BROWN

Brown University Faculty Bulletin

Volume IX/Number 2
Current Issue: May 2009

FACULTY BULLETIN
TABLE OF CONTENTS

MAY 2009

PAGE

Editorial Introduction

Peter Wegner and Peter Richardson
Editors

This issue of the *Faculty Bulletin* begins with an article by Michael Pickett on the near-term future of Information Technology here. In a field distinguished in its early days for vaporware in its forecasting, this is a sensible review of where we may continue to innovate, and more surely seek to be leading in our level of support in this field, which the two of us editors have seen grow technologically from the first transistors, a remarkable development in just a few decades.

The next article, by Dwight Heath, one in our series on Departments and Programs, is about Anthropology, which has nurtured a Museum as well as a steadily growing program in teaching and research, and with the luxury of teaching largely as its members have pleased, with fruitful results.

The third article, written by Louis Putterman, is one in the series about our Committees, the Advisory Committee on Corporate Responsibility in Investment Policies. It is a classic example of the strengthening of the governance at Brown by broadening participation in advising the Corporation, and is unusual in including not only campus-based members but also alumni.

Our fourth article, by Bob Pelcovits, also discusses financial responsibilities for the faculty to consider personally, explaining how we can help regarding Financial Aid for Undergraduates.

The next two articles submitted by Felicia Nimue Ackerman address issues we all face as faculty members (and which were published recently in the *Providence Journal*), the first raising the question of techniques we may use to be fair in grading, and the second on whether students should not be encouraged to waive their rights to see letters of recommendation we write about them. A U.S. Supreme Court decision a few years ago clarified that FERPA permitted only one remedy for alleged violations, and did not leave room for civil suits by individuals against those alleged to have violated its provisions, but we recognize the merits of its provisions anyway. We will be pleased if these articles lead to further discussion of these topics in our pages.

The last two articles in this issue arise from centenaries. The first, by Peter Wegner, is about Isaac Newton and Stephen Hawking, who have both held the Lucasian Chair at the University of Cambridge, and the second, by Peter Richardson, is about Charles Darwin (on the bicentenary of his birth) and Gore Ouseley (an ancestral relative of Peter Richardson's) whose observation with a quagga was utilized by Darwin in his major works.

Information Technology: Finding our Balance

Michael Pickett
Vice President and CIO

Brown's faculty has a history of innovative uses for information technology in scholarship, teaching, mentoring and research. Breakthrough work in hypertext, electronic encoding of text, visualization and other areas has occurred on our campus and we continue to see the women and men of our faculty create new technologies and to discover new uses for them.

Why then do we hear some of our new faculty comment that Brown is equipped with "flint knives and bear skins" with regard to the level of information technology available? Why do we hear other faculty comment that we spend too much on technology and that we should just give the money to departments?

The answer can be found in understanding the hard won and quickly lost balances found in the field of technology. Few would argue that for the past twenty years we have seen an explosion of change in the in the tools that we use to communicate, publish, seek information and analyze data. While most of the underlying principles remain, many of us Skype, IM, PowerPoint and even tweet where we once spun rotary dials, penned postcards and dusted our sleeves with chalk.

Are things really better? It is said that a tedious lecture poorly converted to digital slides can be nearly twice as effective at putting students to sleep. But for many faculty, the ability to rapidly search terabytes of data, access the most up-to-date digital journals, augment teaching with digital media and to rapidly perform complex calculations have expanded the range of challenges that we can explore.

If we assume that the rapid rate of technology innovation will continue and that some, but not all of the innovations will be successful, how do we organize ourselves around spending Brown's resources wisely while ensuring that we remain competitive teachers, mentors, learners and researchers? How do we ensure that our faculty has the support to experiment with new techniques without having to become experts in information technology?

First, we must know where we are going. Last year was spent working with faculty, staff and students to develop a Brown Information Technology Strategic Plan https://wiki.brown.edu/confluence/display/itstrategicplan. This five year plan describes three high level strategies: 1. Invest in technology to achieve our academic goals; 2. Ensure our ability to prevent disaster or carry on in the face of disaster; and 3. Develop, sustain and periodically replace our core services. The Plan includes principles that will help guide our decisions and a set of short-term goals. These goals include the development of shared high performance computing, research storage and new media services. Other goals address support for faculty who wish to use technology in teaching, increasing our network capacity and adding redundancy to core technology services

essential for the operation of the university. I am pleased that after six months, Brown has achieved over half of our year 1 goals even though the current economy has reduced available resources. Over the fall term, we will seek guidance on identifying the goals that Brown should address in year 2.

Knowing where we need to go is not sufficient. The processes that we choose to attain our goals will make a big difference in the outcomes. One of strategic planning working groups addressed the question of collaboration among the many groups and individuals across Brown that provide technology support (see working group reports at https://wiki.brown.edu/confluence/display/itstrategicplan/Working+Group+Final+Reports). The collaboration team report describes a five year vision resulting in a cohesive IT community that balances centralized and decentralized services. As we expand create shared services like high performance computing, it is essential that we create more mature IT service models that recognize the unique contributions that must be provided by experts located in academic departments as well as the savings that we can obtain by selective, central service provision. Finding a productive balance of services, clarifying our roles and improving our communications are keys to creating successful services and in fostering a unified IT community.

Other working groups explored innovation and technology directions. It is in these areas that finding creative balances between competing ideas is needed. On one hand, we must conserve resources, on the other hand our vitality as a university is damaged if we don't experiment and sometimes make risky investments. The working groups noted that innovation often arises in departments and must be encouraged there. The groups also noted that central services can provide a foundation of reliable services like the network, databases, authentication and others that often become duplicative if they are created in departments. We must seek balances between these services and ensure that they are complementary.

Whatever balances we find over the next few years, we will always see certain faculty members who take a cutting edge approach in their use of technology. As we serve those faculty, we must take a lesson from Scott Adam's Dilbert comic strip where a minor character named Mordac declares himself to be "the preventer of IT services." Mordac enforces rules that make his life easy, but creates obstacles for everyone else. We must know when it is time to get out of the way and when risks are high enough that we need to slow something down.

We will see faculty who are most comfortable using technologies that tried and true and we will need to help wean them from older methodologies that are at the end of the technology life cycle. We will see differences of opinion in how technology services should best be delivered and we must ensure that we do not end up with some departments being "haves" and others being "have nots."

Technology is essential to the productivity of most of our faculty and we must ensure that we find reasonable balances in what is provided, how we provide services, what they cost

and how we navigate the rapid changes we are sure to see. I look forward to your guidance as we address these issues over the coming years.

The History of Anthropology at Brown University

Dwight B. Heath
Professor Emeritus of Anthropology

It has been fifty years since Brown self-consciously hired an anthropologist; (I began teaching in 1959). J. Louis ("Lou") Giddings, a trained and experienced archaeologist, had been on the staff for a couple of years but his courses (human evolution, cultural anthropology and American Indians) and his appointment were listed as "Sociology". If we dig beyond living memory, it is interesting to note that Alpheus S. Packard (professor of philosophy at Brown) appears to have offered, in 1891, what was then only the second elective course in anthropology for undergraduates in this country; it was popular and grew rapidly but ended with his death a few years later.

Lou also served as Director of the Haffenreffer Museum of the American Indian (now: Haffenreffer Museum of Anthropology), that had just been donated to Brown. Curiously, the Museum itself is also successor to an almost-forgotten predecessor; in 1872, professor of agriculture John W. P. Jenks established a Museum of Natural History (specifically, at his insistence, including anthropology) at Brown. When he died, the collections were offered to the local Audubon Society and to the city's Roger Williams Park Museum of Natural History; they each took a few choice pieces but most of the Jenks Museum holdings stayed unattended in Rhode Island Hall until 1915. Then Professor J. Walter Wilson, acting on behalf of the Department of Biology, resolved to have 92 truckloads hauled to a dump along the Seekonk River. It is not clear how a few ethnographic and archaeological items nevertheless wound up in the attic of Van Wickle Hall, where forty years later, Anna and I salvaged them while the wrecking-ball was clearing space for what is now the Rockefeller Library. Now they, too, are part of the significantly expanded Haffenreffer Museum in Bristol, Rhode Island (which, although closed to the public, finally has a presence on campus at Manning Hall).

Within the renamed Department of Sociology and Anthropology, we expanded our course offerings to include cultural change, ethnicity, Latin America, Arctic archaeology, and ethnohistory. Responding to student enthusiasm, we developed a concentration program a few years later. By 1962 we had an M.A. program, and then were joined gradually by a number of other colleagues who expanded our offerings, to include social organization, development, Oceania, Africa, and a host of other topics. In 1970 there was "an amicable divorce": the anthropological inclusion of archaeology, linguistics, human biology, non-Western cultures, and some other topics didn't always fit well in Sociology, just as Sociology's emphasis on demography was <u>at that time</u> alien to Anthropology (although it is no longer so).

Simultaneous with an independent department was a major physical move to Giddings House, renovated with funds donated by the distinguished anthropologist, Watson Smith, a Brown alumnus ('19) and long-term trustee. That year also saw the start of a Ph.D. program.

One of the luxuries for faculty here for most of the time has been freedom to teach pretty much what we pleased, and the growing curriculum strongly reflected the interests of individual faculty members, with no prerequisites and no clear sequencing of courses, unlike the pattern in many other departments. This was not so chaotic as might be imagined, and considerable strengths came to be recognized internationally as well as locally; e.g., in Arctic studies, ethnicity, "the new archaeology" (combining close integration of social theory and historical sources with the results of systematic excavation), alcohol studies, and ethnomusicology (now situated in the Music Department).

Some unwelcome attention was focused on the Department of Anthropology in the mid-1970s when an early instance of alleged sex-discrimination escalated to a class-action suit ("the Lamphere case"). Colleagues throughout the university had to comply with the wide-ranging process of legal "discovery" and it cost Brown dearly in time, money, and reputation. The claimant eventually settled out of court and even returned to teach here for a year. A salutary outcome was the variety of administrative changes instituted then that greatly enhanced transparency in the processes of hiring and promotion. And Louise (the plaintiff) has recently donated an endowed chair in gender studies here.

Faculty members in anthropology have always been active in other programs. Internationally, this has included Associates in Current Anthropology, World Health Organization, and Peace Corps, among others. At Brown, Human Biology was an early spin-off; later came American Civilization, Latin American Studies, Center for Alcohol and Addiction Studies, Cognitive and Linguistic Sciences, Ethnomusicology, and Middle Eastern and Islamic Studies. Anthropologists are now also very active in the Center for Study of Race and Ethnicity, Institute for Archaeology and the Ancient World, Population Studies and Training Center, and Watson Institute for International Studies. We now number about 25 (including some part-time) and offer about 45 courses.

The undergraduate program continues to serve about 60 concentrators, even while related and independent concentrators proliferate. We continue to draw about 40 graduate students from around the world, most of whom complete their degrees in reasonable time. Our graduates have gone on to make important contributions not only in anthropology and in education, but also in international banking, film-making, advertising, community development, medical administration, television, and many other fields. Is there another discipline of which 2 former students have served as recent Provosts at Brown?

Advisory Committee on Corporate Responsibility in Investment Policies

Louis Putterman
Professor of Economics

The Advisory Committee on Corporate Responsibility in Investment Policies (ACCRIP), a committee representing the University's various constituencies that advises the Brown Corporation on matters of social responsibility as an investor, seems to be little known among Brown faculty. I thought it worthwhile to write a few paragraphs about it for this bulletin, in part because there are opportunities for faculty to serve on the committee this coming year and beyond, and engaged members would be invaluable to the committee's work.

About six years ago, I was invited by the Committee on Nominations to serve on ACCRIP. Although I had been teaching at Brown for over twenty years and have a natural interest in what the committee does since the topics on which I teach include firm behavior and economic systems, I had never heard of it. The committee is composed of representatives of the main university constituencies—alumni, faculty, graduate and undergraduate students, and staff—who are charged by the President and Corporation with advising them on matters of social responsibility pertaining to the investment of Brown's endowment. Its origins date back to the days of the movement to divest from companies doing business in apartheid-era South Africa. In most years, the committee spends the majority of its time discussing how to advise the Corporation to vote its proxy on social resolutions brought by shareholders of companies held by the endowment. Among the issues raised by these resolutions, questions of corporate environmental policy, health impacts, management and labor compensation, political contributions, humane treatment of animals, and interactions with foreign governments have been the most common. The committee has also taken positions on issues not specifically raised by shareholder resolutions, for instance it has advocated divestment from companies producing and selling tobacco products, has supported the creation of a social choice fund, and has proposed divestment from companies whose activities are perceived to help the government of Sudan carry out genocidal actions in Darfur by putting revenue in its coffers while doing little for ordinary Sudanese. During the current academic year the committee advised students on the formation of a social investment group that will be based on the model of the existing Brown Investment Club, and it has tried to help the university sort out its responsibilities with regard to a labor relations issue in a company in which the university was said to be invested, an issue brought before the committee and other university bodies by the Student Labor Alliance.

The committee has three faculty members selected for three-year terms by the Faculty Nominations Committee, two undergraduate students and one alternate chosen by the Undergraduate Council of Students, a graduate student chosen by the Graduate Student Council, and three alumni members selected by the Office of the President in consultation with the Brown Alumni Association. Representatives of the University's Investment Office attend ACCRIP meetings to provide information about investments held by the

endowment but are not voting members. Two years ago, two voting members representing university staff were added to the committee. And in recent years, the university has covered the cost of hiring an undergraduate research assistant.

During my time on ACCRIP, I've been impressed by the knowledge and social concern brought by alumni members who have been chosen from among active alumni particularly knowledgeable about the investment world. And I've been encouraged by the combination of social conscience and maturity brought to ACCRIP's deliberations by its student members. We have been somewhat less lucky on the faculty side, where the nominations process has not consistently identified individuals inclined to take a keen interest in the committee's work. My hope is that a better known ACCRIP might attract more enthusiastic service from a few members of our faculty who consider the kind of work it does to be both interesting and important. This is not a committee that demands a vast chunk of its members' time, around twenty hours of meeting time and an equal amount of time to study issues and respond to memos over the course of a year being a rough upper limit, with the possible exception of the committee chair.

I encourage colleagues interested in the work of the committee to contact me or the Committee on Nominations.

Faculty Support for Undergraduate Financial Aid

Bob Pelcovits
Professor of Physics

"We all know that the real reason universities have students is in order to educate the professors."[1] - John Archibald Wheeler, 1976

John Archibald Wheeler, a famous theoretical physicist (his many achievements include coining the term "black hole") who mentored many generations of students during his forty years teaching at Princeton, captured succinctly one of the many benefits we faculty enjoy in our academic lives. Not only are we able to pursue our scholarly interests as researchers, but we also have the opportunity to teach and mentor bright, inquisitive students from whom we in turn learn much. In my own case, I know my appreciation for physics and mastery of the subject has grown tremendously over the thirty years I have been on the Brown faculty interacting with students who are passionate learners who have challenged me to think very deeply about what I teach.

We are quite fortunate to be able to attract highly intelligent and accomplished students to Brown. While attending a discussion event last fall at the Sheridan Center where all of the participants spoke about their enthusiasm for teaching and interacting with our undergraduate students, I was struck in particular by the comments of the junior faculty who were present. These faculty members, including some who had yet to teach in a classroom setting but who had supervised students in their research labs, uniformly remarked on how impressed they were by our students and how much they enjoyed working with them. I think this opinion is shared by the faculty across the board.

The current economic downturn has put tremendous pressure not only on the University's budget, but also on the ability of our current and potentially future students to afford a Brown education. Fortunately, the University administration has made maintaining a competitive financial aid program one of our highest priorities. A number of steps already have been taken to this end. At its meeting last October, the Brown Corporation launched a new initiative aiming to add $100 million to the financial aid endowment goal of the Campaign for Academic Enrichment and bringing the total goal to $400 million. For the next fiscal year beginning this July, the undergraduate financial aid budget will increase by 10.9%. And at its February meeting this year, the Corporation accepted gifts from donors totaling $3.125 million for undergraduate scholarships.

The Faculty Committee for the Campaign which I chair believes that it is time for faculty to join in this effort to support financial aid for our undergraduate students. The Committee recently emailed all campus-based faculty announcing a plan to establish the Faculty Scholarship Fund, a named scholarship that will exist in perpetuity to provide financial aid to a qualifying undergraduate. Endowing such a scholarship requires raising $250,000 by December 31, 2010, the official end date of the Campaign. The Committee

[1] This quote appears in the April issue of *Physics Today* (page 55) as well as several websites.

(whose membership list appeared on the email) represents a broad range of faculty spanning the academic disciplines and levels of seniority and is very enthusiastic about this initiative. This fundraising initiative offers faculty an opportunity to donate to the Campaign in a specific way to support a goal that all of us share - namely, bringing the best students to Brown, irrespective of their ability to pay. As the quote from Wheeler at the beginning of this article indicates, we, the faculty, personally benefit from achieving this goal. The Committee wants to affirm the faculty's commitment to our students, and also believes that a successful effort will serve as powerful motivation for other donors to step forward and join us in supporting undergraduate financial aid.

Let me conclude by putting the $250,000 goal into some perspective. There are currently 685 campus-based faculty (though I hasten to add that the Committee would welcome participation by all faculty, including emeriti). Achieving our goal requires a tax-deductible contribution of approximately $365 from each faculty member. Pledges can be paid over five years. Thus, a payroll deduction of $6 per month (before taxes) for five years from every faculty member would allow us to achieve our goal. Donate $12 per month and we can fund two scholarships!

I hope you will join me and the Faculty Campaign Committee in contributing to this very worthy cause which will have a direct and beneficial influence on our professional lives. You can set up a payroll deduction by visiting: https://gifts.development.brown.edu/Brown/. You can also make a planned gift by visiting: http://plannedgiving.brown.edu/.

Thank you in advance for your contribution.

A Blind Devotion to Fair Grading[2]

Felicia Nimue Ackerman
Professor of Philosophy

LIKE MANY professors, I teach courses ranging from introductory to advanced. I grade (or supervise assistants who grade) papers and examinations. How is this grading different from most other grading? Like justice, it is blind. My students put their names only on pages that the grader looks at after determining the grades.

Blind grading can be a boon for students who have reason to fear bias. The fashionable forms of this fear involve race and gender. Decades of blind grading have shown me that race and gender bear no relation to the quality of my students' work. But this scarcely makes me free of bias. What teacher lacks bias based on a student's past performance? When a student has already turned in two mediocre papers, it is hardly unreasonable to expect a similar third one. Yet the student is entitled to have his third paper considered independently of his prior bad acts. Teachers can try to compensate for such bias but may compensate too little or too much.

Many professional journals evaluate submissions blindly, but most of my students tell me I am their only teacher who grades this way. Why don't all teachers do it? Why don't students and parents demand it? Here are some answers I have heard.

"Blind grading does not eliminate all bias." Who claimed it did? Whenever I get a paper with an opening sentence like "Humankind has long pondered the question: What is real?" I am aware that blind grading cannot bypass my "Eek!" reaction. Such writing should affect grades in English composition but not in philosophy courses, where I aim to grade only on clarity and philosophical merit. Blind grading also does not eliminate ideological bias or bias in cases where a student's writing is recognizable. Blind grading does not eliminate all bias any more than flu shots prevent all influenza. Should doctors stop giving flu shots?

"Blind grading is unnecessary for multiple-choice tests and impossible for class participation." Again, limitations hardly make a practice useless.

"Blind grading of written work may lead students to avoid class participation or censor their writing if they fear overlap." I urge my students to express their ideas both in class and in writing. If this makes what they write recognizable, so be it. The risk is small, since, as I assure them, when I think I can tell whose written work I am grading, I usually turn out to be wrong.

"Blind grading necessitates that students avoid discussing their papers with the teacher in advance." There are various ways around this problem. If I have an assistant who grades the papers, students may discuss them in advance with me. If I grade the papers myself,

[2] Tuesday, June 24, 2008 (from *The Providence Journal*)

students may still discuss them in advance with me — by e-mail using addresses that mask their identities.

“Blind grading is so impersonal.” That helps make it fair.

“Irrelevant considerations never influence me; so I don’t need to use blind grading.” I hope teachers with this flattering self-assessment will try blind grading and see whether it makes a difference.

“I’ve worked hard all along in this course, and I think whoever grades my written work should take my past performance into account.” This sort of objection illustrates how bias has beneficiaries as well as victims. Some students may want the benefit of a halo effect, but that does not mean they should get it. Halos are for angels.

Wa(i)ving Rights Away[3]

Felicia Nimue Ackerman
Professor of Philosophy

IMAGINE THIS SCENARIO. Olivia Ramirez, a college senior, visits her school's Career Development Center. She is unsure what to expect, but one discovery startles her. Application forms for large corporations routinely include this clause: "If you belong to a protected group, you have the right to equal pay. You also have the option of waiving this right. Check the box to indicate whether you wish to waive this right."

As a Latina, Olivia knows that she is doubly protected. "Why should I have to waive my right to equal pay?" she asks the career counselor.

"You do not have to. It is an option."

"And if I reject that option, will they reject me? How many people don't waive their right?"

"As far as I know, virtually everyone waives it."

Olivia wonders how this practice can go uncriticized at a college that oozes protests for everything from endangered piping plovers to the use of "girl" for any female human over 15. But she expects that it would be pointless to argue with the counselor. She thanks him for his time and walks out onto the quad where an Earth Day banner is urging, "Save the Earth before it is too late."

This tale may seem preposterous. Isn't it obvious that such a waiver system would undermine the right to equal pay? Companies don't really do this, do they?

Actually, they don't. But colleges and universities do something similar.

When I was a graduate student in the activist 1970s, a new law managed to penetrate my militantly apolitical outlook. The Family Educational Rights and Privacy Act of 1974 (FERPA) gave postsecondary students the right to see their education records, which frequently include letters of recommendation. I was thrilled to think that students could finally learn what was in those letters and which ones, if any, contained inappropriate remarks about such matters as personal appearance and political persuasion.

It has not turned out that way. Colleges and universities have taken advantage of a loophole in FERPA. They use a waiver system that parallels the imaginary system Olivia encountered and gives students the option of waiving the right to see their letters. Recipients of the letters can see whether students have waived this right. Students are

[3] Tuesday, August 26, 2008 (from *The Providence Journal*)

routinely advised to do so on the grounds that otherwise, their letters of recommendation will not be taken seriously.

How compelling is this advice? As a professor, I have read thousands of letters of recommendation. I cannot recall a single case where an applicant failed to "choose" the waiver "option." The waiver option drives out all other options. In effect, it nullifies students' right to see their letters of recommendation.

America's colleges and universities are alternately extolled and reviled as bastions of liberalism. Why are they so illiberal about students' right to see their letters of recommendation? A common rationale is that a recommender might not be candid if he thought that students would see what he wrote about them.

Recommenders, however, are usually teachers. Our educational system relies on the assumption that teachers will be candid when grading students. Knowing that students see their grades does not keep screening committees from taking those grades seriously. The same could be true of letters of recommendation under a system requiring teachers to be as open with students about those letters as about grades. Of course, this sort of system might prevent letters from mentioning such matters as whether a student smokes or has an egalitarian marriage, both of which I have actually seen discussed in letters of recommendation. That would be all to the good.

Rather than exploiting a loophole that undermines students' rights, colleges and universities should stop "offering" the waiver "option." In the meantime, recommenders can do what I have always done. Give all students copies of the letters that you write about them, even if they waive their right to see them.

This issue is hardly as glamorous as saving the Earth. But it involves a wrong that colleges and universities themselves have created and that they themselves can end.

Isaac Newton & Stephen Hawking

Peter Wegner
Professor Emeritus of Computer Science

Isaac Newton was born in 1642 (the year of Galileo's death) and at age 27 in 1669 he became Lucasian Professor of Mathematics at Cambridge University. This professorship is currently held by Stephen Hawking, who was born in 1942, exactly 300 years after Newton, and whose recent account of Newton's life (in *God Created the Integers*, 2005) has contributed to this article.

Newton's father died before he was born; his mother remarried and sent Isaac to live with his grandmother from age 2 to 12. According to Hawking, Newton hated his stepfather who, however, left his mother a substantial legacy when he died in 1654. Newton was a weak student at school, but entered Trinity College at age 19 in 1661, initially performing chores like waiting at table. He was elected a scholar in 1664 and had to return home for 18 months in 1665 due to bubonic plague; but he managed to study mathematics and astronomy at home. On returning to Cambridge, he worked with mathematician Isaac Barrow, who recommended him for the post of Lucasian Professor of Mathematics on Barrow's retirement in 1669.

As Lucasian professor, Newton's first topic of research was optics, including the refraction of light by prisms, construction of a refraction telescope, and the model of "Newton's rings". His model was questioned in the 1670s by Hooke, a leading member of the Royal Society. Newton, angered by Hooke's challenge, responded by refusing to publish his work on optics until after Hooke's death. He likewise quarreled with Leibniz about the calculus, claiming that Leibniz had stolen Newton's model of the calculus and that Leibniz' publication in 1684 drew on Newton's earlier work in the 1670s, about which Newton had informed Leibniz. Current scholarship maintains that the two developed the calculus independently.

Newton's dispute with Hooke contributed to his writing the *Philosophiae Naturalis Principia Mathematica* in 1687, which made him the world's most important scientist and led to his assuming the chair of the Royal Society shortly after Hooke's death in 1703. But despite his increasingly high status, Newton continued to quarrel with his colleagues. He asked the Society to examine the argument between himself and Leibniz, and made the investigating committee issue a report justifying him and denigrating Leibniz. The report was actually written entirely by Newton himself, as were several other derogatory assertions wrongly ascribed to his scientific colleagues.

Newton also had a strong disagreement with Flamstead, the head of the Royal Observatory, insisting on the publication of Flamstead's astronomical work even though Flamstead himself did not want it published. However, in this case Flamstead prevailed despite Newton's assertion that the Royal Society had a right to publish the work. A

further problem was Newton's insistence as chairman of the Royal Mint that counterfeiters should be hanged rather than merely fined and/or given prison terms. He was instrumental in the execution of hundreds of counterfeiters and retained chairmanship of the Mint until his death in 1727.

Some scholars have claimed that Newton's quarrels with colleagues and his desire to hang were caused in part by his harsh upbringing; but whatever the reason, it seems that his argumentative nature had a negative impact on Newton's life – something that has been insufficiently discussed because of his substantial contributions to science.

Newton suffered a nervous breakdown in the 1670s during his altercation with Hooke, and again in the 1690s, leading him to drop his scientific research in favor of the study of alchemy. He never married, in part because of a flawed relationship with his mother, but maintained a longstanding friendship with a Swiss colleague (Fatio de Duillier) whose death caused a further breakdown. During the reign of James II (1685-88), he supported the Protestant opposition, working with John Locke and Samuel Pepys, but ultimately rejected them because of a third nervous breakdown. In later life, he became increasingly religious and abandoned his scientific research, though he continued as President of the Royal Society until his death.

Stephen Hawking's account of Newton's weaknesses as well as his contributions is an interesting assessment by one world-renowned Lucasian professor of the life and work of his illustrious precursor. I recall attending Hawking's lecture at Brown about 20 years ago, and then joining him at a restaurant, where his nurse asked me to feed him his dessert while we were conversing.

Charles Darwin and my Ancestral Family

Peter D. Richardson
Professor of Engineering and Physiology

My birthplace is in walking distance from Down House, Beckenham, in Kent, which was for long the home of Charles Darwin. My father spent his final days close to our old family home in the Darwin Ward of a nearby hospital. That same summer (1999) Peter Wegner was hit at Trafalgar Square by a double-decker bus, and I visited him in another hospital, in London; for him – unlike my father - there was hope of recovery, which has been remarkably well fulfilled.

In November 2008 I received an out-of-the-blue e-mail enquiry from a scholar in Edinburgh telling me he was making a study of groups of people's knowledge of Darwin. I took the chance to ask him if he knew anything of possible contact between a member of my ancestral family, Sir Gore Ouseley, and Charles Darwin, because I knew both of them had been Fellows of the Royal Society of London (as I am myself now) with overlapping portions of their lives as such. My enquirer, Ernesto Alvarado-Reyes, kindly replied with a very helpful clue and comments; he did not know of any personal interaction, but he knew of an intellectual one, involving mules, and the Royal Society had been instrumental to the interaction.

When I was a child, my family told me some of its history. On my mother's side my grandfather (who had died before I was born) had been a business writer, novelist and publisher, and in an earlier generation of his family there had been Sir Frederick Arthur Gore Ouseley, who was Heather Professor of Music at the University of Oxford; and because that side of the family was rather keen on music, the stories I heard as a child centered on him and did not go back further. That was a pity, because Frederick's father was Sir Gore Ouseley, who had quite a remarkable life. Even now, I find incidental references to Sir Frederick Ouseley, as in Oliver Sack's charming book, Musicophilia, in which a chapter is entitled after a saying of Frederick as a 5-year-old child, associated with his perfect pitch, "Papa blows his nose in G".

Sir Gore's personal history, as far as I had discovered it, made him an unlikely candidate to be a person with an intellectual interaction with Charles Darwin. Born on June 24th, 1770, he and his elder brother William were privately educated. In 1787, in their teens, they went different ways. Gore went to India, where he was successful in business and studied languages and cultures of Middle-Eastern countries. William went to Paris, becoming interested in Persian literature, and following service in the 8th Regiment of Dragoons until 1794 (when he sold his commission) he went to Leiden to resume his Persian studies. William Ouseley's first book was 'Persian Miscellanies' published in 1795, and in 1797 he received honorary doctorates from Trinity College, Dublin, and Rostock, and was knighted in 1800 in recognition of his promotion of oriental studies, which had continued with 'Oriental Collections', 1797-1799, and translation of several works in Persian. He was elected a Fellow of the Royal Society of Edinburgh in 1802.

Meanwhile Gore was much involved in India, such as designing the Dilkusha Palace for Nawab Saadat Ali Khan in 1800, and was the first of five generations of the family to be involved there (see J. Mitchener, The Ouseleys – A family involvement with India. Asian Affairs 40(1): 1-14, March 2009). Gore returned to England in 1805 and married Harriet Georgina Whitelocke, aged 16, on April 12th, 1806, their first child Mary Jane being born in March 1807. Gore was made a baronet in 1808. He was sent as Ambassador to Persia in July 1810, taking his young wife, their infant daughter, and his brother William with him as his Secretary. The main leg of the journey was a fascinating sea voyage on the *Lion*, a ship of 64 guns, routed via Madeira, Rio de Janeiro, Ceylon, Bombay and finally arriving at Abu-shahr in March 1811. They conducted trenches at Persepolis in 1811, the year his second daughter Eliza Shireen was born (but sadly died at 10 months old). Stone carvings dug from Persepolis were subsequently donated to the British Museum (where I noticed recently he is listed on a wall of major donors, at 1825), while his politically most significant activity was preparation and negotiation of the Treaty of Gulistan with Russia, concluded in 1813. Gore's first son, Wellesley Abbas, was born in August 1813. William returned that year to England, but Gore stayed on and in 1814 went overland through many perils to St. Petersburg before returning to England in July 1815. He settled down as a country gentleman and remained active in Persian scholarship, e.g. the Society for the Publication of Oriental Texts, of which he became President in 1842. Wellesley died in England at 10 years, and about a year later Frederick Arthur Gore Ouseley was born. Frederick was studying at Oxford when his father died in 1844.

Where, in all this, did Gore Ouseley achieve something of scientific interest to be cited subsequently by Charles Darwin? It involved a genetic experiment with a remarkable result, which occurred not very long after his return to England, and was reported by the Earl of Morton, FRS, to the Royal Society: A communication of a singular fact in Natural History, Phil. Trans. Roy. Soc. 111: 20-22, 1821. This was seized upon by Darwin as relating to the *reversal of characters to ancestral forms*, and mentioned by him in vol. 1 of The Origin of Species by Means of Natural Selection, or The Preservation of Favored Races in the Struggle for Life. Several versions have been published, and in the 1896 printing by D. Appleton and Company of New York (based on the 1859 edition published in London), in Chap. V, Laws of Variation, p.201, under the sub-heading (p.194) "*Distinct Species present analogous Variations, so that a Variety of one Species often assumes a Character proper to an allied Species, or Reverts to some of the Characters of an early Progenitor"*, Darwin writes: "In Lord Morton's famous hybrid, from a chestnut mare and male quagga, the hybrid, and even the pure offspring produced [later] from the same mare by a black Arabian sire, were much more plainly barred across the legs than is even the pure quagga." Darwin also cited this in "The Variation of Animals and Plants under Domestication", vol. 1, John Murray, London 1885. Gore Ouseley's discovery, recorded by Morton, was used by Darwin a few decades later. Link found!

The quagga was a kind of zebra, and Morton had been interested in domesticating it. The quagga had appeared largely immune to sleeping sickness, whereas Eurasian horses were susceptible to it. A hybrid that was sufficiently tame, and which preserved that immunity, would have helped Europeans to colonize the African continent. Now, of course, as I have seen in trips to Africa, the Toyota pick-up and the dirt-bike have

eliminated the desire for domesticated quaggas for that purpose, and the species is reported to have become extinct in the 1880s anyway.

Morton's communication to the Royal Society clearly interested the President, Dr. Wollaston, as he appended a personal note to Morton's communication as published, "By the kindness of Sir GORE OUSELEY, I had an opportunity of seeing the mare, the Arabian horse, the filly, and the colt, and of witnessing how correctly they agreed with the description given of them by Lord MORTON. "Having shortly afterwards described the circumstances to my friend Mr. GILES, I found that he had observed some facts of nearly equal interest, of which, at my request, he has since sent me the following account." There follows, on, pp. 23-24 of the same volume, Mr. Giles' account of a similar observation with a domesticated sow bred with a wild boar, and observation of the off-springs' coats, and of those a subsequent breeding of the same sow with a different male, the first boar having accidentally drowned meanwhile; but it was a matter of recollection, and the animals were no longer alive to be seen; both communications were read on November 23, 1820. Unlike William, Gore Ouseley was not known for publishing his studies, and even his writings about Persian poets appeared posthumously.

In the present times, the opportunity to examine the original data is becoming a strong issue for scientific journals, and this seems to have been a very early case of such an examination being made! Sir Gore Ouseley was already a Fellow of the Royal Society at the time of publication of Lord Morton's communication, having been elected in December 1817. Charles R. Darwin was elected in January 1839.

The quagga question has not exactly disappeared into the dust of the past. It is given a chapter by Jim Endersby (of the History Department, University of Sussex) in his "Guinea Pig's History of Biology: The Plants and Animals Who Taught us the Facts of Life", Heinemann, UK 2007, Harvard U Press US 2007.

FACULTY BULLETIN

INFORMATION FOR CONTRIBUTORS

GUIDELINES FOR SUBMITTING ARTICLES:

The next issue of the *Faculty Bulletin* will be published this fall.
Articles should be submitted by October 30, 2009.

Please submit text electronically in Word format to:

Cheryl_Moreau@Brown.edu

Articles should be approximately 1,000 words (two to three pages). If space permits, longer papers will be considered.

Articles and/or questions should be directed to:

Cheryl A. Moreau, Manager
Office of Faculty Governance
402 University Hall
Box 1830
Phone: (401) 863-9440