Student life in the Combined Program in the Biological and Biomedical Sciences

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http://www.bbs.yale.edu/about/bmagazine/Index.aspx
Throughout my career as a PhD student, I have been pleased to observe that scientists are actively participating in media outlets. This has certainly been an entertaining experience for me, but I have also realized that being skilled in the ways of social media could be a great starting point for an “alternative” career. All scientists possess a creative and entrepreneurial streak, but those who can make their ideas accessible enough for non-scientists to appreciate will benefit from never limiting the size of their audience.

Sites like “whatshouldwecallgradschool” on Tumblr, various science-themed groups on Facebook, and “#overlyhonestmethods” on Twitter have become very popular over the past few months, and they are easily accessible for both scientists and non-scientists alike to view. I can’t tell you how many friends from all walks of life have e-mailed me links to these sites, adding comments like, “Have you seen this?” or “Is this actually true?”

One of the most “liked” posts on “whatshouldwecallgradschool” shows a video of the cast of “Seinfeld” jumping for joy underneath the phrase “P < 0.05.” If only we could experience this same type of comedic response every time our data was significant, then science would be so much more exciting! Of course, some posts contain “inside jokes,” but scientists and non-scientists alike can appreciate the juxtaposition of a cultural reference mixed with a truth about science. While scanning through all of these posts (too often than I care to admit), I always think to myself that the scientists behind these posts are quite clever, and these talents need to be showcased more often!

There are already some great examples for how scientists have developed a media presence. First, I will mention the addictive website, phdcomics.com/comics.php. PHD Comics (where the “PHD” stands for “Piled Higher and Deeper”) was started by Jorge Cham, who graduated with a PhD and then decided to combine his knowledge about the life of a scientist with his amazing artistic skills. He tackled this idea by drawing a comic strip that follows the lives of a few science PhDs and all of their daily experiences. Cham has also traveled to universities all around the country, including Yale, offering screenings of his “PHD Movie,” a movie version of all the famous situations illustrated in his comic strips. He has even given a TEDxTalk, was interviewed for a New York Times article, and has his own Wikipedia page. I’d say that he is catering to a wide audience and has become very successful doing so!

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Second, I will switch over to TV and talk about the sitcom “The Big Bang Theory.” While the show’s producers are not scientists themselves, they have hired PhDs as consultants for writing about the finer points of biology, physics and engineering. Some scientists don’t like the show because it perpetuates stereotypes, and I would agree that it does: the scientist characters are portrayed as classic nerds with limited knowledge of how to act in social situations. However, I should also point out that there are plenty of instances on the show when the scientists don’t act “nerdy” and encounter the same experiences and emotions that anyone else would, too.

It’s quite impressive that the show is one of the most-watched sitcoms on TV today. People are more likely to watch an episode of “The Big Bang Theory” than a documentary on the Discovery Channel, but at least they are watching an episode of “The Big Bang Theory.” The show can really get a conversation started, too; more often than not, when I tell people that I am getting my PhD and work in a lab at a university, they are curious to know if my life is just like “The Big Bang Theory,” or if I know any scientists as quirky as Sheldon, one of the main characters. In this way, I am grateful to “The Big Bang Theory” for turning what would otherwise be an average conversation about my job into a stimulating discussion about science and the media.

Scientists are naturally insightful and creative, and we possess communication skills geared for many types of audiences. It’s only a matter of time before more scientists transfer these skills to media outlets outside of the “Ivory Tower” for everyone to appreciate!
On a recent Friday evening, the sleek, glass-encased workshop floor of the Yale Center for Engineering and Design (CEID) is abuzz with activity. Mert Celebi and Jason Allmaras of the Yale Undergraduate Aerospace Association (YUAA) are optimizing the circuitry of a controller to send signals to an aircraft. In the lecture space, the group XS, consisting of students from art, architecture, forestry, music, drama, law, and Yale College gather to discuss the design of a public art installation that will be exhibited on College Street this coming April. Plastic bins near the mobile wood-top workbenches brim with materials such as pipe cleaners, duct tape, wood, circuit boards, capacitors, and wire to allow designers to take their ideas “from the ether into real space”, as CEID intern Yusuf Chauan likes to say. The CEID, located in the Becton Center at Prospect and Grove Streets, opened relatively quietly just this past fall semester. Membership is available to all Yale students, faculty, and postdocs, but members must successfully complete an online quiz and an hour-long orientation that fills up almost instantaneously. CEID director Professor Eric Dufresne has directly expressed his eagerness to draw more people from the biosciences that may be looking for “mechanical or electrical solutions” for experimental setups. And while you’re here on official lab business, why not stay to assemble that prototype you’ve been dreaming up?

My tour guide, the design intern Yusuf Chauan, who completed his undergraduate degree in biomedical engineering at Yale, professes his dedication to making what has been called “one of the most interdisciplinary spaces on campus” a “happy place” that students can come not just to dream up the next big design project, but also to socialize and relax. Indeed, the CEID’s upbeat atmosphere and visual appeal, as well as the opening of the CEID Café next door earlier this semester will drastically increase the free energy for the design-minded to venture elsewhere. This is also suggested by the membership numbers: In the first week of January, the CEID had 485 members—22% graduate students with the SOM as the largest contingent—and just two weeks later member numbers topped 600. Based on the relatively low percentage of graduate students, it’s tempting to conclude that this space caters primarily to the undergraduate set, but those graduate CEID members in-the-know have found multiple reasons to become involved.

Shari Yosinski, a second year in Biomedical Engineering, explains that she is drawn to the CEID because its members and staff exude an attitude of “Why not?” and “because I have a lot of cooky ideas that need a place to breathe and be fleshed out”. On the lab work side, Shari and one of her colleagues in the Reed lab use the laser cutter to fabricate inlet and outlet ports for glass microfluidic devices as well as the 3-D printers to print “small holders for facilitating bonding of microfluidics to small electronic nanowire chips”. Outside of research, Shari runs a lab for an engineering innovation course taught by Professor Dufresne and works on converting Etch-A-Sketches® into microscope translation stages in her free time. “I ride my bike past the CEID every day and see students...manipulating some contraption or another at all hours of the night. You can’t help but feel inspired by the interplay of childhood playthings, awesome technology, and the enthusiasm of the staff and students letting their minds and ideas breathe in the CEID”, Shari gushes. For those without a teaching assignment at the CEID, graduate students, postdocs, or faculty members may also become involved with the Center by mentoring a student group, becoming a staff member, participating in a workshop, giving a workshop, or by joining an existing or starting their own project group.

Saga Blane, a graduate student in the School of Architecture’s Master of Environmental Design program and leader of the group XS, is grateful for the “welcoming attitude” at the CEID towards a group that does not even include engineers, which she largely credits to the unique “vision” of assistant director Joseph Zinter for the Center. “It is really the only place on campus where we can exist as we are”, she confesses. Saga has organized the collaborative effort to fulfill the practical component of her thesis work, in which she hopes to explore “how space can be used as a way of opening up siloed disciplinary knowledge and [encourage] interdisciplinary collaboration”. The materials as well as the end product of this effort are intended to reflect the “multi-dimensional” nature of the group and “unique working environment” that brought their ideas to fruition. Using the “material leftovers of a New Haven factory...and abandoned New Haven spaces”, the exhibition “will bridge organic life with the man-made

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world, and use light, sound, and new technologies to create immersive and interactive environments for visitors to experience”.

One manifestation of all these collective ideas being allowed to breathe has been that the Center’s four 3-D printers and laser cutter have been in heavy rotation. The 3-D printers come in several flavors—two more utilitarian models which deposit an inexpensive plastic layer-by-layer onto a stage until a three-dimensional object emerges—and two advanced models which can produce objects with movable parts by depositing both a hard plastic and a lye-soluble resin that creates the open spaces for the movable portions within the finished product after a lye bath. The laser cutter uses a 150-Watt laser to etch or cut plastic or glass. Despite these notable resources, one thing that truly sets the Yale CEID apart from its design center counterparts at MIT or Stanford is the existence of a wet lab in a space on the second floor. The wet lab contains basics such as a dissecting microscope, fluorescence microscope, and thermocycler, but the raw materials to be used are purposefully left to the discretion of the designer. Yusuf explains that users of the facility are more or less let loose and expected to train themselves and gather what they need, all the while knowing that support from the Center staff and faculty is available if needed.

Aside from the open workspace on the ground floor with the 3-D printers and the wet lab, there is also a soon-to-open metalworking area that includes a lathe and other equipment for fabricating sheet metal into various shapes, as well as a 2-D printer that can accept protein or cell suspensions to deposit onto a surface.

At the outset of my grand tour, Yusuf picks up a stack of neon Post-it notes from one of the bins and describes one favorite application: engaging in a design exercise by sitting in a room with a blackboard for hours and gradually encasing himself in a flurry of ideas. In this space, even the act of tinkering with popsicle sticks and school glue is seen as a vital part of the design process. This is not to be confused with aimless tinkering, however; the lifeblood of the CEID remains “design for a purpose”. While it would be possible to use the Center’s resources to develop the next “Angry Birds”-esque mobile app, its true raison d’être is to foster applications of technology that solve some of humanity’s most pressing problems. This might appear unsurprising—isn’t everyone trying to create fast and cost-effective methods for purifying water or measuring biomarker levels with a laboratory on a microchip?

Well, no. As Jason Pontin noted in the December issue of the MIT Technology Review, it is widely acknowledged in Silicon Valley and elsewhere that “real, disruptive innovation”, in the words of PayPal founder Max Levchin, is few and far between nowadays compared with the “long series of technological triumphs” of the 1960s, culminating in the Apollo missions. Today, Pontin notes, a lot of resources and energy is diverted to developing “trivial toys” such as Twitter that don’t really create any value for humanity in the long run, while problems slated to be solved by technology—“hunger, poverty, malaria, climate change, and the diseases of old age” are avoided by risk-averse venture capital firms and industry alike. In this context, the purpose-driven idea incubator that is the CEID takes its rightful place as an important player in the effort to continue Yale’s and our nation’s legacy of true innovation. In the words of several CEID members, working in this space can only be described as a “spiritual experience”—and who can’t use one of those on occasion?

More information about the CEID and the cool things happening there can be found at http://ceid.yale.edu.

Congratulations to the following BBS Fellowship Winners!

**Annie Le Fellows:** Monica Bowen, Genetics and Sachi Inukai, MCDB

**Edward L. Tatum Fellowship:** Valeria Yartseva, Genetics

**Patricia S. Goldman-Rakic Fellowship in Neuroscience:** Mich Omar, INP
Congratulations to all of the students (and their P.I.s) on their successful thesis defenses over the past 12 months

C&M Physiology

Sascha Kopic (John Geibel)
Novel Roles of AMPK in Gastrointestinal Ion Transport

Computational Biology & Bioinformatics

Raymond Auerbach (Mark Gerstein/ Michael Snyder)
Elucidating Transcriptional Regulation Using High-Throughput Sequencing, Data Integration, and Computational Methods

Christopher Bolen (Steve Kleinstein)
Computational Analysis of Blood Transcriptional Signatures in the Study of HCV Susceptibility, Infection, and Therapy Response

Jamie Duke (Steven Kleinstein)
Computational Modeling of Genome-Wide Mutation by AID

Vijay Garla (Amy Justice)
Kernel Methods and Semantic Techniques for Clinical Text Classification* 

Haisu Ma (Hongyu Zhao)
Statistical Modeling for Pathwaybased Drug Target Discovery

Xinmeng Mu (Mark Gerstein/ Michael Snyder)
A Computational Genomics Study: Characterizing Genomic Variants in Non-coding Regions of the Human Genome

Taiwo Togun (Annette Molinaro)
A Multivariate Computational Framework to Identify Genomic Biomarkers in Cancer

Mohamed Uduman (Steven Kleinstein)
Computational Methods for Detecting Antigen-Driven Selection in Ig Sequences

Cell Biology

Katherine Burn (Lynn Cooley)
Insulin Regulates the Germline Starvation Response via Somatic Follicle Cells to Promote Progeny Survival

Xiao Huang (Haifan Lin)
Piwi/piRNA-mediated Epigenetic Regulation and PUM1-mediated Posttranscriptional Regulation

Chengcheng Jin (Richard Flavell)
Roles of Inflammasomes in the Pathogenesis of Osteoarthritis and Metabolic Disorders

Ziba Razinia (David Calderwood)
Filamins in Cell Migration and Molecular Mechanism of their Regulation by the ASB2alpha-E3 Ubiquitin Ligase Complex

Emily Stoops (Johnathan Bogan)
Apical Trafficking in Polarized Epithelial Cells: Novel Techniques and New Pathways

Wei Zhang (Peter Cresswell)
A Role of UDP-Glucose: Glycoprotein Glucosyltransferase 1 in MHC Class I Antigen Presentation

Experimental Pathology

Jerrica Breindel (David Stern)
Signaling Interactions between MET and the ERBB Family and their role in the Progression of NSCLC

Huan Cheng (David Rimm)
Quantitative Protein Profiling to Predict Trastuzumab Response

Kathryn Tworkoski (David Stem)
Analysis of the Melanoma Kinome: The role of the Axl and Mer Receptor Tyrosine Kinases in Melanoma Pathogenesis

Laura DeMare (James Noonan)
A Cohesin-mediated Chromatin Interactome during Embryonic Limb Development

Kristy Lamb (Joann Sweasy)
Tumor-associated Variants of O6-methylguanine-DNA methyltransferase Have Altered DNA Repair Functionality

Sara Marlatt (Klemin) (Daniel DiMaio)
Isolation and Analysis of Small Transmembrane Protein Aptamers that Target the HIV Coreceptor CCR5

John Murdoch (Matthew State)
Multiple Approaches to Characterizing Variation in the Neuropsychiatric Candidate Genes SLC6A4, the Contactins, and the Contactin-Associated Proteins*

Natalie Powers (Jeffrey Gruen)
Discovery of the 6p21.3 Reading Disability Gene

Lu Zhao (Zhaoxia Sun)
The Role of Epigenetic Factors Reptin and Pontin in Cilia Biology and Zebrafish Development

Continued
Cornelia Zorca (Richard Flavell)
The Role of Allelic Associations and Locus Repositioning in the Regulation of TNF Alpha Gene Expression in T helper 1 Cells

Griselda Zuccarino-Catania (Mark Shlomchik)
Evaluating The Function of Memory B Cell Subsets Defined By CD80 and/or PD-L2 Expression in a Secondary Response

Immunobiology

Joydeep Banerjee (David Schatz)
Biochemical Investigations into the Beyond 12/23 Rule of V(D)J Recombination

Augustine Choy (Craig Roy)
Inhibition of Autophagy by Legionella pneumophila

Justin Garyu (Kevan Herold)
The Functional Framework of an Autoreactive CD8 T Cell Population in Type 1 Diabetes

Alex Lipovsky (Daniel DiMaio)
Retromer-Dependent Cell Entry by Human Papillomaviruses

Jessica McDonald (David Schatz)
The Role of E Boxes and Other DNA Elements in the Targeting of Somatic Hypermutation

Kok Shuen”Iris” Pang (Akiko Iwasaki)
Initiation of Protective Immunity against Respiratory Influenza A Virus Infections

Michaela Panter (Peter Cresswell)
Dynamics of Major Histocompatibility Complex Class I Association with the Human Peptideloading Complex

Michal Tal (Caspi) (Akiko Iwasaki)
Autophagy, ROS and Aging Impact Cytosolic Antiviral Immunity

Brian Yordy (Akiko Iwasaki)
Autophagy, Type I Interferon, and the Dynamic Herpes Simplex Virus Host Relationship

Interdepartmental Neuroscience Program

Jacqueline Barker (Jane Taylor)
The Formation and Expression of Addiction Related Behaviors: Cortico-limbic-striatal Circuitry in Flexible Reward-Seeking

Amanda Casale (David McCormick)
Neuronal Communication: The Impact of Single Cell Physiology on Information Flow in Cortical and Subcortical Circuits

Emily Einstein (Marina Picciotto)
Effects of Galanin on Striatal Excitation and Morphine Conditioned Place Preference

Sarah Richards (Gray) (Ralph DiLeone)
Identification and Dynamic Regulation of NF kappa B in the Ventral Tegmental Area During Metabolic Challenge

Olivia Hendrick (Chiang-Shan Li)
Cognitive Control: Clinical fMRI Studies of the Stop Signal Task

Kristin Rudenga (Newhouse) (Dana Small)
Central Taste Representation in Humans

Nathaniel Smith (Mark Laubach)
Modeling Decision-Making in Psychiatric Disorders: Neurobiological Substances of Cognitive Inflexibility

Michael Warren (Tony Koleske)
Regulation of Dendrite Morphology and Synapse Stability by Integrin Signaling

Shari Wiseman (Angus Nairn)
Translational Control in Long-term Plasticity: the Regulation and Function of Eukaryotic Elongation Factor-2 Kinase (EF2K)

Molecular Biophysics & Biochemistry

Vanessa (Crevecoeur) Ducas (Elizabeth Rhoades)
Interactions and Dynamics of the Synuclein Proteins: A Single Molecule Study of Beta-Synuclein and Gamma-Synuclein

William Chang (Demetrios Braddock)
Characterization of Nucleotide Pyrophosphatase / Phosphodiesterase 4, a Dinucleotide Hydrolase, and Its Promotion of Platelet Aggregation

Ornhuma Itsathitphaisarn (Joan Steitz)
Structural Studies of Protein-Nucleic Acid Interactions in DNA Replication and Translation

Mark Landau (Karen Anderson)
Structural and Mechanistic Studies of a Bifunctional Enzyme from Pathogenic Protozoa: Probing Interdomain Communication and Selective Inhibition of T. gondii Thymidylate Synthase-Dihydrofolate Reductase

Stacey MacGrath (Anthony Koleske)
Biochemical Studies towards Understanding the Mechanism by which Arg Binds and Regulates Cortactin

Continued
Chad McCormick (Tom Pollard)
Measuring Affinities of Fission Yeast Spindle Pole Body Proteins in Live Cells across the Cell Cycle

Irene Reynolds (Tebbs) (Tom Pollard)
Genetically Separable Roles of IQGAP Rng2p in the Formation and Constriction of the S. pombe Cytokinetic Contractile Ring

Shambaditya Saha (Tom Pollard)
Characterization of the Role of the Anillin-Related Protein Mid1p in Cytokinesis of the Fission Yeast Schizosaccharomyces Pombe

Hongying Shen (Pietro De Camilli)
Membrane Remodeling and Sphingolipid Metabolism in Endocytosis

Adam Trexler (Elizabeth Rhoades)
Exploring the Disordered State and Folding of Alpha-Synuclein Using Single Molecule Fluorescence Spectroscopy

Molecular Cellular and Developmental Biology

Akwaski Asabere (Michael Snyder)
Comparative Characterization and Functional Analysis of Sequence and Regulatory Variation in Multiple Primates

Erin Betters (Martin Garcia-Castro)
Early Mammalian Neural Crest Development

Patrick Cournoyer (S.P. Dinesh-Kumar)
The Interaction Proteome of the Plant NLR Immune Receptor ‘N’

Jeanne Hansen (Elke Stein)
The Expression of Unc5 Homologs and their Co-receptors in the Postnatal Cerebellum

Jennifer Hardee (Michael Snyder)
STAT3 Promotes Aggressive Tumorigenesis in Diffuse Large B Cell Lymphoma

Andrew Hayward (S.P. Dinesh-Kumar)
ATG6 Interacting Mitochondrial Protein (AIMP) is Targeted to the Vacuole by Autophagy to Limit Cell Death during Senescence and Defense Responses in Plants

Christopher Heffelfinger (Michael Snyder)
Human Gene Regulation

Mary Kunjappu (Mark Hochstrasser)
Characterization of Proteasome Biogenesis-associated (Pba) Factors in the Formation of Constitutive and Alternative 20S Proteasomes

Andrew Lawton (Scott Holley)
Body Elongation: Coherence and Flow in Balance

Philippe Lefrancois (Michael Snyder)
Centromere Studies in the Budding Yeast Saccharomyces cerevisiae

Frederick Ling (John Carlson)
The Molecular, Cellular, and Behavioral Basis of Taste in Drosophila Tarsi

Carson Miller (John Carlson)
Regulation of Odor Receptor Genes in Trichoid Sensilla of Drosophila Antenna

Maeve O’Huallachain (Michael Snyder)
Genomic Variation in Somatic Human Tissues

Shannon Stewart (John Carlson)
Ancient Chemoreceptors in the Drosophila Larva

Michael Stulberg (Scott Holley)
Fgf and Wnt Signaling Interplay in Zebrafish Tailbud Development

Karl Waern (Michael Snyder)
RNA-Seq in Yeast

Microbiology

Dong Chen (Haifin Lin)
Translational Regulation of Mouse Adult Stem Cells and their Progeny by Pumilio 1 and Pumilio 2

Lisa Mattei (Akiko Iwasaki)
The Innate Immune Response to DNA Viruses

Peng Zhong (Walther Mothes)
HIV-1 Cell-to-Cell Transmission: Mechanisms and Therapeutic Implication

Neurobiology

Matthew Krause (Jamie Mazer)
Cortical Circuits for Vision and Visual Perception

Pharmacology

Catherine Chen (Ben Turk)
Functional Re-engineering of Protein Kinase Specificity

Michelle Mo (Barbara Ehrlich) The Role of Inositol 1,4,5 Trisphosphate Receptor Binding Proteins in Neurodegenerative Disorders

Nilda Alicea Valazquez (Titus Boggon)
Structure-guided Studies of SHP-1 Phosphatase Substrate Recognition
According to 2009 statistics surveyed by the U.S. National Science Foundation, only about 14% PhD graduates in the life sciences and biology will obtain a tenure or tenure-track academic position within five years. Further, about 53% of PhD holders in life sciences and biology are being employed outside academia. Hence, as much as a lot of us came into graduate school interested in a career in academia, it might be worth taking a look at alternatives.

A potential career option is consulting.

But, what do people do in consulting? When is ever a good time to consider consulting? Are there internship opportunities available while I am at Yale so that I can give consulting a try? Is consulting RIGHT for me?

B magazine has an interview with Alice Qinhua Zhou (AZ) and Anit Raja Banerjee (RB), Chair and Vice-Chair respectively, of the Yale Graduate Student Consulting Club (YGCC) to get you started on thinking about consulting.

AZ: To be more specific, the kind of consulting that would be most relevant to science PhDs from BBS would be management consulting. I view it as providing professional advice to leaders in large organizations, to help them manage their challenges and goals.

RB: Consultants are like a third-party gut check to these organizations. Imagine giant companies like Ford, McDonalds, Walmart and Google, they might be looking for expansion and are investigating options totally outside their realms of expertise, such as seeking new markets or creating a new line of products. Or they have their own management problems with multiple possible solutions from the top brass without a common consensus. In both cases, they require a neutral and objective opinion on their execution plan.

AZ: For example, in 2009, the Boston Consulting Group (BCG) was called in to help the US government to restructure General Motors and Chrysler, in the wake of the financial crisis. In the recent ‘fiscal cliff’ spate of events, McKinsey was roped in to provide financial advice. The unprecedented immensity of the crises at hand required an expertise and objectivity outside the companies.

B: When did you realize you might like consulting as a career path?

RB: For me, it started off with a case competition I participated in 2010 (my third year). That was the clincher for me. In a case competition, you are presented with a ‘case’, which simulates a real-world consulting problem, and you and your team have to come up with a sound proposal in less than a week. You can imagine working at a really fast pace, with a group of really smart and motivated people in an extremely collaborative way. I remembered that my team did atrociously that year (*laughs*), but what I got, most importantly, was my new-found interest in consulting. Until then, I didn’t realize that the intellectual curiosity that makes me enjoy science so much would also drive my interest in consulting.

AZ: There isn’t a specific time for me. Oh, before I go on I want to make a disclaimer. I LOVE SCIENCE! That’s why I am here in the first place. But I feel more reasons to be drawn to consulting as time goes by. First, I realize that I love the process of problem-solving more than the subject of science itself. The second reason might be more of a personality issue. I prefer working in a team setting. In science, we see that people mostly work by themselves. Finally and probably the most significant...
reason, is that I feel that the influence of my scientific work can only be extended to a small esoteric group of people, and its impact might be only felt a decade from now, if I am lucky. I am more satisfied seeing the immediate impact of my work. I believe that through consulting, I can advise these large organizations to make big decisions and in doing that, I can have a hand in shaping the world as well.

**B:** In addition to case competitions, what consulting-related opportunities are there while you are doing your PhD?

**RB:** I would say the best opportunity to learn about consulting first-hand is still to participate in the case competitions. YGCC organizes one every year and participants include Consulting Clubs from other schools like Harvard, MIT, Princeton, Columbia, Cornell etc. Many of the members from the top two teams usually land top consulting jobs.

Apart from the case competitions, the Yale Graduate Consulting Club also provides pro bona consulting services for the community in New Haven. For example, we have helped consultancy firms in New Haven to source for clients. We recently helped a local startup company to come up with a marketing strategy to showcase the various eateries in New Haven. We also maintain a network of contacts, especially through our alumni and existing clients. Through participation in the club activities, as long as a person is interested, he/she can gain access to a variety of consulting and networking experiences.

**AZ:** Unfortunately for consulting internships, there are limited opportunities, simply because they are highly selective and interns are expected to work for weeks at the companies. As we all know, PhD students usually do not have the luxury to take a very long period off. I need to take a 10-week leave of absence for an internship at Bain this coming summer (in 2013). There are, however, much shorter ones designed especially for PhDs, like the McKinsey Insight, McKinsey MD Contact or Bridge to BCG programs. These usually span from two to three days.

**B:** What advice would you give to anybody who might be looking?

**AZ:** I would say come in with an open mind. It is natural to feel awkward at first. I felt awkward when I first started, but it got better gradually. Also, I think most PhD students already have some traits of an able consultant: an innate intellectual curiosity, a certain level of ability to influence people and a keen interest to create an impact.

**RB:** Take that first step. Take an hour off your schedule to attend one of our weekly sessions, or a BCG or McKinsey recruiting event. If you decide to delve deeper, you can participate in the case competition, just to get your hands wet. It is only a week long, so you can treat it like an intensive crash course on consulting. From there, you can gauge if you want to take things further.

The Yale Graduate Consulting Club has a very comprehensive online resource for consulting. Details of their events can also be found here: [http://www.yalegradstudentconsulting.org/about_ygcc/](http://www.yalegradstudentconsulting.org/about_ygcc/)

For further enquiries, please contact YGCC via the email: yale.grad.consulting@gmail.com

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If you’re not familiar with the term parkour or free-running, you’ve probably been spending too much time in lab and haven’t watched a recent action movie. My first real exposure to this amazing sport came after I had been doing plyometrics exercises to increase my vertical leap. Many of the exercises involved jumping from heights and absorbing the landing on your toes. Then in late 2006, I went to the cinema to watch a movie, and “mistakenly” ventured into the adjoining room where “Casino Royale” was playing. I managed to walk in on the opening scene and was immediately hooked.

There was an elaborate chase sequence with James Bond (Daniel Craig) in hot pursuit of Mollaka (Sebastien Foucan) across the terrain of Madagascar (which was ACTUALLY the Bahamas). For five minutes, I was captivated as I watched Mollaka vault walls, leap through windows, climb construction beams and fight off James Bond.

Parkour evolved from a concept of physical development known as the “Natural Method”, which was developed by the French physical educator, theorist, and instructor Georges Hébert (1). Born in Paris in 1875, he served as an officer in the French Navy before the First World War in St. Pierre, Martinique. In 1902, when Mt. Pelee erupted, Hebert coordinated the escape and rescue of 700 people. This experience led him to later develop his personal motto “Être fort pour être utile” (“Being strong to be useful”).

The core philosophy of Georges’ “Natural Method” was based on development in three key areas:

1) **Physical**- developing organic resistance, musculature, and speed, towards being able to walk, run, jump, crawl, climb, balance, throw, lift, swim, and defend yourself

2) **Virile**- having sufficient energy, willpower, courage, coolness, and firmness to push through challenges

3) **Moral**- through education, one can elevate the emotions, and direct, or maintain the moral drive in a useful and beneficial way

Hébert outlined the development of the virile system by the execution of certain difficult or dangerous exercises requiring the development of various qualities. Such dangerous activities involve seeking to control the fear of falling, jumping, rising, plunging, or walking on an unstable surface. The “Natural Method” was adapted by Raymond Belle and passed onto David as “le parcours”.

Born on April 29th, 1973 in Fécamp, Normandy (2), David Belle was raised by his maternal grandfather, Gilbert Kitten (former Regimental Sergeant-Major of the Parisian military fire service). Impressed with his grandfather’s tales of heroism, and influenced by his father, Raymond Belle, a legendary soldier and firefighter described by many as a “force of nature” (3), David displayed a passion for action from an early age. He gradually developed acumen in climbing, gymnastics, and martial arts and left school at 15 to improve these skills. He imagined scenarios where he would use his physical abilities to escape situations, showing strength and courage while running, jumping, vaulting, climbing, hanging from things, and keeping his balance.
Dear B,
The lab next to ours uses fruit flies, and they aren’t careful in handling their stocks. As a result, there are flies everywhere in our lunchroom. We complained, but the lab just doesn’t care. What should we do?

-Grossed out in Genetics

Dear Grossed out in Genetics,
It’s times like these that you have to approach a problem in a calm, grown-up manner. That’s why I recommend you release a giant bucket of frogs into the neighboring lab. Once the frogs decimate the unattended fly stocks, the lab might finally pay attention to its bugs.

Dear B,
I’m a postdoc, and I just got my first request to review a manuscript. Do you have advice on what to say if a paper should be rejected?

-Nervous in Neurobiology

Dear Nervous in Neurobiology,
Reviewing a paper can be a major time sink, especially when you’re only going to reject it. To avoid wasting time writing a thorough review, I recommend adopting any of the brief but thoughtful rejection notices below:

- No plot. No character development. Definitely two thumbs down from this reviewer.
- Lies! Lies! Damned Lies!
- Seriously, I hate that font.
- My paper on the same topic is going to be way better.
- Sorry, but there weren’t enough pictures to keep me interested.
- I just couldn’t get past the lame title.
- With 37 authors on the paper, I was expecting, well, more.
- If the authors think they can publish in this field without citing the work of a leading expert (aka, me), they have another thing coming.

Dear B,
I’m worried about the Zombie Apocalypse. If it happens when I’m on campus, where should I take refuge?

- Disaster Prepper

Dear Disaster Prepper,
I’ve long pondered this question and believe I’ve found the optimal location: the top floor of KBT. Here are logical reasons why:
- First, you get a panoramic view of everybody else getting eaten. It’s like watching The Walking Dead without commercials or bad acting.
- Next, KBT is on a steep hill, which is tough for zombies. Plus, with the ridiculous winds on the hill, frail zombies will just blow over.
- Last, should any actually make it into the building, well, the elevators never work, so they’ll have to take 12 flights of stairs to get to you. It’s a well-known fact that zombies have terrible joint problems (that’s why they walk so funny), and most will say “bugger this” by the third floor and turn around to seek easier prey. Like hung-over undergraduates.