University of Pittsburgh/Stanford (NIMH R25MH090947) |

Report of Funded and Unfunded Projects

Funding Information

Past

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| 2009-2010 | American Psychiatric Association Program for Minority Research Training in Psychiatry NIMH 5T32MH019126 (PI Regier) Trainee (\$45,504) Participation via a competitive national selection process. |
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Program provided salary support for me to conduct research using resting state functional magnetic resonance imaging (MRI) and diffusion tensor imaging (DTI) to study auditory hallucinations in patients with psychosis

- 2009-2011 Clinical Investigator Training Program (CITP)
Harvard-MIT Health Sciences and Technology/Beth Israel Deaconess Medical Center (BIDMC) (Directors Rubin and Hollenberg)
Fellow (\$100,000)
Participation via a competitive selection process across all medical specialties at HMS. Program provided salary support and weekly didactic training in clinical investigation while I conducted mentored research using resting state fMRI and DTI to study auditory hallucinations in schizophrenia.
- 2009-2012 2009 Dupont-Warren Fellowship
Harvard Medical School Department of Psychiatry
Fellow (\$60,617)
Awarded via a competitive selection process within the HMS Department of Psychiatry. Fellowship provided salary support for me to conduct research using resting state fMRI and DTI to study auditory hallucinations in schizophrenia.
- 2009-2012 2009 APIRE/Lilly Psychiatric Research Fellowship
American Psychiatric Institute for Research and Education (APIRE)
Fellow (\$45,000)
Awarded via a competitive national selection process. Fellowship provided salary support for me to conduct research using resting state fMRI and DTI to study auditory hallucinations in schizophrenia.
- 2010-2014 NIH Loan Repayment Program
NIMH Clinical Research- Extramural
Awardee (\$86,044)
Awarded via a competitive application process.
Award repays up to \$35,000 of qualified student loan debt per year in exchange for a two-year research commitment. Initial contract was from 7/1/10 to 6/30/12; renewal contract was from 7/1/12 to 6/30/14.
- 2011-2012 2011 Eleanor and Miles Shore Harvard Medical School Fellowship
McLean Hospital
Fellow (\$30,000)
Awarded via a competitive selection process at McLean Hospital. Fellowship provided salary support for me to conduct research using resting state fMRI and DTI to study auditory hallucinations in schizophrenia.
- 2011-2013 Functional and Anatomical Connectivity in Bipolar Psychosis with and without Auditory Hallucinations
2011 NARSAD Young Investigator Award
Brain and Behavior Research Foundation
PI (\$60,000)
Awarded via a national peer review process.

Award provided salary support as I extended my previous auditory hallucinations connectivity research to bipolar psychosis.

2012-2014 Harvard Medical School Hauser Clinical Research Training Program
NIMH 5T32MH016259 (PI Shenton)
Trainee (\$88,494)
Participation via a competitive application process.
Program provided salary support and weekly didactic training in research and career development

Current

2014-2019 Auditory, Speech, and Cognitive Networks in Hallucinators across the Psychosis Spectrum
NIMH K23 MH100611-01A1
PI (\$906,240)
The major goal of the study is to investigate, using a personalized, subject-specific approach, how auditory, speech, and cognitive brain regions are connected in patients with psychosis with and without auditory hallucinations.

2015-2016 Transcranial Magnetic Stimulation of Cerebellum in Mood and Psychotic Disorders
John A. Kaneb Young Investigator Award
PI (\$40,000)
The goal is to design and complete a pilot study of transcranial magnetic stimulation (TMS) as a tool to probe possible cerebro-cerebellar abnormalities in the pathophysiology of mood and psychotic disorders.

Current Unfunded Projects

2006-present Effects of Eszopiclone on Sleep and Learning in Chronic, Medicated Schizophrenia Patients
I collaborate with Dara Manoach, PhD, at Massachusetts General Hospital Charlestown Navy Yard and Robert Stickgold, PhD, at the Beth Israel Deaconess Medical Center. My role is co-investigator. I assisted with the informed consent process, was responsible for any medical adverse events related to the administration of eszopiclone, and contributed to manuscript writing.

2010-present Computational Intelligence Techniques for Brain Imaging and the Neurosciences
I collaborate with Manuel Graña, PhD, and colleagues in the Department of Computer Science and Artificial Intelligence at the Universidad del País Vasco-Spain in San Sebastian, Spain, sharing neuroimaging data and providing clinical expertise to their application of machine learning (ML) algorithms in clinical samples.

2013-present Longitudinal Multimodal Neuroimaging Studies in Patients with First Episode Psychosis
I conduct interviews using the Examination of Anomalous Self-Experiences (EASE) instrument as part of patients' baseline clinical assessment.

2013-present Handedness in Psychotic Disorders
I am supervising a research assistant in analyzing a large research database to investigate the association between handedness and language-related symptoms in patients with psychosis.

- 2014-present Examining the Relationship between Homicidal Ideation and Legal History of Patients on Psychotic Disorder Inpatient Units
I am supervising a research assistant in a retrospective chart review investigating the prevalence of homicidal ideation, violence, and associated legal and other risk factors in patients who are hospitalized on psychotic disorders inpatient units.
- 2014-present Multimodal Neuroimaging, Genetic, Metabolic, and Clinical Characterization of Patients with Schizophrenia, Psychotic Bipolar Disorder, and Related Disorders
I wrote the IRB protocol and informed consent form, and oversee research assistants in the smooth implementation of the many research components involved.

Report of Local Teaching and Training

Teaching of Students in Courses

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|--------------|---|---|
| 2008-2009 | Schizophrenia and Bipolar Disorder Third and fourth year medical students (PS500M-501M) | McLean Hospital 1.5hr session/month |
| 2011-2013 | Psychopathology and Introduction to Clinical Psychiatry Second year medical & dental students (PS700MJ) | Harvard Medical School 1.5hr sessions/week for 12wks |
| 07/19/12 | Functional Connectivity in Vulnerability to Auditory Hallucinations in Schizophrenia For visiting summer students series | McLean Hospital 1hr lecture |
| 2015-present | Laboratory Research (HU Neurobiology 98r) Teach/mentor a 6 th semester Harvard University undergraduate student in neuroimaging of psychotic disorders as part of her independent study (to lead to a senior thesis). | McLean Hospital 2-4 hrs/week |

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

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|--------------|--|---|
| 2008-2009 | Antipsychotics First year psychiatry residents/PGY1 psychiatry seminar | McLean Hospital 1hr lecture |
| 2008-2009 | Mood stabilizers Second year psychiatry residents/AB2 didactic series | McLean Hospital 1hr lecture, quarterly |
| 2013 | Approach to the patient with first episode psychosis Third year psychiatry residents | McLean Hospital 1hr lecture |
| 2014-present | Basic symptoms and the examination of anomalous self-experiences Second year psychiatry residents | McLean Hospital 1hr lecture, quarterly |
| 2014-present | Psychiatric medications Psychology interns/OnTrack intern didactics series | McLean Hospital Two 1hr lectures |

- 2014-present First episode bipolar disorder McLean Hospital
Third year psychiatry residents at both MGH and McLean 1hr lecture, yearly
- 03/16/15 The K-award application process: perspectives of a Judge Baker Children's
former CRTP fellow Center/Harvard Medical
Fellows in the Harvard Medical School Hauser Clinical School
Research Training Program (CRTP) 1.5 hour talk

Clinical Supervisory and Training Responsibilities

- 07/09-04/13 Inpatient attending on the psychotic disorders teaching unit 18-27 days per year
Supervision of second year psychiatry residents and rotating
medical students/McLean Hospital
- 07/14-present Co-medical director of outpatient clinical program 0.5-1 hour per week
Supervision of junior clinical staff/McLean OnTrack

Laboratory and Other Research Supervisory and Training Responsibilities

- 2012-present Train postdoctoral fellows and research assistants in the 1-3hrs for 6-8 weeks
administration of the Structured Clinical Interview for
DSM Disorders (SCID). I also lead additional SCID reliability
interview sessions a few times per year.

Formally Supervised Trainees

- 10/13-10/14 Rosilyn Ford, APRN/ Katz Family Foundation Advanced Practice Psychiatric Nursing
Fellow, McLean Hospital
Supervision in the pharmacological management of first episode psychosis patients
1-1.5hrs every two weeks

Formal Teaching of Peers (e.g., CME and other continuing education courses)

- 02/09/11 Auditory Hallucinations McLean Hospital
Nurses, social workers, mental health workers on 1hr lecture
the psychotic disorders inpatient unit

Local Invited Presentations

No presentations below were sponsored by outside entities.

- 12/13/13 Voice Hearing/NeuroWIP Series
McLean Hospital
- 01/10/14 Debunking Myths about Negotiations/Women's Faculty Lunch
McLean Hospital
- 04/09/14 Human Subjects Research/Office of the Chief Academic Officer (CAO) Series
McLean Hospital
- 06/02/14 Voice Hearing in Psychotic Disorders/McLean Imaging Center (MIC) Speaker Series

McLean Hospital

- 01/09/15 Aberrant Cerebellar Connectivity in Motor and Association Networks in Schizophrenia/Neuro-WIP Series
McLean Hospital
- 01/21/15 McLean OnTrack: An Early Intervention Program for First Episode Affective and Non-affective Psychoses/McLean Research Day 2015 Brief Communications Session
McLean Hospital
- 01/29/15 Voice Hearing: Auditory, Speech, and Cognitive Networks in Hallucinators Across the Psychosis Spectrum/Seminar Series at the Psychiatric Neuroimaging Laboratory
Brigham and Women's Hospital

Report of Regional, National and International Invited Teaching and Presentations

Regional, National, and International Presentations

- 05/23/10 Resting State Correlation of Activity in the Primary Auditory Cortex to Other Brain Regions in Current vs. Non-Hallucinators with Schizophrenia and Schizoaffective Disorder/
American Psychiatric Association 163rd Annual Meeting, Colloquium for Junior Investigators, New Orleans, LA
- 04/14/12 Functional Connectivity in Vulnerability to Auditory Hallucinations in Schizophrenia/
Career Development Institute for Psychiatry, University of Pittsburgh, Pittsburgh, PA

Report of Clinical Activities and Innovations

Current Licensure and Certification

- 2009-present Massachusetts Medical License
2010-present American Board of Psychiatry and Neurology

Practice Activities

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|--------------|------------------------------|--|---------------------|
| 2009-2013 | Inpatient attending coverage | Schizophrenia and Bipolar Disorders Unit, McLean Hospital | 18-27 days per year |
| 2009-present | Ambulatory care | Private practice | 1 hour/month |
| 2012-present | Ambulatory care | OnTrack First Episode Psychosis Program, McLean Hospital | 4-8 hours/week |

Clinical Innovations

- OnTrack Team Structure (2013-present) Played a key role in the restructuring of the OnTrack Program to a team-based model in order to provide more integrated care, with greater focus on recovery-oriented case management. Currently working to extend the team structure to

include an outreach social worker to work with patients in the community (e.g., to return to school and/or work, improve social functioning).

OnTrack Metabolic Monitoring (10/13)

Set up a system for OnTrack clinical staff to systematically monitor antipsychotic-related metabolic side effects, featuring a patient spreadsheet that includes a schedule for collection of relevant measurements and labs, and graphs to visually track progress.

Report of Technological and Other Scientific Innovations

OnTrack Mobile Health App (02/14-present)

My colleagues and I in the OnTrack Program have partnered with Wellframe, Inc. to develop a smartphone app to empower and enhance engagement of the young people in our clinic. The app will allow patients to orient to and access clinic resources; access educational material about illness and medications; track symptoms, physical activity, and diet; set recovery-oriented goals and track progress towards meeting goals; play brain-training games; and communicate more easily with OnTrack staff. I assembled the team, led the efforts to write and submit grant applications for funding, and coordinated focus groups to understand patient needs and preferences.

Report of Education of Patients and Service to the Community

Activities

No activities below were sponsored by outside entities.

2001-2002

UC San Francisco, Homeless Health Smoking Cessation Program/Coordinator
In medical school, I organized and led weekly group sessions in a smoking cessation program for residents of a San Francisco homeless shelter, which used a combination of CBT, nicotine patches, and bupropion. Recruited medical students, served as liaison with shelter staff.

03/05-4/05

Himalayan Health Exchange, Dharamsala Expedition/Team Member
In medical school, I participated in a month-long expedition to provide medical and preventive care to underserved populations in remote villages in the Northern Himalayas (exiled Tibetans in a refugee settlement and indigent populations in the Dhauladhar range).

12/14/12

“A Different Voice” by Scott Edwards. *On the Brain: The Harvard Mahoney Neuroscience Institute Letter* (Winter 2013, Vol. 19, No. 1)/Interviewed by reporter for feature article about auditory hallucinations.

05/01/13

American Foundation for Suicide Prevention, Boston Chapter/Panel Member
Served as a panelist for the American Foundation for Suicide Prevention "Living with Bipolar Disorder" film viewing and question & answer session for an audience of more than 150, consisting primarily of patients and their families.

12/12/13

“Understanding Schizophrenia: Fake Signer at Mandela Memorial Claims Mental Illness,” by Alice Park. *TIME*/Interviewed by reporter for article about schizophrenia.

Educational Material for Patients and the Lay Community

No educational materials below were sponsored by outside entities.

Books, monographs, articles and presentations in other media

2013-2014 OnTrack website Author of “Our Philosophy” and “FAQ.”

Patient educational material

04/14-present OnTrack animated patient education videos Co-author; my colleagues and I in the OnTrack Program are working with Planet Nutshell, Inc. to develop animated youth-friendly educational videos about (1) psychosis, (2) mania, and (3) the OnTrack Program. I have taken the lead in writing/editing the script on the OnTrack side, ensuring that the material is clinically relevant and accurate.

Report of Scholarship

Peer reviewed publications in print or other media

Research investigations

1. Martinez D, Hwang DR, Mawlawi O, Kent J, Simpson N, Parsey RV Hashimoto T, Slifstein M, Huang Y, **Shinn A**, Van Heertum R, Abi-Dargham A, Caltabiano S, Malizia A, Cowley H, Mann JJ, Laruelle M. Differential occupancy of somatodendritic and postsynaptic 5HT1A receptors by pindolol: a dose-occupancy study with [¹¹C]WAY 100635 and positron emission tomography in humans. *Neuropsychopharmacology*. 2001;24 (3):209-29. PMID: 11166513.
2. London ED, Simon SL, Berman SM, Mandelkern MA, Lichtman AM, Bramen J, **Shinn AK**, Miotto K, Learn J, Dong Y, Matochik JA, Kurian V, Newton T, Woods R, Rawson R, Ling W. Mood disturbances and regional cerebral metabolic abnormalities in recently abstinent methamphetamine abusers. *Arch Gen Psychiatry*. 2004;61(1):73-84. PMID: 14706946.
3. Öngür D, Lundy M, Greenhouse I, **Shinn AK**, Menon V, Cohen BM, Renshaw PF. Default mode network abnormalities in bipolar disorder and schizophrenia. *Psychiatry Res*. 2010;183(1):59-68. PMID: 20553873; PMC2902695.
4. Savio A, Charpentier J, Termenón M, **Shinn AK**, Graña M. Neural classifiers for schizophrenia diagnostic support on diffusion imaging data. *Neural Network World*. 2010;20(7):935-949.
5. Chai XJ, Whitfield-Gabrieli S, **Shinn AK**, Gabrieli JD, Nieto Castañón A, McCarthy JM, Cohen BM, Öngür D. Abnormal medial prefrontal cortex resting-state connectivity in bipolar disorder and schizophrenia. *Neuropsychopharmacology*. 2011;36(10):2009-17. PMID: 21654735; PMC3158318.
6. **Shinn AK**, Pfaff D, Young S, Lewandowski K, Cohen B, Öngür D. Auditory hallucinations in a cross-diagnostic sample of psychotic disorder patients: A descriptive, cross-sectional study. *Compr Psychiatry*. 2012;53(6):718-26. PMID: 22197213; PMC3314103.
7. Wamsley EJ, Tucker MA, **Shinn AK**, Ono KE, McKinley SK, Ely AV, Goff DC, Stickgold R,

Manoach DS. Reduced sleep spindles and spindle coherence in schizophrenia: Mechanisms of impaired memory consolidation? *Biol Psychiatry*. 2012;71(2):154-61. PMID: 21967958; PMC3561714.

8. Yüksel C, McCarthy J, **Shinn AK**, Pfaff DL, Heckers S, Renshaw P, Öngür D. Gray matter volume in schizophrenia and bipolar disorder with psychotic features. *Schizophr Res*. 2012;138(2-3):177-82. PMID: 22445668; PMC3372612.
9. **Shinn AK**, Baker JT, Cohen BM, Öngür D. Functional connectivity of left Heschl's gyrus in vulnerability to auditory hallucinations in schizophrenia. *Schizophr Res*. 2013;143(2-3):260-8. PMID: 23287311; PMC3601525.
10. Wamsley EJ, **Shinn AK**, Tucker MA, Ono KE, McKinley SK, Ely AV, Goff DC, Stickgold R, Manoach DS. The effects of eszopiclone on sleep spindles and memory consolidation in schizophrenia: a double-blind randomized trial. *Sleep*. 2013;36(9):1369-76. PMID 23997371; PMC3738047.
11. Du F, Cooper AJ, Thida T, **Shinn AK**, Cohen BM, Öngür D. Myelin and axon abnormalities in schizophrenia measured with magnetic resonance imaging techniques. *Biol Psychiatry*. 2013;74(6):451-7. PMID: 23571010; PMC3720707.
12. **Shinn AK**, Heckers S, Öngür D. The special treatment of first rank auditory hallucinations and bizarre delusions in the diagnosis of schizophrenia. *Schizophr Res*. 2013;146(1-3):17-21. PMID: 23523693; PMC3667611.
13. Chyzyk D, Graña M, Öngür D, **Shinn AK**. Discrimination of schizophrenia auditory hallucinations by machine learning of resting-state functional MRI. *Int J Neural Syst*. 2015 Jan 19, [Epub ahead of print]. PMID: 25753600.
14. **Shinn AK**, Baker JT, Lewandowski KE, Öngür D, Cohen BM. Aberrant cerebellar connectivity in motor and association networks in schizophrenia. *Front Hum Neurosci*. 2015, in press.

Other peer-reviewed publications

1. **Shinn AK**, Greenfield SF. Topiramate in the treatment of substance-related disorders: A critical review of the literature. *J Clin Psychiatry*. 2010;71(5):634-48. PMID: 20361908; PMC3736141.

[Non-peer reviewed scientific or medical publications/materials in print or other media](#)

1. Parsey RV, Slifstein M, Hwang DR, Abi-Dargham A, Simpson N, Guo NN, **Shinn A**, Mawlawi O, Van Heertum R, Mann JJ, Laruelle M. Comparison of kinetic modeling methods for the in vivo quantification of 5-HT_{1A} receptors using WAY 100635. In: *Physiological Imaging of the Brain with PET*, Gjedde A, Hansen SB, Knudsen GM, Paulson OB (Eds). Academic Press;2001. pp. 249-256.

2. Manoach DS, **Shinn AK**, Stickgold R. Schizophrenia, other neuropsychiatric disorders, and sleep. In: The Encyclopedia of Sleep, Kushida C.A. (Ed.). Waltham, MA: Academic Press; 2011. pp. 396-400.
3. Chyzyk D, **Shinn AK**, Graña M. Exploration of LICA detections in resting state fMRI. In: New Challenges on Bioinspired Applications, Lecture Notes in Computer Science, Ferrandez JM, Sanchez JRA, de la Paz F, Toledo FJ (Eds). Springer Berlin Heidelberg; 2011. Series volume 6687, pp. 104-111.

Professional educational materials or reports, in print or other media

1. “2013 Anatomy of a Case Write-Up.” A five-page example psychiatry case write-up, including a psychiatric formulation and plan, annotated with explanatory comments along the margins. Written for second year medical and dental students assigned to the McLean Hospital site for the Harvard Medical School course Psychopathology and Introduction to Clinical Psychiatry (PS700MJ). The course directors decided to use this material across all ten hospital sites.

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings

1. **Shinn AK**, Du F, Thida T, Sperry S, Cohen B, Öngür D, Lewandowski KE. Myelin and axon abnormalities in schizophrenia and bipolar disorder measured with magnetization transfer ratio and diffusion tensor spectroscopy. 52nd Annual Meeting of the American College of Neuropsychopharmacology (ACNP). Hollywood, FL. Dec 2013.
2. **Shinn AK**, Baker JT, Lewandowski KE, Cohen B, Öngür D. Abnormal cerebro-cerebellar functional connectivity in schizophrenia. 53rd Annual Meeting of the American College of Neuropsychopharmacology (ACNP). Phoenix, AZ. Dec 2014.

Narrative Report

I am a psychiatrist at McLean Hospital and an Instructor at Harvard Medical School committed to becoming an independent investigator in psychosis research. I currently spend 75% of my time on research, and 25% on clinical care and teaching.

Research Contributions

My long-standing interest in psychosis research began during a summer undergraduate research fellowship in a brain imaging lab. This interest guided me to medical school, a residency in psychiatry, and then to a research fellowship in the Schizophrenia and Bipolar Disorders Research Program of Dost Öngür, MD, PhD, at McLean Hospital. As a fellow and Instructor, my primary research examined functional connectivity abnormalities associated with the primary auditory cortex in schizophrenia and schizoaffective disorder patients with a history of auditory hallucinations (AH). I received several competitive fellowships and foundation grants to pursue this and related research. My current program of research is funded by a NIMH K23 award entitled, "Auditory, Speech, and Cognitive Networks in Hallucinators Across the Psychosis Spectrum." The goal of this research is to improve understanding of AH pathophysiology at the circuit level. AH are often distressing and associated with increased suicide risk. More effective interventions targeted at underlying AH pathophysiology are needed. However, patient heterogeneity presents a major challenge to biological psychiatry research. I aim to address the issue of patient heterogeneity directly by: (a) Taking a dimensional and cross-diagnostic approach. AH are more homogeneous than diagnoses, and my project aims to identify a neurobiological AH signature that transcends diagnosis. (b) Identifying subject- and functionally specific brain regions of interest and

conducting analyses at the individual subject level; (c) Using multimodal neuroimaging within a single cohort to generate more cohesive understanding of connectivity abnormalities associated with AH. This work may expand possibilities for AH treatment using interventions such as repetitive transcranial magnetic stimulation (rTMS), transcranial direct current stimulation (tDCS), or neurofeedback, with an eye toward personalized medicine approaches.

In addition to my work on auditory hallucinations, I contribute actively to other projects investigating psychosis in the Öngür Lab, including investigations of abnormalities involving cerebro-cerebellar circuits in psychosis. Furthermore, I am a collaborator on a study examining sleep-dependent memory consolidation deficits in schizophrenia patients with Dara Manoach, PhD, at the Massachusetts General Hospital Charlestown Navy Yard and Robert Stickgold, PhD, at the Beth Israel Deaconess Medical Center. I also collaborate with Manuel Graña, PhD, and colleagues in the Department of Computer Science and Artificial Intelligence at the Universidad del País Vasco-Spain in San Sebastian, Spain, providing clinical expertise to their application of machine learning algorithms in clinical samples.

Clinical Contributions

For five years after graduation from residency, I spent 10-15% of my time providing attending coverage on a psychotic disorders inpatient unit. As of September 2013, I became Co-Medical Director of McLean OnTrack, a relatively new first-episode psychosis program, where I see patients and lead the development and implementation of new clinical initiatives to improve patient care and engagement.

Teaching Contributions

I spent three years serving as the McLean Site Co-Director for the HMS Psychopathology and Introduction to Clinical Psychiatry course (PS700MJ), organizing clinical site visits for 27 second-year medical and dental students and teaching tutorials. I developed the idea for and organized two workshops on psychosis phenomenology, featuring international experts on self-disorders, including Drs. Josef Parnas and his colleagues at the University of Copenhagen, Denmark. Both workshops were attended by researchers and clinicians at McLean Hospital as well as from other institutions in Boston and out of state. Until last year, I supervised psychiatry residents and medical students when providing attending coverage on the inpatient psychotic disorders teaching unit. I continue to teach residents as part of various didactic series. In the OnTrack Program, I teach psychology interns and provide supervision in the OnTrack Program. Finally, in my role as Director of Clinical Research of the Schizophrenia and Bipolar Disorders Program, I supervise post-doctoral fellows and research assistants in various aspects of clinical research, including interviewing.