Vadim Levin, PhD
Professor Earth & Planetary Science
Rutgers University

Friday, December 7, 2018
Noon – 1:30 p.m.
Dean’s Conference Room
Rutgers Robert Wood Johnson Medical School
web: http://www.rci.rutgers.edu/~vlevin

All current and retired faculty, staff, and students are welcome to attend. Lunch is available for a $10 contribution at the meeting. Attendees may park without a parking permit in general parking in lots A, B, and C, located across from the medical school on Hoes Lane West.

Dr. Levin received a master’s level degree in exploration geophysics at the Gubkin Russian State University of Oil and Gas in 1988. He obtained his PhD in seismology at Columbia University’s Lamont-Doherty Earth Observatory. He was a postdoctoral fellow and research scientist at Yale before joining the Rutgers faculty in 2002.

Dr. Levin was the lead author with colleagues from Yale on the much publicized study: “Seismic evidence for a recently formed mantle upwelling beneath New England” published in GEOLOGY (January 2018). Data were obtained from an array of seismic sensors operating in eastern North America for four or more years, during which period they have detected multiple seismic shear waves from distant earthquakes. Traversing the Earth’s mantle, these waves offer a means of probing the state of the Earth’s materials some 100-300 km below the surface. Analysis of times it took these waves to traverse the mantle and the attributes of their pulse shapes lead to a conclusion “a narrow thermal upwelling is present in the upper mantle beneath New England.” The lack of obvious surface features, such as volcanic or earthquake activity, suggests that this is a geologically recent development (i.e. on a scale of tens of millions of years).
ELECTION FOR OFFICERS OF RFA

Members are encouraged to volunteer to serve as an officer or as a member of the standing committees. One can also volunteer to serve as newsletter editor or co-editor. Please email seiden@rwjms.rutgers.edu

A volunteer for Secretary is needed as Dr. Riley is stepping down. The secretary maintains the e-mail list and prepares and distributes the e-notices of upcoming speakers.

CHERYL DREYFUS, PHD

RFA Speaker on Sept. 21, 2018

Dr. Dreyfus provided the following summary of her research seminar

For the last 20 years the Dreyfus lab has been examining molecules that may reverse demyelination, such as occurs in multiple sclerosis. In particular, their work has focused on brain derived neurotrophic factor (BDNF), a member of the neurotrophin gene family. In early studies, papers by Du, Van’t Veer and colleagues, discovered that BDNF enhances proliferation and differentiation of oligodendrocyte progenitor cells in culture suggesting that it may be effective in enhancing remyelination in vivo.

In the seminar, Dr. Dreyfus focused on studies that examined effects of BDNF in vivo and studies using the cuprizone demyelinating model. Her lab found that BDNF reduces demyelination and enhances remyelination in this model (VonDran et al, 2011). This is a direct effect of BDNF on oligodendrocytes mediated through the trkB receptors. In exploring endogenous sources of BDNF in the brain that could be (continued on page 3)
Robert Wood Johnson Medical School Earns Full LCME Accreditation

The Liaison Committee on Medical Education (LCME), which is the accrediting body for education programs for medical degrees in the United States, sent its final communication following a survey and site visit completed in March, confirming that Rutgers Robert Wood Johnson Medical School received full accreditation for eight years.

Congratulations and thanks to Carol A. Terregino, MD, senior associate dean for education and academic affairs, for her excellent leadership preparing for and during the LCME site visit; Linda Tillman, program administrator in the Office of Education, and Liesel Copeland, PhD, director of admissions and medical education, site visit coordinator.

SOURCE: Dean’s Weekly View Oct 26, 2018

WELCOME CLASS OF 2022

Carol A. Terregino, MD, senior associate dean for education, reported “This is the most diverse class ever,” and provided the following information about the diversity of the recently arrived Robert Wood Johnson Medical School Class of 2022.

Applications ~5500 (up 40%) compared with a national increase of 2.2%
180 matriculants (up from 170)
53% female
13% educational or SES disadvantaged
20% underrepresented [Black, Hispanic]
39% self-describe as White.

ACKNOWLEDGEMENTS

I thank David Seiden, Paul Manowitz, and Gordon Schochet for editing/proof-reading, and Ruthe Gardino, who provided valuable assistance throughout the year.

(continued from page 2)

manipulated potentially to enhance remyelination, they identified astrocytes as a relevant population. In particular, they found that astrocytes within the lesion can be stimulated to increase synthesis and release of BDNF by metabotropic glutamate receptor (mGluR) agonists injected directly into the lesion site. These observations may be relevant to demyelinating diseases, such as multiple sclerosis where increases in metabotropic receptors have been observed in active chronic lesions as reported by Geurts and colleagues.

To begin to explore possible therapeutic implications of the work, recent studies evaluated mGluR agonists when they are injected peripherally, by intraperitoneal injection. The agonists increase BDNF, as well as myelin proteins, and, in exciting new studies, actually reverse demyelination. Moreover, the effects are inhibited by antagonists injected into the lesion site, suggesting that effects of a peripheral injection are due to local interactions with receptors in the demyelinated site.

To determine whether these effects may extend to multiple models of demyelination, another model disease, experimental autoimmune encephalomyelitis (EAE), was examined. The mGluR agonists ameliorate clinical signs of this condition, suggesting that multiple demyelinating injuries may be impacted by mGluR agonists.

In this, the Dreyfus lab continues initial work to examine the role of growth factors on oligodendrocyte development and response to injury. Their hope is that the studies will push them in new directions to explore therapies relevant to demyelinating diseases such as multiple sclerosis.
RUTGERS RESEARCHERS IMPACTED BY RIO MUSEUM FIRE

Rio de Janeiro is far away, and a fire in a 200 year old building is likely to escape attention, except that the building was the National Museum of Brazil, a major archive of specimens cataloging the biodiversity of Brazil. The quest to describe new species seems never ending, and taxonomists sense an urgency when faced by disappearing species and threats of mass extinctions. It has been believed that most life forms on earth are insects and tropical ones as well (probably microorganisms deserve this title). The museum’s huge insect collection was destroyed by the fire. Closer to home, this directly impacted the work of Rutgers researchers who had discovered new species of a termite and a dragonfly and relied on Brazil’s comprehensive insect collection for comparison with the putative new species. Source: TARGUM

EDITORIAL NOTE ON TB CONTROL

Through the 1970s New Jersey’s DOH supported local health departments in identification of TB cases. Compliance with any long-term therapy is problematic. As cases of active TB were identified, they were referred to local health departments. New Jersey purchased drugs, and local health departments were funded to observe individuals taking their drugs. It was very successful. But around 1980 when the number of confirmed active TB cases dropped below 1,000, the State declared victory and stopped funding the community based programs. By the mid-80s, as a consequence of haphazard management, multi-drug resistant TB emerged as a major health problem in New Jersey. The news is better now, with fewer than 250 new cases identified in NJ in 2017, mostly among people born in other countries where TB continues to be devastating. Recalling the bad decision of the early 1980’s, clearly complacency is not warranted.

By Michael Gochfeld, MD, PhD

STUDENT GLOBAL HEALTH REFLECTION: TB CONTROL IN PERU

By Joyce Lu (RWJMS M1)

After college graduation, I had the opportunity to intern with Asociación de Personas Afectadas por Tuberculosis (ASPAT) in Peru through my undergraduate institution. With an interest in health policy, I sought the internship to learn more about health care and governance.

One of the components of the World Health Organization’s (WHO) Stop TB strategy is directly observed therapy, short course (DOTS). The 5 elements of DOTS are political commitment of the state, detection and diagnosis, treatment delivery, drug supply and management, and monitoring and evaluation. The projects that I worked on were guided by the DOTS framework, including the implementation of a biometric fingerprint system to monitor treatment adherence as well as a transportation system for delivering sputum samples to laboratories.

However, ASPAT’s mission was also to provide advocacy and psychosocial support to current and former tuberculosis patients in order to combat stigma against individuals affected by the disease. I learned from ASPAT’s founders and directors, former patients themselves, about how the stigma resulted in social isolation of patients, leading to depression, alcoholism, and loss of desire to seek treatment. Thus, ASPAT’s work also prioritized creating a sense of community, visiting hospitals and (continued on page 5)
(continued from page 4) clinics to hold support groups. Each of these tuberculosis eradication efforts, from treatment to patient support, could also be monitored and evaluated in order to be calculated in terms of economic advancement and global development for Peru.

During my internship, I also visited La Oroya, an Andean mining town heavily polluted with lead, cadmium, and arsenic from a plant owned by the US-based Doe Run Corporation. In 1999, the peruvian director general of environmental health and ministry of health reported that 99% of children there had dangerously high blood lead levels, averaging at triple the WHO's limit. Through conversations with community members, I learned that there has been little change or improvement in conditions, despite the Doe Run Corporation’s development of an environmental management plan that permitted the company to continue their operations. Health is no longer synergistic with global development when a nation heavily relies on its mining industry for economic development.

In comparing these cases, I saw the power of “global health” in mobilizing research, funding, and recognition for health issues. While there is still much work to be done in the field, the WHO not only developed frameworks for effectively treating and stopping the spread of TB, but also mobilized states to invest in and develop their own strategies to address the disease.

Furthermore, an emphasis on monitoring and evaluation served to both evaluate the success of TB programs and also make health relevant in the language of productivity and economic development. With environmental degradation ever present and disproportionately affecting socioeconomically disadvantaged and politically underrepresented populations, I am interested in working at the intersection of global and environmental health, learning from the successes and failures of previous and ongoing global health initiatives. Now an RWJMS M1, I hope to return to Peru next summer to learn from and work with efforts to address pollution in mining communities.

EMERGING INFECTION: ACUTE FLACCID MYELITIS

AFM, a “new” polio-like disease noted since 2014, has caused paralysis in 22 states including recently in New Jersey. Just as the world is poised to celebrate the global eradication of polio, a new disease with very similar clinical manifestations, has been identified. The modal age of attack is four years. Symptoms, beginning with a “cold”, progress to weakness or frank paralysis. The CDC cautiously says the cause of disease is a mystery, but epidemiologists have linked the cases of AFM to outbreaks of enterovirus (EV-D68), a virus which usually causes only mild, non-paralytic symptoms. Note that the polio virus is also an enterovirus.

PROGRESS IN GLOBAL POLIO ERADICATION

In 2017, there were fewer than 100 cases of polio worldwide of which 3/4 were vaccine related. Wild cases documented only in Afghanistan and Pakistan (see: http://polioeradication.org/polio-today/polio-now/)

REMINDER: You don’t have to actually be FAR AWAY to contribute a note to “News from Afar” Send to: gochfeld@eohsi.rutgers.edu
RUTGERS EXPERT, HELMUT ZARBL, PhD, DISCUSSES THE IMPACT OF DAYLIGHT SAVING TIME ON THE BODY [reprinted from Rutgers Today with permission]
Byline Caitlin Coyle
November 1, 2018

Helmut Zarbl, director of Rutgers Environmental and Occupational Health Sciences Institute and chair of the Environmental and Occupational Health Department at the School of Public Health, says people who turn their clocks back by one hour in observance of daylight savings time won’t get “an extra hour” of sleep.

Sunday morning [Nov 4], most people in the United States turned their clocks back by one hour in observance of daylight saving time, but didn’t get “an extra hour” of sleep. Daylight savings time just changes our circadian rhythm, which can disrupt our biological clocks and impact our health.

Dr. Zarbl is an expert in circadian rhythm and its influence on sleep-wake cycles, hormone release, eating habits, and more. C.C. asked him to explain how daylight savings time affects us.

Q: How does daylight saving time affect the body’s circadian rhythm?

Zarbl: Circadian rhythm regulates many important biological processes, such as hormone production and sleep patterns, and is largely controlled by external cues in the environment – mainly light. Changing sleep-wake cycles by an hour has an effect on our circadian clock. Since light is normally a key regulator of our biological clock, the change will shift the phase of our rhythm away from that of the central pacemaker. As with any phase change, this will cause disturbances in sleep, metabolism, mood, bodily functions, and productivity.

Q: What are some common effects of the time change on our body?

Zarbl: They may include feeling sleepy, listless, stressed, and tired for a while. Daylight savings time-associated changes result in higher rates of automobile and workplace accidents. A few studies have even suggested a slight increase in heart attacks and stroke, probably in those already at a higher risk.

Q: Are there any tips/suggestions you have people to avoid the negative effects of the time change?

Zarbl: Let me answer that in two ways. You are not getting an extra hour of sleep; you are simply changing the phase. As with any change in sleep cycles due to shift work, jet lag, etc., it takes about a week to reset your biological clock. Do not fight the change or keep referring to the previous time schedule. The sooner you adapt, the sooner you will feel normal again, so adjust your eating and sleep schedules accordingly. You change the clock at 2 a.m. on a Sunday, so don’t wait until Monday to make the necessary change. You should also avoid using caffeine and other stimulants or drugs to help adjust.

Secondly, winter affects exposure to sunlight, so our biological clocks gradually adjust and synchronize to shorter daylight periods. Individuals suffering from seasonal affective disorder do not adapt well and can become depressed and suffer physiological consequences. If you think you have this condition, you may improve your mood and function by using a light therapy box for several hours each day and seeing your physician.
SOME RECENT ADVANCES IN GETTING A MEDICAL EDUCATION
By Michael Gochfeld, MD, PhD

Most, perhaps all, medical students (and practitioners as well) have paused at times to reflect on whether their medical school and subsequent continuing education, made optimal use of time and money, and whether required content would be relevant to their future practice. The oft heard question, “will it be on the exam,” reflects uncertainty about what is important.

Among bold new advances, the NYU Medical School announced in August 2018, “full scholarships to all current and future students in its doctor of medicine program.” (tuition is $55k/year). The headline was “Free Tuition at NYU Med.” One rationale is so “they walk out of here unencumbered, looking at a future where they can do what their passion tells them, which is to help people live better quality lives.”

The obvious, unpleasant implication is that many (perhaps most) medical graduates must take passionless jobs to pay off the reported average $192K accumulated debt. I am sure it is controversial whether seeking a lucrative practice specialty is inimical with “passion.”

On the homefront, Robert Wood Johnson Medical School had its own announcement. The Daily Targum (Nov 1, 2018) reported a bold new initiative of RWJMS, a joint BA/MD 4+4 Program. Entering university freshmen with outstanding records will be offered “guaranteed admission” to RWJMS upon graduation four years hence. The Daily Targum story emphasizes the hours and dollars that these students (already recipients of Rutgers Presidential Scholarships), will save not having to prepare for MCATS.

Richard Marlink, MD, director of Rutgers Global Health Institute, emphasized that participating students, their future medical school entry assured, will be able to explore a wide variety of disciplines, for example the “interdisciplinary nature of global health work.”

Robert Wood Johnson Medical School has several existing articulation programs. This one is offered to the 1-2% of entering students who receive the Presidential Scholarships and are part of the Rutgers Honor College. As these students “lock in” their future professional education, RWJMS “locks in” future outstanding students.

When I questioned the newspaper’s emphasis on the dollars and hours implicit in the MCAT waiver, Liesel Copland, PhD, director of medical education and admissions at RWJMS, provided this additional information: “The program truly has two primary goals: encourage high achieving students to study in NJ and encourage undergraduate students to explore the humanities and global health before starting medical school.”

She provided the statement of purpose: “This program draws on the medical schools mission to create adaptable physician leaders who tailor treatment to the needs and preferences of patients, integrate scientific underpinnings, and provide high quality care in an ever changing system and the Honors College fostering of interdisciplinary trained students who aim to tackle complex problems and global challenges.” More information at http://rwjms.rutgers.edu/education/medical_education/programs-prior-to-medical-school/special-admissions-programs
CHANCELLOR’S SCHOLARSHIP CHALLENGE – DOUBLE OR TRIPLE YOUR SUPPORT!

RUTGERS FOUNDATION: We are almost there – close to funding over $2 million in scholarships for Robert Wood Johnson Medical School (RWJMS) students through the Chancellor’s Scholarship Challenge!

Double or Triple Your Contribution From Melissa Magyar Rutgers Foundation

RBHS Chancellor, Brian Strom, has offered $1 million in scholarship funding from dedicated Rutgers Biomedical and Health Sciences resources and challenged us to raise $1 million from supporters like you – alumni, faculty, retired faculty, and friends of the Medical School. Since the challenge began in December 2017, we have raised $786,116 plus $544,230 in matching funds.

We thank all of our alumni, faculty, retired faculty, and donors for their dedication to our students. You are integral to the success of this challenge, which matches every donation up to $25,000 1:1 and 2:1 for new donations and faculty alumni donations. The challenge ends on December 31, 2018 - help support our students by making your gift today!

You can make a gift online at support.rutgers.edu/RWJMS or mail a check (payable to RUF Foundation) to Rutgers University Foundation, Attn. Melissa Magyar, 335 George Street, Liberty Plaza, Suite 4000, New Brunswick, NJ 08901.

Please contact Melissa at 848-932-7758 or melissa.magyar@ruf.rutgers.edu for more information about supporting the challenge.

Robert Wood Johnson Medical School Retired Faculty Association Global Health Fellowship Fund

The RFA is sponsoring medical students to learn, help, and teach in foreign countries, a potentially life-changing experience under the aegis of the Global Health Initiative of Rutgers Robert Wood Johnson Medical School. The RFA is helping to support summer programs or international electives for medical students and is asking you to consider adding your support to this effort. All funds go to help the students without any deduction for administrative expense.

You can submit your donation to support the RFA Global Health Fellowship Fund by sending a check made payable to the “RWJMS Retired Faculty Association” and mailing it to

Paul Lehrer, PhD, RFA Treasurer
Department of Psychiatry
Rutgers Robert Wood Johnson Medical School
671 Hoes Lane West, Piscataway, NJ 08854.

All contributions are tax deductible as charitable contributions. The RFA is a 501(c)(3) tax-exempt organization.
GLOBAL HEALTH DONORS IN 2018  
(current as of November 1, 2018)  

Paul Manowitz   John Lenard & Nancy Stevenson   Victor Stollar  
Norman Sissman  David Alcid                   James Chandler  
Sandra Moss     Mary Swigar                  Michael Gochfeld  
Rob Risimini    Michael Miller              Joyce Orenstein  
David Seiden    Frank Wilson                
Frank Snope     Teodoro Santiago            

Retired Faculty Association  

The annual dues period now corresponds to the calendar year. Dues are due now for calendar year 2019.  

Also, if you like to support medical students to have an opportunity to participate in the Global Health Program, consider donating to the RFA Global Health Fellowship Fund. Please send your check to Paul Lehrer. Both contributions are tax deductible as charitable contributions. Thank you.  

RWJMS Retired Faculty Association 2018 (January 1, 2019 – December 31, 2019) Dues  

Benefits of RFA Membership:  
- Defining, advocating for, and publicizing the benefits of retired faculty at RWJMS,  
- Fostering ongoing engagement and participation of retired faculty in RWJMS activities,  
- Promoting continuing interaction among retirees,  
- Providing information and options for faculty considering retirement, and  
- Interacting with other academic retired faculty associations (e.g., The AAUP Emeriti Assembly of Rutgers University, The Rutgers Retired Faculty and Staff Association).  

Please Print:  
Name: __________________________________ Address: __________________________________  
Phone: ___________________________ E-mail address: __________________________________  

Please enclose a check for a donation to the Global Health Program and/or for dues ($15) made payable to the “RWJMS Retired Faculty Association,” and mail the check to Paul Lehrer, PhD, at the address shown below.  

Global Health Program (indicate dollar amount) __________ RFA DUES ($15 for 2019) ______  

MAIL TO:  
Paul Lehrer, PhD  
Department of Psychiatry  
Rutgers Robert Wood Johnson Medical School  
671 Hoes Lane West, Piscataway, NJ 08854
RETIREE PARKING UPDATE

Ruthe Geardino obtained the following up-to-date information (November 9, 2018).

NO MORE HANGTAGS: Rutgers utilizes license plate recognition technology that captures and reads a vehicle license plate to confirm that the vehicle is registered and has permission to park on campus. You will not receive a physical hangtag or decal. Vehicle license plates must be unobstructed, affixed to the bumper, and displayed in view from the driving aisle of a parking space.

Parking [http://retirement.rutgers.edu/retiree-benefits/other-benefits/](http://retirement.rutgers.edu/retiree-benefits/other-benefits/)

As a retiree, you are able to continue parking in any of the common (non-gated) faculty\staff parking lots without having to purchase a one day parking permit.

To Register:

- Send email to Transportation Services at info_dots@ipo.rutgers.edu.
- Subject line is Retiree Parking.
- In the email include your full name and address and for each of vehicles that you drive include: the make, model, color of vehicle, license plate, and state of the vehicle.
- Your registration is valid for two years.
- You will NOT be issued a hangtag or sticker.
- An electronic note will be placed in the system for the vehicle so that it is not ticketed.

Additional Parking Information:

- Only those faculty who are retired and are no longer on payroll are eligible.
- Parking is free for Faculty Retirees only. If you are retired and are in any other paid position, you must pay for your parking permit according to your current affiliation.
- Only 1 vehicle may be on campus at a time.
- Any change to your vehicle information must be reported to Transportation Services immediately, unregistered vehicles will be ticketed.
- Retiree parking is not valid on game days.
- It is the responsibility of the Retiree to maintain a record and expiration/renewal for their parking. You will NOT be notified by RUDOTS that your parking is about to or has expired.
- Suggestion: confirm your parking annually so as not to forget.
- Suggestion: register ALL vehicles, include any vehicle you drive even if not owned or registered to you, (new vehicles may be added at any time).

Anyone attending the RFA meetings who has not registered to park on campus, will have to apply for a one day pass. [https://ipo.rutgers.edu/dots/visitor-parking#video](https://ipo.rutgers.edu/dots/visitor-parking#video)