

Nobel Laureate Dr. Susumu Tonegawa to speak at Tufts University HNRCA

by Nafis Hasan^{CMDB}

The Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts University has invited the Nobel laureate Dr. Susumu Tonegawa, Ph.D. to give a talk as part of the Drs. Joan and Peter Cohn Family lecture on nutrition, inflammation and chronic disease. This event also includes a panel discussion besides presentations from other distinguished speakers such as Jonathan Kipnis, Ph.D. (Director, Center for Brain Immunology and Glia, University of Virginia), Simin Meydani (Director, HNRCA), Irwin Rosenberg, M.D. (Director, Nutrition and Neurorecognition lab, HNRCA) and Dennis Steindler, Ph.D. (Director, Neuroscience and Aging lab, HNRCA). This event will take place on Dec 17, 2015 from 1-6 pm at the HNRCA building. [Registration](#) for the talk is

required; the URL is at the end of this article.

Dr. Susumu Tonegawa is currently the director of RIKEN-MIT Center for Neural Circuit Genetics and holds the Picower professorship of Biology and Neuroscience. He was awarded the Nobel Prize in Physiology or Medicine in 1987 for his discovery of the genetic mechanism behind antibody diversity in the adaptive immune system. His experiments, that started in 1976, countered the contemporary dominant idea that each gene produced one protein as he went on to show that genetic rearrangements in mature B cells in adult mice, compared to embryonic mice, are responsible for the diversity observed in antibodies.

Dr. Tonegawa received his Ph.D. in Biology from University of California, San Diego



(UCSD) in 1968. He then went on to work as a postdoctoral scholar at the Salk Institute in San Diego, and later at the Basel Institute for Immunology in Switzerland where he performed his landmark experiments.

[Continued on page 6. "Tonegawa"](#)

Caroline Genco, PhD, awarded Arthur E. Spiller, M.D. Professorship

by Nafis Hasan^{CMDB}

On Tuesday, Dec 1, 2015, Dr. Caroline Genco, chair of the Integrative Physiology & Pathobiology, was installed as the inaugural Arthur E. Spiller, M.D. Professor. This professorship was made possible by an estate gift from Dr. Spiller and this fund is meant to support "an outstanding biomedical researcher and educator at Tufts University School of Medicine who demonstrates expertise in the field of genetics".

Dr. Genco completed her Bachelor's degree in Biology at State University of New York (SUNY-Fredonia) and did her graduate work in microbiology at University of Rochester School of Dentistry & Medicine. She went on to work as a postdoctoral scholar at Center of Disease Control (CDC) and later, walked the path of an academic that led her



to Boston University School of Medicine (BUMC) prior to Tufts. At BUMC, she was honored with the Lifetime Achievement Award for Research & Service (2012). She has also served on numerous NIH study sections, worked with & advised several pharmaceutical companies, and has mentored a host of graduate students and postdoctoral scholars throughout her career.

Dr. Genco's research spans basic, translational and global health in relation to mucosal pathogens, with a particular interest in genetic elements of host-pathogen interactions in systemic inflammatory disease states. Some of her notable works include establishing the connection between oral mucosal bacteria and their role in atherosclerosis and plaque formation. Her current work focuses

on innate immune responses to mucosal pathogens, regulatory mechanisms in bacterial pathogens and the association between the microbiome and chronic inflammation, with an interest in pancreatic cancer. More details are available at her Sackler webpage - <http://sackler.tufts.edu/Faculty-and-Research/Faculty-Research-Pages/Caroline-Genco>.

Besides her academic accomplishments, Dr. Genco also serves as the President and Treasurer of the Christina Clarke Genco Foundation, Inc. This non-profit was established in honor of Christina Genco, who passed away in a tragic biking accident in 2011. This organization embodies the values of late Ms. Genco and seeks to empower young adults so they can make a difference in their communities. In addition, the organization also focuses on improving biking safety, providing scholarship to female athletes and assisting affordable housing initiatives.

2015-16 GSC**Officers**President

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Representatives**BiochemistryChristina McGuire¹CMDBNafis Hasan¹Cho Low¹Julia Yelick¹CMPDaniel Wong²GeneticsKevin Child¹Jaymes Farrell¹ImmunologyMegan McPhillips¹Frankie Velazquez¹Molecular MicrobiologySanna Herwald¹Sarah Jung²NeuroscienceAlex Jones²Michaela Tolman²PPETAmanda Gross¹Joshua Oppenheimer¹MD/PhD LiaisonDavid Dickson²Faculty LiaisonMichael Malamy^{MMB}Dean's Office LiaisonKathryn Lange^{SK}^{1,2} Denotes years on
GSC**InSight Team**

Information on page 6

GSC Updates**Welcome to the new Faculty Liaison**

The GSC would like to welcome our new faculty liaison, Michael Malamy^{MMB}, who volunteered to fill the position before even hearing the description of the role.

Committees**Advertising**Kevin Child^{GENE}, Jaymes Farrell^{GENE},Joshua Oppenheimer^{PPET}**Career Paths**Christina McGuire^{BCHM}, Kevin Child^{GENE},Amanda Gross^{PPET}, Julia Yelick^{CMDB}**Newsletter**Daniel Wong^{CMP}, Nafis Hasan^{CMDB},Sanna Herwald^{MMB/MSTP}**Social**Frankie Velazquez^{IMM}, David Dickson^{NRSC/MSTP},Jaymes Farrell^{GENE}, Cho Low^{CMDB},Megan McPhillips^{IMM}**Liaisons****Clubs & Student Groups**Julia Yelick^{CMDB}**Library**Sanna Herwald^{MMB/MSTP}**Outreach**Megan McPhillips^{IMM}**Postdoctoral Association**Michaela Tolman^{NRSC}**Safety**Cho Low^{CMDB}**Scientific Affairs**Amanda Gross^{PPET}**Social Media**David Dickson^{NRSC/MSTP}**Interested in writing?**

We'd like your contribution! Works about both science and non-science topics accepted. Writers will be acknowledged, with increasing recognition (guest writer, contributor, staff writer) for additional content submissions and publication. E-mail us: insight@elist.tufts.edu

Committee Reports**Career Paths**

Recent Events:

- W Dec 2 — **Joanne Kamens, Addgene: Leadership skills—"Topics for New Managers or Why Communication May Save You"**
- W Dec 9 — **Networking I: Connect with Networking Organizations and Learn How They Can Help Advance Your Career**
The Sackler Dean's Office and the GSC Career Paths Committee hosted a workshop with Lauren Celano of Propel Careers to discuss various ways to utilize networking events, organizations, conferences and other resources to aid in career discovery and a career search. Various options to engage with organizations to grow both professionally and personally were highlighted in a short presentation, followed by a networking event with representatives from several local networking organizations: Women Entrepreneurs in Science and Technology, MIT Enterprise Forum, Women in Bio, Association for Women in Science, and Boston Young Healthcare Professionals.

Newsletter

- Check out our new blog: <http://sites.tufts.edu/insight>
- We will be transitioning to the blog as the primary focus of the InSight, as it provides us with greater flexibility. The PDF version of the InSight will continue to be produced at least until the end of the 2015-2016 academic year.

Social

- The Sackler GSC is organizing a group outing to a Red Sox game for this coming spring! We are planning on reserving a large section of seats together for purchase so you can sit with all of your friends and your favorite faculty members. If you think you would be interested in attending (likely for a game in April, 2016) please e-mail Dave at david.dickson@tufts.edu by December 17th! We need to have a group of AT LEAST 20 people to have our seats reserved and to get the cheaper group rates! Tickets will be around \$20 per person. Let Dave know if you have any additional questions, and after we get a good response in we will be sending out polls of probable dates for everyone to vote on.

Sackler student groups updates, December

A monthly update from GSC-funded clubs about their activities.

Upcoming Events:

- **TMCP Circle Meetings**
Dec 1-30 — *Various locations*
- **TBQA End-of-Term PhD Coffee Hour**
F Dec 18 — 12:50PM, *Depart from M&V Security Desk*
Informal meet-up for Sackler TBQA members to get caffeinated and chat before the holiday season starts. Location: Jaho or Starbucks.
- **GSC Career Paths Start Up Mixer**
W Jan 6 — 8PM, *The Field Pub, Central Square; 20 Prospect St, Cambridge, MA*
Rub elbows with representatives from Neumitra, Editas, Genometry Inc., and Thrive BioScience! This also presents a rare opportunity to pick the brains of people who have successfully made the transition from academia to the startup field. Happy Hour appetizers will be served!
- **TBBC Biotech Journal Club**
F Jan 8 — 12PM Noon, *Jaharis 155*
Biotech Journal Club will be moving its December meeting to January 8th.. To join the mailing list, email tuftsbiotech@gmail.com with the subject line: BJC.

Recent Events:

- **TMCP Circle Meetings**
Nov 1-31: Mentoring circles met, and discussed various topics.
- **TBBC Dr. Greg Babcock**
Tu Nov 10: Dr. Greg Babcock, Executive Director of Research at Visterra Inc., spoke to students and post-docs regarding "Traversing the Transition from Academia to Industry."
- **TBBC Biotech BUZZ: Frank Rimalovski**
Frank Rimalovski, Executive Director of the NYU Entrepreneurial Institute, joined Biotech Buzz to discuss his experiences training and educating entrepreneurs.
- **TBBC Biotech Journal Club**
F Nov 20: Farrah Roy gave a presentation

on the topic of improving pharma R&D to the Biotech Journal Club.

- **TBBC Biotech BUZZ**
F Dec 4: Start your day with a jolt of caffeine and learn about the biotech world.
- **TBBC MedStart: The Conference - Igniting Innovation**
F & Sa Dec 4 & 5: Networking sessions and several diverse panel discussions on advancing healthcare.
- **TBQA Sunday TBQA-wide Brunch**
Su Dec 6: Get-together with all TBQA members at a member's apartment before finals, committee meetings, and winter break.

Tufts Biomedical Business Club

(**TBBC**) from Jaclyn Dunphy^{NRSC}

The Tufts Biomedical Business Club (TBBC) is a student run organization whose mission is to cultivate business leaders in the health and life sciences. TBBC is a growing community of graduate, medical, dental and nutrition students, postdocs, physicians, scientists and alumni. It provides members with opportunities to learn about consulting, business development, entrepreneurship, intellectual property and more. We engage our members through a number of initiatives including a seminar series, Biotech Journal Club, Consulting Case Study Group, panel discussions, and most recently Biotech BUZZ. E-mail tuftsbiotech@gmail.com for more information.

Tufts University Biomedical Queer Alliance (TBQA)

from Laura Darnieder^{NRSC}

Tufts University Biomedical Queer Alliance (TBQA) is a graduate school-based, student-led club organized to create a supportive environment for non-heterosexual and non-cisgendered (NH&NC) individuals between the different professional health and degree programs within the downtown Tufts University campus. In addition, we aim to increase engagement and awareness of the student body in LGBTQ issues that affect both their fellow students as well as the communities they serve. Our organization fosters

collaboration and mentorship between physicians, researchers, and students, and aims to strengthen the commitment of Tufts Medical Center and Tufts University Health Sciences campus in supporting NH&NC health, research, and career development. We aim to do this through a variety of activities, including panel discussions, creating mentoring opportunities, orientation events, curriculum feedback, and social events. E-mail Tufts-BQA@elist.tufts.edu for more information.

Tufts Mentoring Circles Program (TMCP)

from Siobhan McRee^{GENE} and Carrie Hui^{CMD}

The Tufts Mentoring Circles Program (TMCP) is a student run organization whose mission is create a confidential space that enables meaningful and helpful discussion of career development and/or work-life balance topics to facilitate personal growth and aid in goal exploration. Through the formation of small group mentoring circles, we aim to connect individuals who will become each other's advocates and accountability partners. These mentoring circles will be a general resource for providing insight, fostering cross-program and cross-departmental collaboration, supporting graduate student life and well-being, and promoting opportunities for networking within the greater Tufts community. If you would like to get involved, including helping organize circles, reach out to alumni, or plan events, e-mail tuftsmentoring@gmail.com for more information.

GSC Career Paths Committee (GSC)

Duties include: organize the Career Paths Seminar series; recruit external speakers from a diverse set of professional environments to speak about their career experiences; work with the Dean's office to recruit speakers and to help facilitate events.



sites.tufts.edu/insight



Tufts University Sackler School Students



sackler_gsc

Notes from the Library... Searching a Literature Database

by Laura Pavelch^{HHS}

What is a structured search?

A structured search is a systematic approach to finding references in a literature database using Boolean operators (AND, OR, NOT), keywords and controlled vocabulary terms, such as Medical Subject Headings (MeSH). The goal of a structured search strategy is to balance recall and relevance (sensitivity and specificity).

How do I create a structured search?

The key to creating a good structured search is doing a little work before you go to a database.

Step 1: Develop a focused question

Like all research, a good search begins with a good question. Health professional students are taught to use the acronym PICO to construct clinical questions, where 'P' stands for patient or problem, 'I' for intervention, exposure or prognostic factor, 'C' for comparison, and 'O' for outcome. The idea is to create a well-defined question with multiple concepts, which helps you build a search strategy and evaluate the relevance of your search results. You may need to modify your question once you conduct a few searches.

Example: How do genetic variants in the vitamin D pathway affect breast cancer risk?

Step 2: Identify the key concepts of your questions.

Break down your question into its components. You can use the PICO acronym, or simply think: who, what, when, where, how.

Example: How do genetic variants in the vitamin D pathway affect breast cancer risk?

Breast cancer (concept 1)

Vitamin D (concept 2)

Genetic variants (concept 3)

Step 3: Choose keywords and standardized (controlled vocabulary) terms to describe each concept.

The goal of this step is to think of different ways to describe each concept. Keywords are natural language, the terms you use when discussing the concept with a colleague; consider acronyms, abbreviations and close synonyms. Standardized terms are from a controlled vocabulary, such as MeSH in PubMed; not all databases have a controlled vocabulary. The inclusion of multiple keywords and standardized terms ensures that you do not miss relevant articles on your topic, regardless of how an author or indexer described the topic.

Example: How do genetic variants in the vitamin D pathway affect breast cancer risk?

Breast cancer (concept 1): Breast neoplasms, mammary carcinoma...

Vitamin D (concept 2): Calcitriol, 1,25-dihydroxycholecalciferol...

Step 4: Using Boolean operators, search each concept separately then combine.

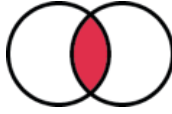
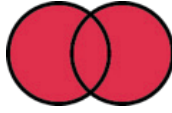
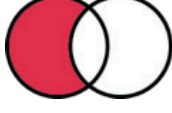
Boolean operators (AND, OR, NOT) are used to combine words and phrases in a search strategy. Use 'OR' to combine all keywords and standardized terms for one concept and run this search in a database.

Once you have searched each concept separately, then combine different concepts using 'AND'. Searching each concept separately allows you to identify any problems with particular terms before you build a complicated search, and gives you the flexibility of combining your concepts in different ways.

Example: (Breast cancer OR Breast neoplasm OR Mammary Carcinoma) AND (Vitamin D OR Calcitriol OR 1,25-Dihydroxycholecalciferol) AND (Genetic variant OR Polymorphism OR Gene frequency)

Step 5: Use filters to limit results.

Most databases have filters, such as date, language and publication

OPERATOR	EXAMPLE	SEARCH RESULTS	VENN DIAGRAM
AND	Heart disease AND hypertension	Articles containing BOTH heart disease and hypertension	
OR	Heart disease OR Hypertension	Articles containing EITHER heart disease, hypertension, or both	
NOT	Heart disease NOT hypertension	Articles containing ONLY heart disease, not hypertension	

type, that allow you to further narrow your results. Be judicious when using filters. If you have too many irrelevant results, then you need to modify your search, not apply more filters.

This sounds complicated and time-consuming, do I really need to construct a structured search each time I need to find articles?

Not necessarily. If you just need a few good articles, then you can enter a couple terms in a database and scan the results. However, if you are doing a literature search for your dissertation, qualifiers, or grant proposal, then it is a good idea to do a structured search. This strategy may require an initial investment of time, but it will (hopefully) save you the frustration of scrolling through hundreds of irrelevant results, or missing an important article. Of course, I am always available to help you construct a search strategy.

PubMed Tip of the Month: PubMed Advanced Search Builder

The PubMed Advanced Search Builder allows you to view your search history, search specific fields (e.g. title, author, abstract, journal, etc.), and combine searches using Boolean operators (AND, OR, NOT). To access the Advanced Search Builder, click on the 'Advanced' link below the PubMed search box.

Upcoming Library Events

Fun Fridays: Gingerbread Houses and Wintry Crafts

F December 11th, 12 PM – Supplies run out!
Library Service Desk, Sackler 4

Create your own gingerbread house, snowflakes and other crafts. All supplies will be provided, just bring your creativity!

New Library Website!

The Hirsh Health Sciences Library's new website will launch on Sunday, December 20th, so be prepared for a new look. The beta version of the new site is currently available: <https://beta.hirshlibrary.tufts.edu/>. Provide feedback on the beta site for a chance to win a gift basket. Winner will be announced when the new website is officially launched.

Extended & Holiday Hours

See HHSL website: <http://www.library.tufts.edu/hhsl/about/hours.html>

Hirsh Health Sciences Library on Social Media:

Tufts University Hirsh Health Sciences Library



TuftsHHSL

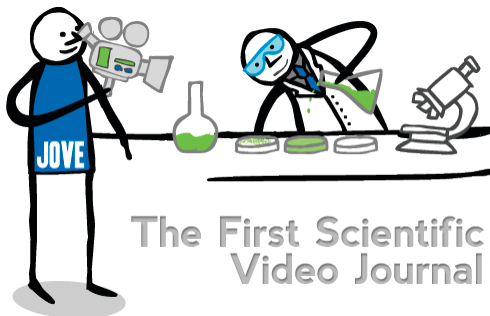
On the Shelf

For work...

Electronic Resource: Journal of Visualized Experiments (JoVE)

Location: Search for 'JoVE' in the Tufts Catalog
(<http://library.tufts.edu/>)

JoVE is a peer-reviewed scientific journal that publishes experimental techniques in video format. The 8-15 minute, professionally-produced videos show standard and novel methods and procedures in the fields of cellular and molecular biology, bioengineering, immunology, medicine, neuroscience and more. A written protocol, with complete list of materials, accompanies each video article. So next time you are looking for information on how to perform a technique, search or browse JoVE.



And leisure...

Making Nature: The History of a Scientific Journal, by Melinda Baldwin

Location: Tisch Book Stacks (Click 'Request Item' link at top of catalog record for delivery to Hirsh Health Sciences Library: <http://library.tufts.edu:80/record=b2807116~S1>)

This cultural account examines how editors, contributors, subscribers, and events have shaped the 150-year history of the journal Nature. Authored by a lecturer in the History of Science Department at Harvard University.

**Sackler Student Publications**

November 2015 to present

compiled by Laura Pavlech^{HHSL}

Bhardwaj N^{MMB}, **Montesioni M^{GENE}**, Roy **F^{GENE}**, Coffin JM. Differential expression of HERV-K (HML-2) proviruses in cells and virions of the teratocarcinoma cell line Tera-1. *Viruses*. 2015;7(3):939-68; PubMed PMID: 25746218.

Cook-Snyder DR^{POSTDOC}, **Jones A^{NEURO}**, Reijmers LG. A retrograde adeno-associated virus for collecting ribosome-bound mRNA from anatomically defined projection neurons. *Front Mol Neurosci*. 2015;8:56; PubMed PMID: 26557053.

Finnerty NM, Rodriguez RM, Carpenter CR, Sun BC, Theyyanni N, Ohle R, Dodd KW, **Schoenfeld EM^{CTS}**, Elm KD, Kline JA, Holmes JF, Kuppermann N. Clinical decision rules for diagnostic imaging in the emergency department: A research agenda. *Acad Emerg Med*. 2015; PubMed PMID: 26567885.

Gardiner BJ^{CTS}, Snyderman DR. Chronic lung allograft dysfunction in lung transplant recipients: Another piece of the puzzle. *Clin Infect Dis*. 2015; PubMed PMID: 26565009.

Jackson FR, Ng FS, Sengupta S, **You S^{NEURO}**, Huang Y. Glial cell regulation of rhythmic behavior. *Methods Enzymol*. 2015;552:45-73; PubMed PMID: 25707272.

Jung SA^{MMB}, Hawver LA, Ng WL. Parallel quorum sensing signaling pathways in *Vibrio cholerae*. *Curr Genet*. 2015; PubMed PMID: 26545759.

Rogalin HB^{BCHM}, Heldwein EE. Interplay between the herpes simplex virus 1 gB cytodomain and the gH cytotail during cell-cell fusion. *J Virol*. 2015;89(24):12262-72; PubMed PMID: 26401042.

Theoharides TC, Tsilioni I, Arbetman L, **Panagiotidou S^{PPET}**, Stewart JM, Gleason RM, Russell IJ. Fibromyalgia syndrome in need of effective treatments. *J Pharmacol Exp Ther*. 2015;355(2):255-63; PubMed PMID: 26306765.

Thoonen R, Giovanni S, Govindan S, Lee DI, Wang GR, Calamaras TD, Takimoto E, Kass DA, Sadayappan S, **Blanton RM^{CTS}**. Molecular screen identifies cardiac myosin-binding protein-C as a protein kinase G-1alpha substrate. *Circ Heart Fail*. 2015;8(6):1115-22; PubMed PMID: 26477830.

Advent of Code: holiday-themed puzzles

Coding isn't scary — Have fun learning or practicing your skills.

by Daniel Wong^{CMP}

Being able to write computer code is an increasingly valuable skill that isn't commonly taught in primary education, or a part of the curriculum for many undergraduate majors. Similarly, coding/computer programming is nearly absent from the curriculum here at Sackler. There seem to be three dominant reasons for this: coding isn't always seen as being applicable, code itself can be intimidating, and there isn't someone qualified to teach the subject. However, being ignorant of coding puts us, individually and as an institution, at a competitive disadvantage, and unnecessarily so. Learning how to code isn't scary or even particularly difficult. Sure, code can be complex, but no one starts learning how to code by diving into the most difficult examples. The principles of coding are no more complex than basic lab protocols that we here at Sackler are at least comfortable with, if not masters at executing.

This is the introduction to a series of short articles about the basics of coding that Sackler students should understand, which will begin with the next issue of the InSight. For now, I want to highlight a series of holiday-themed coding puzzles to keep everyone occupied over the holidays.

A software engineer named Eric Wastl has put together a series of coding challenges

called Advent of Code at adventofcode.com. One two-part puzzle is revealed each day just after midnight. The puzzle takes the form of a word problem, and provides you with input to feed into the code you write to solve the problem. The answer to the puzzle, the output of your code, can be submitted to the site, which tells you if you're right, too high, or too low. If you're right, you earn a star for that part of that part of the puzzle, which lights up one level of a Christmas tree rendered in text. Earning the first star of each day changes the corresponding level of the tree from gray to green, while earning the second lights up the "ornaments". You can use any programming language you like, including Python, R, and PHP, which some students may already be familiar with.

Interested? The first day's puzzle is below; visit adventofcode.com to create your account and get your own input:

Santa is trying to deliver presents in a large apartment building, but he can't find the right floor - the directions he got are a little confusing. He starts on the ground floor (floor 0) and then follows the instructions one character at a time.

An opening parenthesis, `(`, means he should go up one floor, and a closing parenthesis, `)`, means he should go down one floor.

The apartment building is very tall, and the basement is very deep; he will

recall. He also seeks to understand the role of memory in decision-making, and how other factors such as reward, punishment, attention and emotional state can affect learning and memory formation. These research questions have great implications in understanding memory disorders such as Alzheimer's where patients are unable to form new memories, or PTSD where patients are unable to suppress recalling of a highly unpleasant memory.

For more details on his work, please visit <http://tonegawalab.org/research/>. To register for the seminar, please visit https://secure.www.alumniconnections.com/olc/pub/TUF2/events/event_order.cgi?tm-pl=events&event=2363222.



never find the top or bottom floors.

For example:

- `((` and `()` both result in floor 0.
- `((` and `((()` both result in floor 3.
- `(((((` also results in floor 3.
- `()` and `))` both result in floor -1 (the first basement level).
- `)))` and `))())` both result in floor -3.

To what floor do the instructions take Santa?

Tonegawa, cont'd

His current research focuses on understanding the molecular, cellular and neural circuit mechanisms underlying learning and memory formation using genetically engineered mouse models that have spatially or temporally restricted neurotransmitter receptor and enzyme expression, or have conditional knock-out of specific cell populations that are suspected to be involved in memory formation. These mutant mice, along with control mice, are then subjected to analytical methods such as behavioral tasks, in vitro electrophysiology, and both in vivo and in vitro high resolution optical imaging. The main questions his research sees to answer include what happens in the brain during memory formation, consolidation of short-term memory to long-term, and memory

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Team: Participated in planning of and coordination of content this year.

Contributors: Contributed substantial content this year, and not a GSC program representative.

Guest Writers: Contributed a single long article or a few short articles this year aside from club updates, and not a GSC program representative.



INSIGHT ESSAY CONTEST

In the spirit of this publication connecting science and communication, the Insight team is excited to announce a new endeavour: an essay contest. Here is your chance to sound off on a topic near and dear to all of our hearts and careers, namely our education. Science is a rapidly evolving field, and to produce excellent scientists, training programs need to incorporate those changes. So, here is what we are asking you:

What component, topic, or field do you consider critical to a PhD education, and why should it be prioritized in training?

Essays can address anything from incorporating bio-informatics into training, to the need for grant-writing assignments in classes, to how collaborations significantly improve research projects. We only ask that these essays address a general PhD education, not one at Tufts specifically. More rules can be found below.

Max. Length: 1500 words

Due Date: January 31st, 2016

Winner(s) will be determined via a school-wide poll on the Insight blog and awarded prize(s) generously donated by the Sackler GSC. If you are interested in entering or have questions, please email insight@elist.tufts.edu.

Happy writing!

Top Techniques

How to enjoy holiday vacation as a graduate student

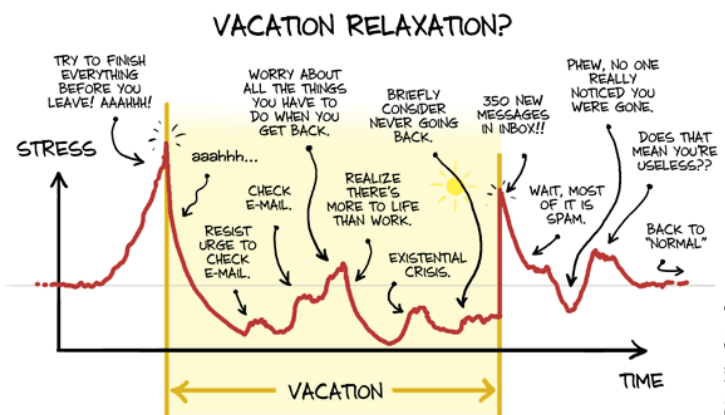
by Kayla Gross^{CMDB}

This is always a busy time of year, and whether you are traveling or staying local, taking time off or continuing to work, here are some things to make this season more merry and bright:

- Sleep. On a bed, not your lab bench or desk. Get a lot of it to catch up after committee meetings and final exams.
- Eat. Try a new recipe at home (here are some recipes and here are some tips on cooking as a grad student) or make a list of new restaurants to taste test.
- Travel, even for just for a day or within an unexplored neighborhood of Boston. Experiencing some place new will help shake up your routine and maybe even your perspective.
- Reconnect with friends and family, either in Boston or at home. Knowing you have a support system can do a lot for morale, motivation, and overall wellbeing.
- Find a new TV show to binge watch. Winding down with the latest adventure saga or drama-filled reality show can give your brain a rest, making you more alert and ready to work the next time you're scanning PubMed or sitting down at your bench. Feel free to contact the Insight team for suggestions!
- Wanted to try rock climbing or pottery or paint night? Now's the time to do it! You might even be able to find some holiday deals too. For those staying local, take a walk around the Boston Common and maybe stop by the Frog Pond for skating.
- Try experiencing science in a new and different way. As graduate students, thinking about our research isn't something we really

can never stop doing. What we can do during vacation, however, is examine it from a new angle. Look at your field from the perspective of the media, or medicine, or industry. It'll make you feel productive while also freshening your thoughts on what you deal with on a day-to-day basis and maybe even propel you in a new direction when you return to the bench.

Happy holidays, Sackler!



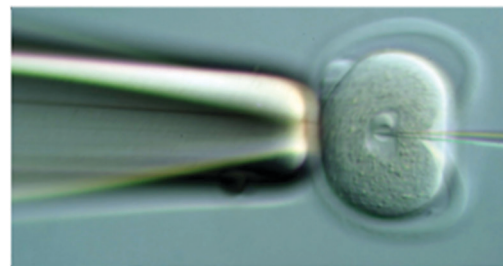
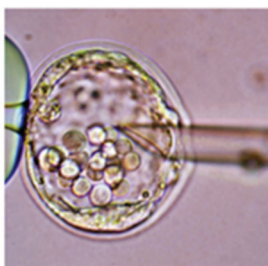
WWW.PHDCOMICS.COM

The Maine Medical Center Research Institute has partnered with Tufts to provide a professional core facility that has over 15 years of experience providing high quality services for the generation of mouse transgenic strains including the use of CRISPR/Cas, cryopreservation of mouse germ cells, and imaging, including MRI and microCT. Mice are generated in a full barrier, AAALAC- accredited animal facility in a transgenic production room that facilitates direct importation of mice into the Tufts barrier facility. Contact us to discuss your mouse and imaging projects.

Maine Medical Center Research Institute

Mouse Transgenic and In Vivo Imaging Facility

Core Director: Lucy Liaw, Ph.D.



Mouse transgenesis

We provide microinjection to generate your mouse models. Services include microinjection of fertilized oocytes with traditional DNA transgenes, or microinjection of CRISPR/Cas. ES cell injection is also performed. Contact us to design your CRISPR mouse project - cost depends on type of modification, strain of mouse, and days of injection. We have a high surveillance production room that will allow importation of mice directly into some barrier facilities.

***Contact: Lucy Liaw, Ph.D.**
liawl@mmc.org

microCT

We house a Scanco high speed in vivo microCT scanner X-ray system. Our microCT facility has extensive experience in bone imaging and quantification, and can work on other projects where tissues are provided, i.e. vascular imaging of samples perfused with microfil. We provide quantification and any 3D images of the samples as required. Contact us to get a project quote. Pricing is based on hours of scanning and analysis time.

***Contact: Lucy Liaw, Ph.D.**
liawl@mmc.org

Small animal MRI

Our MRI facility houses a Bruker PharmaScan 7T, 300MHz imager with 100µm resolution. Services include anatomical imaging of most organs, angiography, proton spectroscopy and localized spectroscopy, and cardiac imaging, including diastolic and systolic dimensions of the ventricle. We can house "clean" animals at our facility for studies requiring longitudinal imaging. Contact us for more information.

***Contact: Ilka Pinz, Ph.D.**
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