

The NKInformer



Nathan S. Kline
Institute

A newsletter of the Nathan S. Kline Institute for Psychiatric Research

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Stuart Moss, MLS, Editor

VISITING SCIENTIST JONAS OLOFSSON FOLLOWED HIS NOSE TO NKI

By Jonas Olofsson, PhD



The best perk of being an academic researcher is that it takes you places. I mean this not as a metaphor, but in a quite literal sense. I was born and raised in Umea, a small town in northern Sweden, with all my family and friends close by.

Growing up, I was comfortable in my familiar environment, but by my early 20s I was desperate to get out. At the time, I was studying Cognitive Science at the local university, and research became a way for me to see the world. I moved halfway across the world to San Diego for my honors project and first international research collaboration. There, I developed a deep affection for California and the USA, and I have since returned for several research visits as a doctoral student, postdoc, and now as a tenured Associate Professor of Psychology at Stockholm University in Sweden.

My research focuses on the human sense of smell and how it can be used as a diagnostic tool in dementia. In psychological and cognitive neuroscience research, smell is a rather unexplored field of study. The “higher” senses, vision and hearing, seem to get all the attention! In fact, western scholars have a long history of sniffing at the sense of smell. Plato and Aristotle both thought human olfaction was unreliable. Freud thought we suppressed our sense of smell because it stimulated our primal instincts. None of this seems true, as recent studies show that human olfaction is, in fact, on par with rats and mice. When I started my career in research, we knew that dementia disorders seemed to affect the sense of smell. Since then, we have learned much more about how smell loss might actually precede

other cognitive deficits in dementia, or at least provide an independent, supplementary marker of ongoing decline.

Speaking of rats and mice, they may not have perfect smell abilities, but they sure work hard. They use their noses to detect and evaluate food sources, threats, and mating opportunities, and if their friends get sick, they smell their breath to learn what food to avoid. Smell is a primary source of information for them, and on the research frontier you will find smell-based neuroscientists working on rodent and drosophila models. Their work provides a solid biological foundation for my own research as a psychologist.

I am fortunate to be part of the Swedish Pro Futura Scientia program, a five-year fellowship awarded to a few young researchers every year. Pro Futura allows us fellows to pursue our boldest research ideas and ensures that our teaching and administrative burden is kept at a minimum. A key feature of the program is a year-long visit at a leading international research institute, with virtually no research restrictions and all expenses paid. When presented with that opportunity, I immediately thought of Donald Wilson at the Nathan Kline Institute. Don's work on olfaction and memory has been a great source of inspiration for me, because it provides a framework for understanding the neurocognitive basis of mammalian olfaction. My wife and I have never lived in New York City before, and spending a year at NKI and New York University seemed like a wonderful opportunity for both of us.

Halfway through my visit, I have already gained invaluable insights. Don and I have developed a 'smell identification' task for rodents that mimics the most common human odor assessment, and the emerging results might help integrate neuroscientific and behavioral insights into the early olfactory changes caused by Alzheimer's disease. Don is a superb mentor, and he and his team have been very patient with this psychologist who is slowly learning the many practical aspects of rodent neuroscience. From Don, I am also learning how to become a better team leader. Don always takes time for his students, and he is as enthusiastic about discussing theoretical issues as

he is about analyzing data or performing surgery. It is a luxury to work with Don's team.

Spending a full year abroad while managing my research projects at Stockholm University is a challenge. In between my animal training sessions, and sometimes in the middle of testing, I squeeze in brief Skype meetings with my students and collaborators back home in Sweden. So if you find me sitting outside NKI talking on the phone in a strange language, rest assured that I am working!

I am grateful to be part of the NKI community and the Emotional Brain Institute. I look forward to the remainder of my year at NKI and to the long-lasting friendships and interdisciplinary collaborations that would not have been possible unless my nose had led me here.

KUDOS



Dr. Russell Tobe, Director of NKI's Outpatient Research Department, will be presented with the Florence Gould Gross Award to Friends of People with Mental Illness at NAMI Rockland's upcoming annual awards dinner. Dr. Tobe is being honored for his longstanding commitment to the community, and his contributions in advocacy, education, and research. For more details, see the Upcoming Events section below.



Rosemarie Perry, PhD, a former NYU Sackler Institute graduate student in Regina Sullivan's lab, has been awarded the 2017 International Society for Developmental Psychobiology Dissertation Award for her dissertation, *The neurobehavioral development of threat and safety*.

GRANTS RECEIVED



Efrat Levy, PhD (Center for Dementia Research) has received a five year R01 grant from the National Institute on Aging entitled "[Preventing early events in A \$\beta\$ -driven pathology in vivo](#)".

COMPLIANCE CORNER



*By Karya Ottey, PhD
IRB Director*

Survey Research

This edition of compliance corner focuses on the challenges and considerations that researchers must have in mind when choosing to pursue research objectives that utilize surveys. As with any other project, the design of the research proposal is to be of sufficient quality to predict that the results will be reliable and valid, the research subjects should be apprised of any risks and benefits that come with participation, and the researcher should ensure the protection of the rights and wellbeing of the individuals involved in the study.

Most projects involving surveys require an expedited or full Board review by the IRB. Many projects also are required to obtain the signed consent of the participants prior to performing the survey. In some situations, the IRB may waive the requirement to obtain a signed consent document and may agree that verbal or electronic consent is acceptable. When the consent

document is not signed, investigators are to provide the relevant consent information in the form of a cover letter, introductory statement (such as in an interview), or introductory screen display (such as when a Web survey is used). Regardless of the method of consent, investigators are obliged to know that the informed consent process is a basic ethical obligation that consists of providing adequate information to the subject about the study, giving the subject the opportunity to consider options, responding to questions the subject may have, and ensuring that the subject understands the information.

When designing survey research, investigators should be cognizant of the difference between the terms "anonymous" and "confidential." When a survey implies that the information is anonymous, researchers must be clear that there is no way to discern the individual in any way. When this claim is made to a subject the investigator should take time to ensure that the combination of data points that are collected, the tracking systems that are used, and the recording procedures are not able to connect to an individual's identity or identification number. This consideration is particularly important when the information collected could have legal, social, or financial implications to the person. When the claim is made that a protocol is confidential, the investigator is letting the subject know that identify of the individuals who participated in a study may be discovered. Often a code number is used in this situation. When the information collected on the survey is sensitive, Certificates of Confidentiality should be obtained for the project to protect the data from subpoena. When surveys are conducted that have subjects reporting abuse or neglect, investigators should remember that they have an ethical obligation to have plans for how to protect these people. Protocols for survey studies with this kind of sensitive data should have plans in place to get people information or help.

Investigators should also know that IRB review should be sought even when the survey is to collect pilot data for a larger project.

FROM AROUND THE INSTITUTE



The Accreditation Committee of the College of American Pathologists (CAP) has awarded accreditation to the **OMH Clinical Laboratories at NKI**, based on results of a recent on-site inspection as part of the [CAP's Accreditation Programs](#).

The lab facility's director, Timothy P. Hilbert, MD, PhD, JD, was advised of this national recognition and congratulated for the excellence of the services being provided. The OMH Clinical Laboratories at NKI is one of more than 7,700 CAP-accredited facilities worldwide.

"The lab has been continuously accredited by CAP for almost 25 years. It's a wonderful testament to the dedication of our staff and the exceptional quality of their work," said Dr. Hilbert.

NKI Director Dr. Donald Goff commented, "Congratulations to Dr. Tim Hilbert and to the entire staff of the OMH Clinical labs on this achievement. Maintaining the distinction of CAP accreditation is no small accomplishment and speaks to the professionalism and commitment to excellence the members of the lab demonstrate daily in support of the patients and mission of the OMH."

The CAP Laboratory Accreditation Program was initiated in the early 1960s and is recognized by the U.S federal government as being equal-to or more-stringent-than the government's own inspection program.

During the CAP accreditation process, which is designed to ensure the highest standard of care for all laboratory patients, inspectors examine the laboratory's records and quality control of procedures for the preceding two years. CAP inspectors also examine laboratory staff qualifications, equipment, facilities, safety program and records, and overall management.

Clinical Psychiatry News

In an article on the status of drug treatments for schizophrenia ([Schizophrenia researchers seek elusive 'quantum leap'](#)) published recently in *Clinical Psychiatry News*, **Dr. Joshua Kantrowitz** (Schizophrenia Research) is one of the featured experts.



The [Healthy Brain Network](#) project of the Child Mind Institute (CMI) recently released its first open dataset including a wide range of information from 664 individuals – behavioral and cognitive assessments, brain imaging, electro-encephalography (EEG), genetics, digital voice and video samples, comprehensive psychiatric and learning assessments, and familial, environmental and lifestyle variables. This data is now [freely available](#) for researchers to use. **Michael Milham, MD, PhD**, Director of the Center for Biomedical Imaging and Neuromodulation at NKI, also directs the Healthy Brain Network. You can read more about this study [on the CMI website](#) and in this [press release](#).

PUBLICATIONS OF NOTE



Center for Dementia Research Director **Ralph Nixon, PhD, MD**, published this review in the July issue of the *FASEB Journal*.

Nixon RA. Amyloid precursor protein and endosomal-lysosomal dysfunction in Alzheimer's disease: inseparable partners in a multifactorial disease. *FASEB J.* 2017 Jul; 31(7):2729-2743.

The Journal of Child Psychology and Psychiatry

Dr. Xavier Castellanos (Child & Adolescent Psychiatry) coauthored this article with NYU Langone Medical Center colleagues.

Aoki Y, Cortese S, Castellanos FX. Diffusion tensor imaging studies of attention-deficit/hyperactivity disorder: meta-analyses and reflections on head motion. *J Child Psychol Psychiatry*. 2017 Jul 3.




Journal of Clinical Psychopharmacology

Joshua Kantrowitz, MD, and colleagues in the Schizophrenia Research program at NKI published this report on the effects of bitopertin in the August issue of the *Journal of Clinical Psychopharmacology*.

Kantrowitz JT, Nolan KA, Epstein ML, Lehrfeld N, Shope C, Petkova E, Javitt DC. Neurophysiological Effects of Bitopertin in Schizophrenia. *J Clin Psychopharmacol*. 2017 Aug;37(4):447-451.




Journal of Neuroradiology

Muhammed Mubeen, PhD (Brain and Behavior Lab), **Babak Ardekani, PhD** (Computational Neuroimaging), and NKI colleagues published this study on the prediction of Alzheimer's disease in the *Journal of Neuroradiology*.

Mubeen AM, Asaei A, Bachman AH, Sidtis JJ, Ardekani BA; Alzheimer's Disease Neuroimaging Initiative. A six-month longitudinal evaluation significantly improves accuracy of predicting incipient Alzheimer's disease in mild cognitive impairment. *J Neuroradiol*. 2017 Jul 1.

Journal of Cognitive Neuroscience

Elizabeth Phelps, PhD (Emotional Brain Institute) and NYU colleagues coauthored this study of the effects of stress on memory.

Goldfarb EV, Mendeleevich Y, Phelps EA. Acute Stress Time-dependently Modulates Multiple Memory Systems. *J Cogn Neurosci*. 2017 Jul 12:1-18.




Journal of Neurochemistry

This review from the lab of **Dr. Raj Balapal** (Analytical Psychopharmacology) appears online in the *Journal of Neurochemistry*.

Basavarajappa BS, Shivakumar M, Joshi V, Subbanna S. Endocannabinoid system in neurodegenerative disorders. *J Neurochem*. 2017 Jun 13.




SCHIZOPHRENIA RESEARCH

The latest research from **Daniel Javitt, MD, PhD** (Schizophrenia Research) and colleagues appears online in *Schizophrenia Research*.

Avissar M, Xie S, Vail B, Lopez-Calderon J, Wang Y, Javitt DC. Meta-analysis of mismatch negativity to simple versus complex deviants in schizophrenia. *Schizophr Res*. 2017 Jul 11.

Javitt DC, Lee M, Kantrowitz JT, Martinez A. Mismatch negativity as a biomarker of theta band oscillatory dysfunction in schizophrenia. *Schizophr Res*. 2017 Jun 27.

Perrin MA, Kantrowitz JT, Silipo G, Dias E, Jabado O, Javitt DC. Mismatch negativity (MMN) to spatial deviants and behavioral spatial discrimination ability in the etiology of auditory verbal hallucinations and thought disorder in schizophrenia. *Schizophr Res*. 2017 May 19.

Deputy Director **Antonio Convit, MD** and NYU School of Medicine colleagues authored this study on obesity and brain function.

Frosch OH, Yau PL, Osorio RS, Rusinek H, Storey P, Convit A. Insulin resistance among obese middle-aged is associated with decreased cerebrovascular reactivity. *Neurology*. 2017 Jun 14.

Patient Preference and Adherence

Jean-Pierre Lindenmayer, MD (Manhattan Psychiatric Center) is the senior author of this paper in the open access journal *Patient Preference and Adherence*.

Shafrin J, May SG, Shrestha A, Ruetsch C, Gerlanc N, Forma F et al. Access to credible information on schizophrenia patients' medication adherence by prescribers can change their treatment strategies: evidence from an online survey of providers. *Patient Preference & Adherence* 2017; 11:1071-81.

INFO UPDATE



Several [photos](#) showing notable people and moments from NKI's history can now be viewed online on the Hudson River Valley Heritage (HRVH) website. HRVH is a digital library, coordinated by the [Southeastern New York Library Resources Council](#), providing free access to historical and cultural documents from New York's southeastern counties. The NKI photos join [various other collections](#) from regional organizations.

CiteScore Metrics

Launched at the end of 2016, Elsevier's freely accessible [CiteScore metrics](#) provide a new tool for assessing journal impact. For a description of these journal metrics, and additional details, you can view the [announcement](#), the [FAQ page](#), and the [factsheet](#).



NCBI (the National Center for Biotechnology Information, a division of the U.S. National Library of Medicine) offers many webinars and courses providing guidance on their various tools and resources. [The NCBI Minute Webinars](#) are shorter webinars (usually about 10-20 minutes) that introduce resources or provide tips. Some of the latest NCBI Minute videos may be of interest to PubMed users:

- Tailor Your PubMed Search Experience with My NCBI
- Automate PubMed Searches & Save Citation Collections with My NCBI
- How You and Your Journal Club Can Contribute Using PubMed Commons

To view these webinars and many others on a variety of topics, visit the [NCBI Minute YouTube page](#), where you can also subscribe to receive alerts about new content.



[NOVELNY](#), the New York Online Virtual Electronic Library, provides a gateway for all New Yorkers to a vast array of electronic resources, including e-books, e-journals, full text magazines and articles, encyclopedias, and other proprietary databases licensed by the New York State Library for free public access. To learn about the resources that are currently available, see the recently revised [NOVELNY Fact Sheet](#).

Health, United States, 2016
With Chartbook on Long-term Trends in Health

[Health, United States, 2016](#) is the 40th annual “report card” on the nation’s health. This year’s [Chartbook](#) examines long-term trends in the health of the U.S. population and the health care system, over the past 40 years. Here are just a few highlights:

- **POPULATION:** The U.S. population grew from 216.0 million to 321.4 million between 1975 and 2015.
- **LIFE EXPECTANCY:** Between 1975 and 2015, life expectancy increased by 6.2 years for the total population and increased for males and females.
- **INFANT MORTALITY:** The infant mortality rate decreased 63%, from 16.07 to 5.90 deaths per 1,000 live births between 1975 and 2015.
- **CAUSES OF DEATH:** Heart disease and cancer were the top two causes of death in the U.S. throughout the past 4 decades.
- **CIGARETTE SMOKING:** Between 1974 and 2015, the age-adjusted prevalence of current cigarette smoking among persons aged 25 and over decreased from 36.9% to 15.6%. In 2015, men and women aged 25 and over with no high school diploma were more than four times as likely to smoke as those with a bachelor’s degree or higher.
- **OBESITY:** The age-adjusted percentage of adults aged 20 and over with obesity increased steadily from 22.9% in 1988–1994 to 37.8% in 2013–2014.
- **HEALTH INSURANCE:** Between 1978 and September 2016 (preliminary data), the percentage of children under age 18 who were uninsured decreased from 12.0% to 5.0%; the percentage with Medicaid coverage increased from 11.3% to 39.2%; and the percentage with private coverage decreased from 75.1% to 53.5%.



The Substance Abuse and Mental Health Services Administration (SAMHSA) has released the [Behavioral Health Barometer, United States, Volume 4](#). Topics addressed in the report include substance use, serious mental illness, serious thoughts of suicide, and behavioral health treatment. The barometer uses data from the National Survey on Drug Use and Health and the National Survey of Substance Abuse Treatment Services and presents findings by age, gender, racial and ethnic categories, poverty status, and health insurance status.

The NKI librarian is always available to assist with literature searching, citation searching (Web of Science, Scopus), bibliographic reference management, and the like. When you have any information needs, or questions about available resources, don’t hesitate to turn to us.

The library offers a comfortable, quiet space for reading, work, and small meetings. To use the library’s Wi-Fi network, ask the library staff for the password.

You can [link to the NKI Library’s website](#) from myNKI. The Library site includes quick links to the NYU Health Sciences Library and to the New York State Library, as well as links to NKI’s own library resources ([journal finder](#), [online catalog](#), [PsychiatryOnline](#), etc.). Remote access is available using NKI’s VPN.

DEPARTMENT OF WONDER

The logo for the journal Nature, featuring the word "nature" in a white serif font on a dark red rectangular background.

From Celluloid to Cells

It's true that data storage media have been steadily shrinking over time, but this remarkable research ([reported in Nature](#)) really pushes the envelope. Using CRISPR gene editing technology, NIH-funded researchers were able to record information in the DNA of living cells. In fact, they encoded a primitive movie in DNA, and then were able to play it back with a high degree of accuracy. You can read more about this mind-boggling work in the [NIMH press release](#) and in this [NIH Director's Blog](#). Here is an excerpt:

The ability to record such sequential events like a movie at the molecular level is key to the idea of reinventing the very concept of recording using molecular engineering, say the researchers. In this scheme, cells themselves could be induced to record molecular events – such as changes in gene expression over time – in their own genomes. Then the information could be retrieved simply by sequencing the genomes of the cells it is stored in.

Although this technology could be used in a variety of ways, the researchers ultimately hope to use it to study the brain.

In the words of one of the researchers: “We want to use neurons to record a molecular history of the brain through development. Such a molecular recorder will allow us to eventually collect data from every cell in the brain at once, without the need to gain access, to observe the cells directly, or disrupt the system to extract genetic material or proteins.”

NKI ON THE ROAD



Three NKI investigators participated in the program at the [2017 Alzheimer's Association International Conference](#) held recently in London.

Nunzio Pomara, MD (Geriatric Psychiatry) gave an oral presentation titled “Relationship between indices of CSF HPA axis activity and AD Biomarkers in late life depression”. His group's work was also presented in a poster: “A neurobiological model of memory impairment in late-life major depressive disorder”. These research findings are derived from Dr. Pomara's last R01 grant on possible Abeta disturbances in late-life major depression.

Ralph Nixon, MD, PhD, Director of the Center for Dementia Research, reported his latest findings in a Developing Topics poster presentation. This work is a collaboration with EIP Pharma, and is described in their [press release](#).

Victor Dyakin, PhD, also presented a poster, titled “Non-Equilibrium Phase Transition in Biochemical Systems. Chain of Chirality Transfer as Determinant of Brain Functional Laterality. Relevance to Alzheimer Disease and Cognitive Psychology”.

All of the conference abstracts and speakers can be searched [here](#).

UPCOMING EVENTS AND SEMINARS



NAMI Rockland Annual Awards Celebration

Wednesday Evening, September 13
Nyack Seaport, Nyack NY

To reserve your seats, call (845) 359-8787 or email
Awards@namirockland.org

Dr. Russell Tobe, Director of NKI's Outpatient Research Department, will be presented with the Florence Gould Gross Award, named for NAMI Rockland's founding president. The recipients of this award are selected for their substantial contributions to improving the quality of life and advancing the cause of individuals and families impacted by mental illness.

<http://www.namirockland.org/awards.html>

The top of the poster features the logos for NYU Langone Medical Center and NYU Neuroscience.

Third Annual Rodolfo Llinás Lecture

A central illustration of a neuron with a yellow cell body and red branching processes.

Margaret S. Livingstone, Ph.D.
Takeda Professor of Neurobiology
Harvard Medical School

September 18, 2017, 4:00 pm
Farkas Auditorium
NYU Langone Medical Center

Host and Scientific Organizer, Dr. György Buzsáki, M.D., Ph.D.
Sponsored by Donna and Roys Poyiadjis

Center for Biomedical Imaging and Neuromodulation Presents

Francis Lee, MD, PhD

Professor and Vice Chair for Research,
Department of Psychiatry,
Weill Cornell Medical College

The Role of Genetic Variation in the Endocannabinoid System in Adolescent Brain Development

Monday, August 14, 11 am



Statewide Grand Rounds

The Bureau of Psychiatric Services, in conjunction with the Bureau of Education & Workforce Development (BEWD), announced the availability of select Statewide Grand Rounds (SWGR) in the Statewide Learning Management System (SLMS), located at <https://nyslearn.ny.gov/>. CE credits are available upon successful completion of a course.

To access the SWGR, log in to the [Statewide Learning Management System](#) (SLMS), and click on Find Learning. Enter the course code or course name in the find box. After you have found the course you are looking for, click on the Enroll button and Launch the course.

For a list of available courses, contact bewd@omh.ny.gov.

The New York State Office of Mental Health (OMH) regularly hosts an interactive video broadcast covering the latest research, technology, and treatment implementation in the fields of psychiatry and psychology. These programs are recorded, and the archived Statewide Grand Rounds programs can be viewed [on the OMH website](#).

NKI PUBLICATIONS UPDATE

Below is a list of references that have been added to the NKI publications database since the previous update. The full database contains over 5,600 items dating back to 1995, and can be searched from the [myNKI website](#).

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Benham RS, Hewage NB, Suckow RF, Engin E, Rudolph U. Prodepressant- and anxiogenic-like effects of serotonin-selective, but not noradrenaline-selective, antidepressant agents in mice lacking $\alpha 2$ -containing GABA(A) receptors. *Behav Brain Res*. 2017 Jun 3;332:172-179.

Boyas JF, Negi NJ, Valera P. Factors Associated to Health Care Service Use among Latino Day Laborers. *Am J Mens Health*. 2017 Jul;11(4):1028-1038.

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de Leon MJ, Li Y, Okamura N, Tsui WH, Saint Louis LA, Glodzik L, Osorio RS, Fortea J, Butler T, Pirraglia E, Fossati S, Kim HJ, Carare RO, Nedergaard M, Benveniste H, Rusinek H. CSF clearance in Alzheimer Disease measured with dynamic PET. *J Nucl Med*. 2017 Mar 16.

FeldmanHall O, Dunsmoor JE, Kroes MCW, Lackovic S, Phelps EA. Associative Learning of Social Value in Dynamic Groups. *Psychol Sci*. 2017 Jul 1.

Frosch OH, Yau PL, Osorio RS, Rusinek H, Storey P, Convit A. Insulin resistance among obese middle-aged is associated with decreased cerebrovascular reactivity. *Neurology*. 2017 Jun 14.

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Mangone A, Yates KF, Sweat V, Joseph A, Convit A. Cognitive functions among predominantly minority urban adolescents with metabolic syndrome. *Appl Neuropsychol Child*. 2017 Feb 22:1-7.

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Zoefel B, VanRullen R. Oscillatory Mechanisms of Stimulus Processing and Selection in the Visual and Auditory Systems: State-of-the-Art, Speculations and Suggestions. *Front Neurosci.* 2017 May 26; 11:296.

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