

MPA 883

Science and Justice



Course Instructor - Dr Colin Farrelly
(Mackintosh-Corry Hall, Room C400), **Office Hours:** TBA

Course Description

Advances in biological knowledge bring us closer to a world where we may have the ability to directly manipulate our genetic make-up. With this ability comes new questions concerning the demands of distributive justice. This course examines key developments in biology (especially human genetics), and demonstrates why and how theories of justice may require revision in light of these changes. Issues addressed eugenics, the therapy/enhancement distinction, gene therapy and genome editing, aging, enhancement in sport, future generations, and reproductive freedom. The course is designed to explore the different challenges society faces as a consequence of the genetic revolution and to help equip students with the critical and analytical skills needed to think rationally and cogently about the regulation of new biomedical technologies.

Format: The course consists of a dozen classes spread out over the months of April, May and June. Each class is 3 hours long and the sessions will consist of a lecture component from the instructor, as well as student presentations and class discussions and debates on the assigned readings.

Assessment: Students will be required to (1) attend and participate in class, (2) give a seminar *powerpoint* presentation, and (3) an in-class one-hour self-reflection test. These 3 assignments will be weighted as follows: strongest grade is worth 30%, second highest is worth 20% and lowest grade is worth only 10%. Students will also write a research paper (approximately 10 pages long- **worth 50%**) due at the end of term on any topic or issue covered in the course.

For each class there is a list of **required readings**. All students are expected to do these readings in advance of each class. All of the readings can be accessed via the University library (or directly from internet), so please make every effort to learn how to search for the articles on the library system. The course textbooks are:

(1) Allen Buchanan's *Beyond Humanity?* (Oxford University Press, 2011).

(2) Colin Farrelly *Genetic Ethics: An Introduction* (Polity Books, 2018)

both books can be accessed online through the University library, and

(3) The President's Council of Bioethics Report *Beyond Therapy* available for free here:

https://repository.library.georgetown.edu/bitstream/handle/10822/559341/beyond_therapy_final_webcorrected.pdf?sequence=1&isAllowed=y

SCHEDULE:

April 26 th	Introduction
April 27 th	Eugenics, Justice and Genetic Intervention
May 13 th	The Therapy/Enhancement Distinction
May 14 th	<i>Beyond Humanity?</i> (Part 1)
May 15 th	Aging and Life Extension
May 16 th	Aging and Life Extension (Part 2)
May 17 th	Epigenetics and <i>Beyond Humanity?</i> (Part 2)
June 3 rd	<i>Beyond Therapy Report</i> (Part 1)
June 4 th	<i>Beyond Therapy Report</i> (Part 2)
June 5 th	Reproductive Freedom
June 6 th	In-class test; Genetic Privacy and Behavioral Genetics
June 7 th	Course Review and Conclusion

Class #1 (April 26th) Introduction

- Francis Collins and Scott Gottlieb, "The Next Phase of Gene Therapy Oversight" *New England Journal of Medicine* 379(15) (2018): 1393-1395.
- Colin Farrelly, *Genetic Ethics: An Introduction*, Introduction and Chapter 2 The Genetic Revolution: A Snapshot

Class #2 (April 27th) Eugenics, Justice and Genetic Intervention

Required Readings:

- Daniel Wikler, "Can We Learn from Eugenics?" *Journal of Medical Ethics* 25 (1999), pp. 183-194.
- Colin Farrelly, *Genetic Ethics: An Introduction*, Chapter 1: Eugenics: Inherently Immoral?
- Solveig Reindal "Disability, gene therapy and eugenics - a challenge to John Harris" *Journal of Medical Ethics* 2000;26:89-94; **AND** John Harris, "Is there a coherent social conception of disability?" *Journal of Medical Ethics* 2000;26:95-100.

Class #3 (May 13th) Therapy/Enhancement Distinction

Class debate: how helpful is the therapy/enhancement distinction for public policy?

- David Resnick, "The Moral Significance of the Therapy-Enhancement Distinction in Human Genetics", *Cambridge Quarterly of Healthcare Ethics*, 9. 2000, pp. 365-77.
- Norman Daniels, "Normal Functioning and the Treatment-Enhancement Distinction" 2000 9(3): 309-322.
- Colin Farrelly, *Genetic Ethics: An Introduction*, Chapter 3: Disease

Class #4 (May 14th) Beyond Humanity? Part 1

- Chapter 1: The Landscape of the Enhancement Debate
- Chapter 2: Enhancement and Human Development
- Chapter 4: Human Nature and the Natural

Class #5 (May 15th) Aging and Life Extension

- Aubrey De Grey, "Life extension, Human Rights, and the Rational Refinement of Repugnance". *Journal of Medical Ethics* 2005;31:659-663.
- Nick Dragojlovic, "Canadians' support for radical life extension resulting from advances in regenerative medicine" *Journal of Aging Studies*, Volume 27, Issue 2, April 2013, pp. 151-158.
- Claudia Bozzaro, Joachim Boldt, and Mark Schweda, "Are Older People a Vulnerable Group? Philosophical and Bioethical Perspectives on Ageing and Vulnerability" *Bioethics* 2018 32(4): 233-239.

Class #6 (May 16th) Aging and Life Extension [Part 2] [no student presentations this class]

Class debate: should we aspire to slow the rate of human aging?

- Steven Albert, Ashley Im, Victoria Raveis, 2002. "Public Health and the Second 50 years of Life" *American Journal of Public Health* 92(8): 1214:1216.
- Olshansky, S.J., Perry, D., Miller, R., Butler, R. 2006. "In Pursuit of the Longevity Dividend" *The Scientist* 20: 28-36. [available online for free at: http://www.edmontonagingsymposium.com/files/eas/Longevity_Dividend.pdf]
- Dana P. Goldman et. al., "Substantial Health and Economic Returns from Delayed Aging May Warrant a New Focus for Medical Research" *HEALTH AFFAIRS* 32, NO. 10 (2013): 1698-1705

Class #7 (May 17th) Epigenetics and *Beyond Humanity?* Part 2

- Chapter 5: Conservatism and Enhancement
- Chapter 6: Unintended Bad Consequences
- Colin Farrelly, *Genetic Ethics: An Introduction*, Chapter 4: Epigenetics

Class #8 (June 3rd) *Beyond Therapy Report (Part 1)*

President's Council on Bioethics Report *Beyond Therapy: Biotechnology and the Pursuit of Happiness* available at:
<http://bioethics.georgetown.edu/pcbe/reports/beyondtherapy/index.html>

- Chapter 1: Biotechnology and the Pursuit of Happiness
- Chapter 2: Better Children

And • Dan Brock, "Shaping Future Children: Parental Rights and Societal Interests" *Journal of Political Philosophy* 13(4) (2005), pp. 377-98.

Class #9 (June 4th) *Beyond Therapy (Part 2)*

Chapter 3: Superior Performance
Chapter 5: Happy Souls

- Colin Farrelly, *Genetic Ethics: An Introduction*, Chapter 7: Happiness, Memory and Behaviour

Class #10 (June 5th) Reproductive Freedom

Class debate: should parents be permitted to utilize pre-implantation genetic diagnosis to screen embryos (prior to implantation) for sex for non-medical purposes, like family balancing?

- Farhat Moazam "Feminist Discourse on Sex Screening and Selective Abortion of Female Foetuses" *Bioethics*, 18(3), 2004, pp. 205-21.
- Edward Stein, "Choosing the Sexual Orientation of Children" *Bioethics*, 12(1), 1998, pp. 1-24.
- Colin Farrelly, *Genetic Ethics: An Introduction*, Chapter 5: Reproductive Freedom

Class #11 (June 6th) In-class test and Genetic Privacy and Behavioral Genetics

- Tuija Takala "The Right to Genetic Ignorance Confirmed" *Bioethics*, 13(4), 1999, pp. 288-293.
- David Wasserman, "Is There Value in Identifying Genetic Predispositions to Violence?" *Journal of Law, Medicine, and Ethics* (Vol. 32, Spring, 2004).
- John Davis, "Justice, Insurance and Biomarkers of Aging" *Experimental Gerontology* 2010 45(10): 814-18.

Class #12 (June 7th): Essay Advice and Conclusion

Essays: You can write an essay on any of the issues covered in the course. Below is the mark sheet I use when assessing your papers.

Mark Sheet for Essays

Student Name/Number:	Course:					
Essay title:						
Scale: 5 - excellent, 4 - good, 3 - satisfactory, 2 - poor, 1 - very poor						
*please note: the numbers above are merely guidelines and are not equivalent to numerical grades. Furthermore, some categories are weighted more heavily than others.						
	5	4	3	2	1	
Structure and organization						
Topic well defined						Topic poorly defined
Essay well structured						Essay badly structured
Quality of discussion and analysis						
Shows theoretical awareness						Shows no theoretical awareness
Conceptual clarity						Conceptual confusion
Logical and coherent						Illogical and incoherent
Analytical						Descriptive
Critical						Uncritical
Shows independent thought						Does not show independent thought
Literature review and sources						
Evidence of reading/research						No evidence of reading/research
Effective use of evidence/literature						Ineffective use of evidence/literature

Further Readings:**Useful books include:**

Nick Bostrom and Julian Savulescu (editors) *Human Enhancement* (Oxford University Press, 2010)

Nicholas Agar, *Liberal Eugenics: In Defense of Human Enhancement*, Malden: Blackwell (2004); and *Humanity's End: Why We Should Reject Radical Enhancement*, Cambridge, MA: MIT Press (2013).

Allen Buchanan, et. al. *From Change to Choice: Genetics and Justice*

John Harris and Justine Burley (eds), *A Companion to Genethics*

Justine Burley (ed), *The Genetic Revolution and Human Rights*

Frances Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution*, New York: Picador Books (2002).

Jurgen Habermas, *The Future of Human Nature*, Cambridge: Polity Press (2003).
John Harris, Clones, *Genes and Immortality*
John Harris and Soren Holm (eds) *The Future of Human Reproduction*
David Held, *Genethics*
Walter Glannon, *Genes and Future People*
Philip Kitcher, *The Lives to Come*
John Harris, *Enhancing Evolution*
Andy Miah, *Genetically Modified Athletes: Biomedical Ethics, Gene Doping and Sport*, New York: Routledge (2004).
David Magnus, Arthur Caplan, Glenn McGee (eds), *Who Owns Life?*
Persson, I. and Savulescu, J., 2012. *Unfit for the Future: The Need for Moral Enhancement*, Oxford: Oxford University Press.
Sandel, M., 2007. *The Price of Perfection: Ethics in the Age of Genetic Engineering*, Cambridge: Harvard University Press.

Articles:

(key journals include *Bioethics*, *Journal of Medical Ethics*, *American Journal of Bioethics*, *Kennedy Institute of Ethics Journal* and *Cambridge Quarterly of Healthcare Ethics*)

Allen Buchanan, "Equal Opportunity and Genetic Intervention" *Social Philosophy and Policy* Volume 12(2) (1995), pp 105-135.

David B. Resnik, "Genetic Engineering and Social Justice: A Rawlsian Approach" *Social Theory and Practice* 23 (1997), pp. 427-48.

Dov Fox, "Luck, Genes and Equality" *Journal of Medical Ethics*, 35(4) (2007): 712-26.

Eric Rakowski, "Who Should Pay for Bad Genes" *California Law Review* 90 (5) (2002): 1345- 1414.

F.L. Ledley "Distinguishing Genetics and Eugenics on the Basis of Fairness" *Journal of Medical Ethics*, 20(3) (1994): 157-64.

Fritz Allhoff, "Germ-Line Genetic Enhancement and Rawlsian Primary Goods" *Kennedy Institute of Ethics Journal* 15(1): 39-56.

Frances Kamm, "Is There a Problem with Enhancement?" *American Journal of Bioethics* 5(3): pp. 5-14 (and open peer commentaries).

Special Issue of *The Kennedy Institute of Ethics Journal* on "Genetic Enhancement", Vol. Vol. 15(1), 2005.

Martin Borrow and Sandy Thomas "Patents in a Genetic Age" *Nature*, 409, 2001, pp. 763 –

764.

Robert Williamson and Ainsley Newson, "Should We Undertake Genetic Research on Intelligence" *Bioethics*, 13(3), 1999, pp. 327-42.

Walter Glannon "Genes, Embryos and Future People" *Bioethics*, 12(3), 1999, pp. 187-211.

Philip Kitcher "Creating Perfect People" in *Companion to Genethics*, chapter 17.

Julian Savulescu "Is there a "right not to be born": Reproductive decision making, options and the right to information" (editorial) *Journal of Medical Ethics*, 28, 2002, pp. 65-67.

Edward Stein, "Choosing the Sexual Orientation of Children" *Bioethics*, 12(1), 1998, pp. 1-24.

John Robertson, "Preconception Gender Selection" *American Journal of Bioethics*, Vol. 1(1), pp. 2-9 (and open peer commentaries as well).

C.L. Ten "The Use of Reproductive Technologies in Selecting the Sexual Orientation, the Race, and the Sex of Children" *Bioethics*, 12(1), 1999, pp. 45-48

Tuha Raikka "Freedom and a Right (Not) to Know" *Bioethics* 12(1), pp. 49-63.

Michael Reiss "The Ethics of Genetic Research of Intelligence" *Bioethics* 14(1), pp. 1-15.

Stephen Robertson and Julian Savelescu "Is There a Case in Favour of Predictive Genetic Testing in Young Children" *Bioethics*, 2001, 15(1), pp. 26-49

Hudson J. "What kinds of people should we create?" *Journal of Applied Philosophy* 2000; 17(2):131-43.

Lori d'Agincourt-Canning "Experiences of Genetic Risk: Disclosure and the Gendering of Responsibility" *Bioethics*, 2001, 15(3), pp. 231-47.

Julian Savulescu "Procreative Beneficence: Why We Should Select the Best Children" *Bioethics* 2002, 15(5), pp. 413-26.

Inmaculada de Melo-Martín "On Cloning Human Beings" *Bioethics*, 2002, 16(3), pp. 246-265.

Walter Glannon "Identity, Prudential Concern, and Extended Lives" *Bioethics*, 2002, 16(3), pp. 266-83.

David McCarthy "Why Sex Selection Should be Legal" *Journal of Medical Ethics*, 27, 2001, pp. 302-07.

John Robertson "Extending PGD: Medical and NonMedical Uses" *Journal of Medical Ethics*, 29, 2003, pp. 213-16.

John Harris, "Sex Selection and Regulated Hatred" *Journal of Medical Ethics*, 31, 2005, pp. 291-94.

Matthew Liao, "The Ethics of Using Genetic Engineering for Sex Selection" *Journal of Medical Ethics*, 31, 2005; 31: 116 - 118.

Ludvig Beckman "Genetic Privacy from Locke's Point of View" *The Journal of Value Inquiry*, 38, 2004, pp. 241-251

John Harris "A Response to Walter Glannon" *Bioethics*, 2002, 16(3), pp. 284-91.

Walter Glannon "A Reply to Harris" *Bioethics*, 2002, 16(3), pp. 292-97.

Elizabeth F. Cooke "Germ-line Engineering, Freedom, and Future Generations" *Bioethics*, 2003, 17(1), p. 32-58.

Matti Häyry "Philosophical Arguments for and Against Human Reproductive Cloning" *Bioethics*, 2003, 17(5), pp. 447-60.

Michael Heller and Rebecca Eisenberg, "Can Patents Deter Innovation? The Anticommons in Biomedical Research", *Science*, vol. 280, 1 May, 1998, pp. 698- 701

Adam Moore, "Owning Genetic Information and Gene Enhancement Techniques: Why Privacy and Property Rights May Undermine the Social Control of the Human Genome", *Bioethics*, vol. 14, no. 2, (April 2000)

Françoise Baylis and Jason Scott Robert, "The Inevitability of Genetic Enhancement Technologies", *Bioethics*, 2004, 18(1), pp. 1-26.

Inmaculada de Melo-Martín "On Our Obligation to Select the Best Children: A Reply to Savulescu" *Bioethics*, 2004, 18(1), pp. 72-83.

Farhat Moazam "Feminist Discourse on Sex Screening and Selective Abortion of Female Foetuses" *Bioethics*, 2004, 18(3), p. 205-220.

Robert Elliot "Genetic Therapy, Person-regarding Reasons and the Determination of Identity" *Bioethics*, 1997, 11(2), pp. 151-60.

Ingmar Persson "Genetic Therapy, Person-regarding Reasons and the Determination of Identity- A Reply to Robert Elliot" *Bioethics*, 1997, 11(2), pp. 161-69.

Rebecca S. Eisenberg, "How Can You Patent Genes?" *American Journal of Bioethics*, Summer 2002.

David Resnick, "The Morality of Human Gene Patents" *Kennedy Institute Journal of Ethics*, Vol. 7(1), 1997, pp. 43-61.

Mary Briody Mahowald, "Self-Preservation: An Argument for Therapeutic Cloning, and a

Strategy for Fostering Respect for Moral Integrity” *American Journal of Bioethics*, vol. 4(2), 2004.

J.W. Gordon “Genetic Enhancement in Humans” *Science*, 1999, 283, p. 2023-24.

H. Hayry, “How to Assess the Consequences of Genetic Engineering” In *Ethics and Biotechnology*. Edited by A. Dyson and John Harris. Pp. 144-156

J. Harris “Intimations of Immortality” *Science*, 2000, 288, p. 59

Rosamond Rhodes , “Genetic Links, Family Ties, and Social Bonds: Rights and Responsibilities in the Face of Genetic Knowledge” *Journal of Medicine and Philosophy*, vol. 23 (1), 1998

Hudson J. “What kinds of people should we create?” *Journal of Applied Philosophy* 2000; 17(2):131-43.

John Harris “Scientific Research is a Moral Duty” *Journal of Medical Ethics* 31, 2005: 242-248.

Arthur Caplan “Death as an unnatural process” *European Molecular Biology Organization, EMBO Reports*, vol. 6, special issues, 2005, S72-S75.

Nick Bostrom, “The Fable of the Dragon-Tyrant” *Journal of Medical Ethics*, Vol. 31(5), 2005, pp. 273-277.

Nick Bostrom, "In Defence of Posthuman Dignity," *Bioethics*, Vol. 19, No. 3, 2005, pp. 202-214.

Nick Bostrom, “Human Genetic Enhancements: A Transhumanist Perspective” *Journal of Value Inquiry*, Vol. 37, No. 4, 2003, pp. 493-506.

Lachs J. “Grand dreams of perfect people” *Cambridge Quarterly of Healthcare Ethics* 2000; 9(3):323-9.

John Robertson “Extending Preimplantation Genetic Diagnosis: the Ethical Debate” *Human Reproduction* Vol. 18(3), 2003, pp. 465-71.

Lagay FL. “Science, rhetoric, and public discourse in genetic research” *Cambridge Quarterly of Healthcare Ethics* 1999; 8(2):226-37.

Mehlman MJ, Rabe KM. “Any DNA to declare? Regulating offshore access to genetic Enhancement” *American Journal of Law and Medicine* 2002; 28(2-3):179-213.

Newell C. “The social nature of disability, disease and genetics: a response to Gillam, Persson, Holtug, Draper and Chadwick”. *Journal of Medical Ethics* 1999; 25

(2):172-5.

Perils in free market genomics. *Nature* 1998; 392(6674):315.

Tuija Takala "The Right to Genetic Ignorance Confirmed" *Bioethics*, 13(4), 1999, pp. 288-293.

Richter G, Bacchetta MD. "Interventions in the human genome: some moral and ethical considerations". *Journal of Medicine and Philosophy* 1998; 23(3):303-17.

Sara Boering "Gene Therapies and the Pursuit of a Better Human" *Cambridge Quarterly of Healthcare Ethics* 9, 2000, pp. 330-341.

Michael Sandel, "The Case Against Perfection" (available online at http://www.catholiceducation.org/articles/medical_ethics/me0056.html)

Peter Wenz "Engineering Genetic Injustice" *Bioethics* 19(1), 2005, pp. 1-11.

Scully JL. "Drawing a line: situating moral boundaries in genetic medicine". *Bioethics* 2001; 15(3):189-204.

David McCarthy, "Why Sex Selection Should be Legal" *Journal of Medical Ethics* 27 (2001), pp. 302-307.

Tania Burchardt (2004) "Capabilities and disability: the capabilities framework and the social model of disability", *Disability & Society*, 19:7, 735-751,

Rajani Bhatia, "Constructing Gender from the Inside Out: Sex-Selection Practices in the United States" *Feminist Studies*, Vol. 36, No. 2, (2010), pp. 260-291

Steven Edwards, "Harris, Disability, and the Good Life" *Cambridge Quarterly of Healthcare Ethics* (2014), 23 , 48 - 52.

John Harris, "Is There a Coherent Social Conception of Disability?" *Journal of Medical Ethics*, Vol. 26, No. 2 (Apr., 2000), pp. 95-100

Mark G. Kuczewski (2001) Disability: An Agenda for Bioethics, *American Journal of Bioethics*, 1:3, 36-44

Michael Fuchs (2010) "Reshaping Human Intelligence: The Debate about Genetic Enhancement of Cognitive Functions", *Human Reproduction & Genetic Ethics*, 16:2, 165-181.

Iñigo de Miguel Beriain, "Should human germ line editing be allowed? Some suggestions on the basis of the existing regulatory framework". *Bioethics*. 2018;1-7.

Anita Silvers; Michael Ashley Stein, "An Equality Paradigm for Preventing Genetic Discrimination", 55 *Vand. L. Rev.* 1341 (2002).

Bonnie Steinbock, "Sex Selection: Not Obviously Wrong," *Hastings Center Report* 32, no. 1 (2002): 23-28.

Lorella Terzi, "The Social Model of Disability: A Philosophical Critique" *Journal of Applied Philosophy*, Vol. 21, No. 2, 2004.

Sarah S. Richardson, "The Trustworthiness Deficit in Postgenomic Research on Human Intelligence," *The Genetics of Intelligence: Ethics and the Conduct of Trustworthy Research*, special report, *Hastings Center Report* 45, no. 5 (2015): S15-S20.

Whole issue of *Bioethics*, vol. 16(6) 2002 on Stem Cell Research

Whole issue of *Bioethics* August 2004 on Pharmacogenomics

Colin Farrelly, "Global Aging, Well-Ordered Science and Prospecation" *Rejuvenation Research* October 2010.

----- "Equality and the Duty to Retard Human Aging" *Bioethics* October, 2010.

----- "Why Aging Research?" *Annals of the New York Academy of Sciences* 1197 (2010): 1-8.

----- "Framing the Inborn Aging Process and Longevity Science" *Biogerontology* 11(3) (2010): 377-85.

----- "Preimplantation Genetic Diagnosis, Reproductive Freedom, and Deliberative Democracy" *Journal of Medicine and Philosophy*, 34(2) (2009):135-154.

----- "Towards a More Inclusive Vision of the Medical Sciences" *QJM: An International Journal of Medicine*, 102 (2009): 579-582.

----- "Genetic Justice Must Track Genetic Complexity" *Cambridge Quarterly of Healthcare Ethics*, Vol. 17(1) (2008): 45-53.

----- "Aging Research, Priorities and Aggregation" *Public Health Ethics*, Vol. 1(3) (2008): 258-67.

----- "Has the Time Come to Take on Time Itself?" *British Medical Journal*, Vol. 337 (2008): 147-48.

----- "Gene Patents and Justice" *Journal of Value Inquiry*, Vol. 41 (2-4) (2007): 147-163.

----- "Sufficiency, Justice and the Pursuit of Health- Extension" *Rejuvenation Research* Vol. 10(4), (2007): 513-20.

----- "The Genetic Difference Principle" *American Journal of Bioethics*, Vol. 4(2) (2004): W21-28.

----- "Genes and Social Justice: A Rawlsian Reply to Moore" *Bioethics* 16(1) (2002): 72-83.

Useful Internet Sources:

[HFEA report on Sex Selection](#)

Human Genome Project Information: Ethical, Legal and Social Issues- http://www.ornl.gov/TechResources/Human_Genome/elsi/elsi.html

Universal Declaration on the Human Genome and Human Rights
<http://www.nus.edu.sg/irb/Articles/IBC-Universal%20Declaration%20on%20the%20Human%20Genome.pdf>

President's Council on Bioethics:

Report on Beyond Therapy:

<http://bioethics.georgetown.edu/pcbe/reports/beyondtherapy/index.html>

Report on Cloning: <http://bioethics.georgetown.edu/pcbe/reports/cloningreport/index.html>

Report on Stem Cell Research: <http://bioethics.georgetown.edu/pcbe/reports/stemcell/index.html>

Synthetic Biology: <http://www.bioethics.gov/documents/synthetic-biology/PCSBI-Synthetic-Biology-Report-12.16.10.pdf>

Nuffield Council on Bioethics:

<http://www.nuffieldbioethics.org/sites/default/files/Genetics%20and%20human%20behaviour.pdf>
[report on genetics and human behaviour]

<http://www.nuffieldbioethics.org/genetic-screening> [report on genetic screening]

<http://www.nuffieldbioethics.org/patenting-dna> [report on DNA patenting]

<http://www.nuffieldbioethics.org/stem-cells> [discussion paper on stem cell therapy]

Wellcome Trust: The Human Genome- <http://genome.wellcome.ac.uk/>

National Human Genome Research Institute: Genetic Discrimination or Employment- <http://www.genome.gov/11510227>

****[very helpful] A Multimedia Guide to Genetic Disorders is available on the web at:** <http://www.yourgenesyourhealth.org/>

Myriad Genetic Laboratories: <http://www.myriad.com/>

“Should we accept performance-enhancing drugs in competitive sports?”

Moderator: Bob Costas

Academic integrity comprises the five core fundamental values of honesty, trust, fairness, respect and responsibility (see www.academicintegrity.org). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the “freedom of inquiry and exchange of ideas” essential to the intellectual life of the University (see the Senate Report on Principles and Priorities). Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar: see Academic Regulation 1 (<http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations/regulation-1>) and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen’s. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

Students are advised that incomplete standing will be granted only with the permission of the chair of undergraduate or graduate studies (as appropriate) and only where there is a clear demonstration of need. Applications for “Incomplete” standing must be made in the first instance to the instructor on the form available in the General Office. The simple fact of non-submission of work does not constitute an application and will result in a grade of zero for that assignment.

Students who feel that there are reasons to have their grades reviewed should follow the steps set out in the Faculty of Arts and Science’s Regulation 11, “Review of Grades and Examinations” (<http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations/regulation-11>).

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GRADING SCHEME:

All components of this course will receive letter grades which, for purposes of calculating your course average, will be translated into numerical equivalents using the Faculty of Arts and Science approved scale:

Arts & Science Letter Grade Input Scheme

Assignment mark	Numerical value for calculation of final mark
A+	93
A	87
A-	82
B+	78
B	75
B-	72
C+	68
C	65
C-	62
D+	58
D	55
D-	52
F48 (F+)	48
F24 (F)	24
F0 (0)	0

Your course average will then be converted to a final letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below