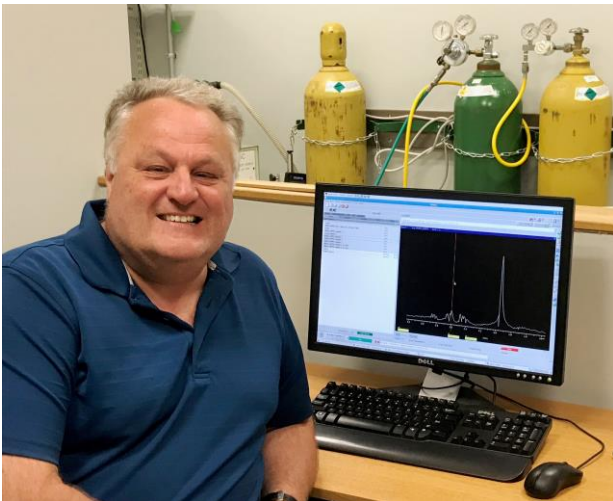

Donald C. Goff, MD, Director
Antonio Convit, MD, Deputy Director
Thomas O'Hara, MBA, Deputy Director, Institute Administration

July – August 2019

Stuart Moss, MLS, Editor

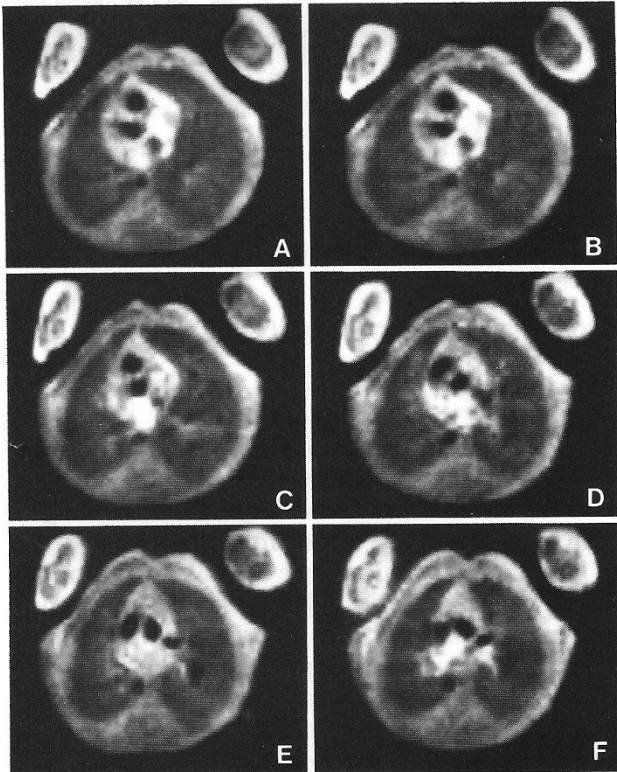
A CAMPFIRE WITH LEGENDS

By David Guilfoyle, PhD



Dr. David Guilfoyle came to NKI in 1998 and is currently an investigator in the Center for Biomedical Imaging and Neuromodulation (C-BIN). His work in the field of MRI extends back to the 1980's (as you will read below) and up to today's cutting-edge technology using a 21.1 T magnet, the world's strongest MRI machine, at the National High Magnetic Field Laboratory in Tallahassee, Florida.

At the May, 2019 annual meeting of the International Society for Magnetic Resonance in Medicine (ISMRM) held in Montreal, the organizing committee hosted a series of "[Pioneer Campfire](#)" sessions. The aim of these sessions was for participants to give a personal perspective on the early days of MRI. The sessions were organized according to themes, such as "Early Years at GE R&D", "Pioneers of fMRI", etc. Quite unexpectedly, I was invited to talk about the early years in Nottingham. (I think this was only because the committee was short on speakers!) In the early 1980's, I did my PhD at the University of Nottingham, where Echo Planar Imaging (EPI) was invented. This is the technique routinely used today in most functional and resting state MRI studies. Back in those days we had a 0.1 T resistive magnet. For those not familiar with MRI, the field strength of NKI's human scanner is 3 T – that's 30 times stronger – but despite this huge difference we managed to acquire the world's first human EPI data. This was before all the technological advances we currently enjoy in the world of MRI, such as active screening, advanced gradient coil design, and parallel acquisition. When I was at Nottingham, we scanned infants suffering from cardiac and respiratory problems.



When I started to put together my “campfire” presentation, I dug out images from some of the old papers and was quite surprised by the image quality, which really isn’t bad even by today’s standards. The images shown above are from an 8-month-old infant with cystic fibrosis but normal heart. The 0.1 T scanner was in the physics department at Nottingham and definitely had a ‘physics lab’ look. So, in order to give the magnet a more friendly appearance, we put child stickers around the Faraday cage surrounding the magnet. This magnet has been in the London Science Museum for many years now, and as you can see from the picture of the magnet display shown below, our kiddie stickers made it all the way to the museum. The Wellcome trust has recently given the London Science Museum [10 million pounds to create new medicine galleries](#) which will include the original Nottingham scanner. The galleries will open in October 2019, so if you are in London, I suggest you check it out – it’s free! My brief presentation at the conference went well, and I tried to make it personal with a few funny stories. Although they should not be put in print, I will gladly share them with you over a beer or two.

Peter Morris did most of the presentation and talked about the early days when the principles of MRI were developed by Sir Peter Mansfield, who shared the Nobel Prize for Medicine and Physiology with Paul Lauterbur in 2003. For those interested in a more detailed story of the early MRI days, [this website](#) includes a clip of the BBC’s Tomorrow’s World show which covered the breakthrough in MRI in the 1970’s. The magnet is red in the video but it’s the same magnet. It was painted yellow when the infant scanning started in the eighties.

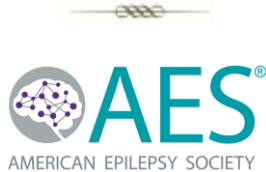
My part in the development of EPI was small but it was nice to be included as part of the history of the early days of MRI, although I think that just means I’m getting old.



GRANTS RECEIVED



Dr. Samuel Neymotin (Biomedical Imaging & Neuromodulation) received a three-year award from the U.S. Army Mathematical Sciences Division for a grant entitled “Training biophysical thalamocortical models to play games through biologically realistic reinforcement learning rules”.



Dr. Justin Botterill (Dementia Research) received an award from the American Epilepsy Society for a Postdoctoral Research Fellowship entitled “Mossy cells as a therapeutic target in epilepsy”. Dr. Botterill is one of 25 early career epilepsy scientists awarded a fellowship or grant this year. The Postdoctoral Research Fellowship provides up to \$50,000 for stipend and travel support, along with one year of AES membership.

FROM AROUND THE INSTITUTE

NKI's Lactation Room

NKI is dedicated to meeting the needs of its nursing mothers. In recognition of the important health benefits that breastfeeding offers to both babies and mothers, we are pleased to announce that we now have a quiet, private space designated solely as a lactation room.

In the summer of 2018, Room #S201G located within the NKI Library was designated for this purpose. Additional inspiration followed when Dr. Mary Griffin, NKI's Employee Assistance Program (EAP) Coordinator, connected with Laurie

Messenger of the Rockland County Department of Health. Ms. Messenger coordinates a NYS Department of Health grant to establish a breastfeeding-friendly care continuum to increase breastfeeding initiation, exclusivity, and duration in the Rockland County community. The Rockland County Department of Health guided the process and provided the link to the grant available from the NYS Department of Health. Through this connection and the generosity of the Creating Breastfeeding Friendly Communities initiative, the Institute was able to furnish and decorate this soothing space shown below.



This lactation room is open to the entire NKI community as well as to visitors. The warm, inviting space features a comfortable chair, sound machine, books and other resources for breastfeeding mothers. There is a nearby bathroom and kitchen with a refrigerator for temporary storage of breast milk, if needed.

On June 5th, three facilities – NKI, Rockland Psychiatric Center (RPC), and Rockland Children's Psychiatric Center (RCPC) – were presented with awards and recognized by the Department of Health for being Breastfeeding Friendly Worksites (see photo on next page).

Making the environmental changes for this dedicated lactation room required collaboration between the Rockland EAP/Worksite Wellness Committee, NKI Administration and Human Resources Departments, along with the Rockland County and NYS Departments of Health.



NKI is committed to supporting the rights of nursing mothers in the workplace. An employee who wishes to avail herself of this benefit should contact the Human Resources Office.

To learn more about the rights of nursing mothers:

✓ NYS employees may view the full version of this policy by clicking the following links:

https://www.cs.ny.gov/attend_leave_manual/021AbsenceWithPay/21_12/PolicyBulletin08-01.htm

https://www.cs.ny.gov/attend_leave_manual/021AbsenceWithPay/21_12/PolicyBulletin10-02.htm

✓ RFMH employees may refer to the Handbook for Employees at this link:

http://corporate.rfmh.org/human_resources/forms/EmployeeHandbook2016.pdf

✓ Contact the Employee Assistance Program (EAP) Coordinator for information and resources to support mothers who continue breastfeeding once they return to work and to support supervisors in establishing arrangements that accommodate work routines and create a supportive environment.

Journal of Cell Science

Yohan Kim (Dementia Research) is currently a postdoctoral fellow in the lab of Efrat Levy. In conjunction with his [recently published a paper](#) in the *Journal of Cell Science*, Dr. Kim was [featured in a “First Person” interview](#) in the journal, in which he discusses his research and the development of his career.

BEHAVIORAL HEALTH NEWS.

The [summer issue](#) of *Behavioral Health News* includes an article by **Dr. Marilena Lekas** and **Crystal Lewis** (Social Solutions & Services):

Lekas HM, Lewis CF, Trinkle J. Integrating the Social and Cultural Determinants of Health into Peer Advocates Training. *Behavioral Health News* 2019; 27,34.

Medscape

Dr. Dan Iosifescu (Clinical Research) provided commentary for a *Medscape Medical News* report – [“Ketamine Promising in Cocaine Addiction”](#) – on a study recently published in the *American Journal of Psychiatry*.



NYS OMH has been releasing a series of brief “Message from the Commissioner” videos addressing various aspects and programs of the Office of Mental Health. These can be viewed by logging in to the OMH Hub [here](#). You can view previous installments of the series by clicking Channels and selecting OMH Commissioner Message.

Yoga, Dance, and Exercise in the NKI Library

Yin Yoga

Tuesdays at 4:30 pm – Led by Lindsay Laughlin. A simple 30-minute guided yoga/meditation. Bring a mat.

Dance

Wednesdays from 12-12:30 pm – Led by Qawi Telesford. Casino dance to Timba music. Sneakers preferred.

Cardio

Mondays and Thursdays from 4:30-5 pm – Led by Catarina Cunha. Full body cardio/strength training. Bring a mat and water.

Additional workouts can be undertaken using the Smart TV at your leisure. Grab a friend and go!

PUBLICATIONS OF NOTE



Two open access papers by **Maya Opendak**, **Regina Sullivan**, and Emotional Brain Institute colleagues were recently published in *Frontiers in Behavioral Neuroscience*.

Junod A, Opendak M, Ledoux JE, Sullivan RM. [Development of Threat Expression Following Infant Maltreatment: Infant and Adult Enhancement but Adolescent Attenuation.](#) *Frontiers in Behavioral Neuroscience* 2019; 13:130.

Robinson-Drummer PA, Opendak M, Blomkvist A, Chan S, Tan S, Delmer C et al. [Infant Trauma Alters Social Buffering of Threat Learning: Emerging Role of Prefrontal Cortex in Preadolescence.](#) *Frontiers in Behavioral Neuroscience* 2019; 13:132.

The logo for Nature Human Behaviour, with "nature" in a smaller font above "human behaviour" in a larger font, both in white on a dark blue background.

nature
human behaviour

Michael Milham (Biomedical Imaging & Neuromodulation) and colleagues published this Comment in *Nature Human Behaviour*.

Zuo XN, Xu T, Milham MP. [Harnessing reliability for neuroscience research.](#) *Nat Hum Behav.* 2019 Jun 28. PMID: 31253883.

The logo for Cell Reports, featuring a stylized brain image in the background and the text "Cell Reports" in white on a dark background.

Cell Reports

Annie Barczak, **Charles Schroeder**, and colleagues in the Translational Neuroscience group recently published this open access article in *Cell Reports*.

Barczak A, Haegens S, Ross DA, McGinnis T, Lakatos P, Schroeder CE. [Dynamic Modulation of Cortical Excitability during Visual Active Sensing.](#) *Cell Rep.* 2019 Jun 18;27(12):3447-3459.e3. PMID: 31216467.

The logo for Nature Communications, featuring a stylized wave graphic above the text "nature COMMUNICATIONS".

nature
COMMUNICATIONS

Arnaud Falchier, **Gary Linn**, **Michael Milham**, **Charles Schroeder** (Biomedical Imaging & Neuromodulation) and colleagues have a new open access paper in *Nature Communications*.

Alekseichuk I, Falchier AY, Linn G, Xu T, Milham MP, Schroeder CE, Opitz A. [Electric field dynamics in the brain during multi-electrode transcranial electric stimulation.](#) *Nat Commun.* 2019 Jun 12; 10(1):2573. PMID: 31189931.

SCIENTIFIC REPORTS

Catarina Cunha (Emotional Brain Institute) is the corresponding author of this open access article in *Scientific Reports*.

Todorov G, Mayilvahanan K, Ashurov D, Cunha C. [Amelioration of obsessive-compulsive disorder in three mouse models treated with one epigenetic drug: unraveling the underlying mechanism](#). Sci Rep. 2019 Jun 19;9(1):8741. PMID: 31217515.



The latest publication from the laboratory of **Raj Balapal** (Analytical Psychopharmacology) is a review appearing in the *British Journal of Pharmacology*.

Basavarajappa BS, Joshi V, Shivakumar M, Subbanna S. [Distinct Functions of Endogenous Cannabinoid System in Alcohol Abuse Disorders](#). Br J Pharmacol. 2019 Jul 2. PMID: 31265740.



Melissa Alldred, Steve Ginsberg (Dementia Research) and colleagues from NCI and Cornell have a new paper in the *FASEB Journal*.

Alldred MJ, Chao HM, Lee SH, Beilin J, Powers BE, Petkova E, Strupp BJ, Ginsberg SD. [Long-term effects of maternal choline supplementation on CA1 pyramidal neuron gene expression in the Ts65Dn mouse model of Down syndrome and Alzheimer's disease](#). FASEB J. 2019 Jun 10. PMID: 31180719.

Developmental Neurobiology

The latest publication from the laboratory of **Efrat Levy** (Dementia Research) appears in *Developmental Neurobiology*.

D'Acunzo P, Hargash T, Pawlik M, Goulbourne CN, Pérez-González R, Levy E. [Enhanced Generation of Intraluminal Vesicles in Neuronal Late Endosomes in the Brain of a Down Syndrome Mouse Model with Endosomal Dysfunction](#). Dev Neurobiol. 2019 Jul 6. PMID: 31278881.



Helen Scharfman (Dementia Research) authored this review article published in the open access journal *Epilepsy Currents*.

Scharfman HE. [The Dentate Gyrus and Temporal Lobe Epilepsy: An "Exciting" Era](#). Epilepsy Curr. 2019 Jun 24. PMID: 31232111.




Jim Clelland (Clinical Research) and colleagues at Columbia published their latest work in *Schizophrenia Research*.

Clelland JD, Smeed J, Cremers S, Clelland CL. [A tetrahydrobiopterin deficit finding in schizophrenia: A confirmation study](#). Schizophr Res. 2019 Jun 21. PMID: 31230962.

INFO UPDATE



Google Search has become such a powerful and ubiquitous utility that many of use it on a daily basis without giving it a second thought. But a recent post on The Keyword blog – “[How we keep Search relevant and useful](#)” – provides a little peek “under the hood” at the workings of this valuable tool.



Manuscript Submission System

The National Library of Medicine (NLM) has announced plans to release a new [NIH Manuscript Submission \(NIHMS\)](#) system later this year. The 10-minute video “[A New NIHMS \(and PACM API\) to Support Public Access](#)” provides context for the decision to rebuild the NIHMS and gives an idea of what changes to anticipate. The current NIHMS system has supported the NIH Public Access Policy since 2005 and has received more than 800,000 submissions. The new system will allow NLM to continue supporting public access to publicly funded research results for decades to come.



MedlinePlus MAGAZINE

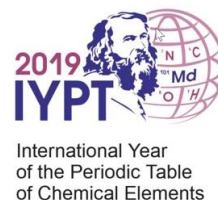
[NIH MedlinePlus magazine](#) is a quarterly publication of the National Library of Medicine and the National Institutes of Health. It provides updates on breakthroughs from NIH-supported research, as well as health tips and wellness overviews vetted by NIH experts. The magazine’s website features easy-to-navigate menus, social media sharing, and a mobile-friendly design that works on any screen you use. And now, [every article is available in both English and Spanish](#). Look for the toggle button to switch between languages.

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



2019 is the 150th anniversary of the Periodic Table of Chemical Elements, and has been designated the [International Year of the Periodic Table](#). The National Center for Biotechnology Information (NCBI) is also celebrating, by launching the [PubChem Periodic Table](#) and corresponding Element pages, where you can find chemical element data and data sources. For more info, check out the [PubChem blog](#).



On a recent visit to the Countway Library of Medicine at Harvard, I encountered a [Short Story Dispenser](#). I pushed a button and instantly received a free printout of a (long) [poem by William Wordsworth](#). But you don't need a dispenser to get a free story. Just visit [Short Édition](#) and select a story length (or choose [Classic](#)), and voilà! Instant gratification. It's also possible to submit your own work, and to have stories sent to your mailbox.

NKI ON THE ROAD



Emily Stern (Clinical Research) attended the 26th Annual [International OCD Foundation \(IOCDF\) Conference](#) held recently in Austin, Texas. Dr. Stern was a moderator for a session on Research Highlights at the pre-conference [Research Symposium](#), and was a part of a [symposium on Sensory Symptoms in OCD](#) as part of the main conference.



In April, members of the **Manhattan Psychiatric Center research team** (Sophia Borne, Abraham Goldring, Anzalee Kahn, and Jean-Pierre Lindenmayer) attended the [Schizophrenia International Research Society's \(SIRS\) Conference](#) in Orlando, Florida and presented the findings of various studies conducted at MPC. The SIRS conference is an annual meeting that aims to bring together scientists studying schizophrenia and related disorders to exchange the latest advances in research. The research team presented each of the three days of the conference.

A list of NKI's contributions to the conference was published in the May-June issue of the *Informer*. All conference abstracts are published in this *Schizophrenia Bulletin* [supplement](#).



Drs. Lindenmayer and Khan (Manhattan Psychiatric Center) also participated in a symposium at the [2019 American Society of Clinical Psychopharmacology meeting](#) in Arizona. They were the Chair and Co-Chair, respectively, of a symposium on "Digital Technology Advancements and Potential for Assessing Behavior in Clinical Trials". The session focused on digital technology research and how these technologies, guided by clinical experts, are being implemented in clinical trials. It included talks on passive digital phenotyping (Mindstrong), Virtual Reality (TRIPP), ePROs and remote assessment/siteless trials (Otsuka).

EVENTS AND SEMINARS

NKI Science Day – 2019

Tuesday, September 24th, 2019

11:00 am – 3:00 pm

NKI Auditorium

Science Day will bring together faculty, staff, and trainees from all departments at NKI to raise awareness of the ongoing research activities throughout the Institute. The event will feature select presentations, followed by a comprehensive poster session.

The deadline for submissions is August 22.

Center for Dementia Research Seminar Series

Held on Thursdays at 10 am

Jie Shen, PhD

Harvard Medical School, Boston, MA

***Presenilin and APP in familial
Alzheimer's disease***

September 19th

Phillip De Jager, MD, PhD

Columbia University Medical Center, NY

***A single cell network approach uncovers novel
targets for Alzheimer's disease***

September 26th

Victor Faundez, MD, PhD

Emory University, GA

***Systems Biology of Rare Neurological
Disorders***

October 3rd

Michelle Ehrlich, MD

Icahn School of Medicine, Mount Sinai, NY

***Experimental preclinical validation of targets
derived from the NIA accelerating medicines
partnership -Alzheimer's Disease project***

October 31st

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 6,000 items dating back to 1995, and can be searched from the [myNKI website](#).

Alekseichuk I, Falchier AY, Linn G, Xu T, Milham MP, Schroeder CE, Opitz A. Electric field dynamics in the brain during multi-electrode transcranial electric stimulation. *Nat Commun*. 2019 Jun 12; 10(1):2573. PMID: 31189931.

Allred MJ, Chao HM, Lee SH, Beilin J, Powers BE, Petkova E, Strupp BJ, Ginsberg SD. Long-term effects of maternal choline supplementation on CA1 pyramidal neuron gene expression in the Ts65Dn mouse model of Down syndrome and Alzheimer's disease. *FASEB J*. 2019 Jun 10. PMID: 31180719.

Amro I, Ghuloum S, Mahfoud Z, Opler M, Khan A, Hammoudeh S, Hani Y, Yehya A, Al-Amin H. Cross-cultural adaptation of the Arabic Positive and Negative Syndrome Scale in schizophrenia: Qualitative analysis of a focus group. *Transcult Psychiatry*. 2019 May 27. PMID: 31130104.

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D'Acunzo P, Hargash T, Pawlik M, Goulbourne CN, Pérez-González R, Levy E. Enhanced Generation of Intraluminal Vesicles in Neuronal Late Endosomes in the Brain of a Down Syndrome Mouse Model with Endosomal Dysfunction. *Dev Neurobiol*. 2019 Jul 6. PMID: 31278881.

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