

EXAMPLE

1

*Law and Media Technology:
How Law Shapes Our Use and Development of Mass Media*

Abstract

A Summer Faculty Research Grant would enable me to forego the supplemental income of summer teaching in order to expedite the completion of my current book project, under contract with Peter Lang for a final manuscript submission date of February 2011. This case/textbook, *Mass Media Law: The Printing Press to the Internet*, will in turn lay the foundation for my related monograph: *Law and Media Technology: How Law Shapes Our Use and Development of Mass Media*.

Specifically, the research and writing of two unique chapters for *Mass Media Law* will enable me to test my theses and foster *Law and Media Technology's* goal: to illuminate contemporary controversies over how best to regulate new media and their industries by exploring—in their social and historical contexts—the public policy values that have supported laws affecting the operation of the printing press, post office, telegraph, photography, radio, cinema, television, cable, satellite, computers and the Internet. The seminal chapters will be: (i) “Concepts, Theories and Legal Doctrines,” which will compare and contrast mass communication/media studies theories and concepts with media law doctrines and theories; and (ii) “History of Mass Media Technology, Law & Regulation 1789-2010: Promoting the Free Exchange of Ideas and Information in a Democratic Republic.” Building upon the blueprint of these chapters, I intend to submit *Law and Media Technology* to the same publisher, Peter Lang, by late 2013.

Background

As an associate professor of communications and media studies with a degree in law, my research interests include journalism studies, First Amendment doctrine and theory, democratic discourse theory, and the intersection of mass media law and mass media technologies. *Mass Media Law* and *Law and Media Technology* will draw upon both facets of my background to unite these interests and make a unique contribution at the intersection of mass media law and mass media technologies.

To this date, I have written encyclopedia articles dedicated solely to mass media law: “Freedom of the Press: The modern period, 1917-present,” Finkleman, P. (Ed.) *Encyclopedia of American Civil Liberties*. NY: Routledge. Taylor & Francis Group, 2006, and “The Legal system and the media.” In Donald H. Johnston (Ed.). *Encyclopedia of International Media and Communications*. San Diego, CA: Academic Press/Elsevier Science, 2003). Meanwhile, my first book, *Press Critics are the Fifth Estate: Media Watchdogs in America*, takes an interdisciplinary approach by applying Robert C. Post’s (Yale Law School) constitutional concept of public discourse to defend uncivil and ideologically driven press critics. It is in recognition of my scholarship in both arenas that Peter Lang awarded me the contract for *Mass Media Law*, the successful publication of which I hope to capitalize on to also bring *Law and Media Technology* to press and prominent use among academics, policy-makers and industry practitioners.

The potential stemming from the synergy of these two texts is substantial. First, no current text targeting undergraduate communication majors integrates the social history of mass media, law and policy, even though this integration is at the cutting edge of research in the field. MIT’s Ithiel de Sola Pool’s *Technologies of Freedom* (1983) is the seminal book on the subject. In recent years a small but growing number of scholars

have continued the analysis from a social-historical perspective largely because of how the emergence of digital technology has called into question the courts and policymakers' traditional approach to mass media. For example, Menahem Blondheim's "Rehearsal for Media Regulation: Congress Versus the Telegraph-News Monopoly, 1866-1900," *Federal Communications Law Journal*, 56, 299-327 (2004), "...reconstructs a prominent, generation-long debate over government regulation of the telegraph ('the Victorian Internet') and the newswire services (America's first national media enterprise) in the Gilded Age." Princeton sociologist Paul Starr's *The Creation of the Media: Political Origins of Modern Communications* (2004) documents how political and legal choices as much as technological invention led to the development of modern mass media.

Consequently, the textbook I propose would aid in advancing pedagogy in this field.

Second, however, is that—just as students of communications and media studies will need *Mass Media Law* to stay well informed about current research—my academic counterparts will also benefit from *Law and Media Technology*'s advance of that research. Despite Pool and Starr's respective scholarship, the nexus of law and technology in understanding the evolution of and prospects for media remains an arena populated by a handful of researchers. This arena of academic and professional interest can benefit from a text that has the broad policy-level embrace of *Technologies of Freedom* and *The Creation of the Media*, while possessing the fine detail of a technology-by-technology examination of the impact of case law, legislation and regulatory action.

Contribution

Mass Media Law will break with the traditional approach of writing solely for the aspiring political science and journalism scholar on this subject, an approach authors have adopted ever since Dwight L. Teeter, Jr. & Harold L. Nelson published *Law of Mass Communications* in 1969. Instead it will more appropriately address the needs of such

texts' most common audience—the mass communication and media studies major—by taking a media technology-centric approach to bridge the gap between legal doctrine and media/communication analysis. This innovative, integrated approach will allow a mass communication major to build upon his or her own discipline to understand the historic connections among U.S. case law, statutes and regulations, the dominant and emerging mass media technologies and their related business operations, and the social contexts in which those connections were created.

Although my publisher and peer reviewers prefer that I present this new material in two, broad-embracing chapters, the critical contribution of my monograph *Law and Media Technology* will be to provide the more sophisticated scholar with a first-ever comprehensive chronicle of the impact statutory, common and regulatory law in the US has had on the development of each mass media technology starting with the printing press, and how the legal and legislative systems have reacted to new media. As such, it will do for each mass media technology and related industry what Lee Grieveson's *Policing Cinema: Movies and Censorship in Early-Twentieth Century America* did for cinema. My monograph, however, will take on an historic scope that precedes the scope of Grieveson's work, brings the reader to the present, while examining copyright, privacy, common carrier, antitrust and First Amendment law, and FCC regulation.

Broadly speaking, there are two major schools of thought regarding regulation of mass media technologies. There are those who advocate as little government interference as possible because they argue that the marketplace and nature of the technology itself—particularly interactive digital technologies—protect and promote free expression values. The opposing camp, however, argues that neither technology or the economic marketplace guarantees that free expression interests—or for that matter, other civil liberties such as privacy—will be protected. Consequently, government intervention

through law, subsidies and regulation are necessary to promote the free flow of information and to protect other fundamental rights, they argue. The interpretive historical account compiled in *Law and Media Technology* will allow me to weigh in on this debate, judge the merits of the opposing camps and perhaps offer my own model for mass media law and policy. Of course, a fully informed historical perspective does not guarantee a wise vision of the future but as Tim Wu notes (“A Brief History of American Telecommunications Regulation”): “Ironically, today’s debates over network neutrality and discriminatory carriage echo the same concerns that first prompted calls to regulate telegraph companies in the 19th century.”

Conclusion

The publication of *Mass Media Law: The Printing Press to the Internet* would (i) place me in the company of media law scholars and textbook authors such as Teeter, Calvert Clay and Susan Dente and (ii) aid me in building the foundation for an arguably seminal work in the interdisciplinary field of law and mass media/communication studies—*Law and Media Technology: How Law Shapes Our Use and Development of Mass Media*. As I am not eligible for a faculty fellowship until fall 2011, a Summer FRG in 2010 will prove critical to meeting my publishing deadline. I am grateful for the Faculty Fellowship I received in 2007, during which I did most of the research and writing that resulted in my July 2008 book publication, *Press Critics are the Fifth Estate: Media Watchdogs in America*, which earned recognition as a finalist for the AEJMC’s 2009 Tankard Book Award. According to a review in *Choice*, “Hayes (Fordham Univ.) provides a sophisticated analysis of relatively recent criticism of the press. . . . Endnote documentation is extensive. Highly recommended.” I look forward to the opportunity to complete my current, even more ambitious endeavor with a summer dedicated solely to research and writing through the support of a Fordham Faculty Research Grant.

EXAMPLE

2

[REDACTED] [REDACTED]

Title: Phototoxicity of drugs and nanoparticles in the human eye

[REDACTED]
[REDACTED]
[REDACTED]

Abstract

If awarded, a Faculty Research Grant would enable me to capitalize on a peer-reviewed invitation to conduct research this summer in collaboration with my two post-doctoral fellows (Albert Wielgus, Ph.D. and Baozhong Zhao, Ph.D) at the National Institutes of Environmental Health Sciences (NIEHS), a North Carolina located unit of the National Institute of Health (NIH). Fordham's support is critical for five reasons:

- (i) I do not have laboratory space at Fordham, and this type of collaboration is essential if I am to access the multimillion dollar photophysical equipment and human ocular tissues my research requires;
- (ii) Due to the untimely death of the PI (Colin Chignell, July 2008) at the NIEHS' Photobiology laboratory, I have become the scientific head of this laboratory, requiring my presence as current titular PI for the successful completion of the projects that are the subject of this proposal;
- (iii) Due to Federal budget cuts, in 2010 the NIEHS will not be able to cover my costs of travel and stay at their facility as in past years, and I will also have to cover some of my cost of supplies;
- (iv) The NIEHS has, however, donated HPLC [High Pressure Liquid Chromatogram] equipment with fluorescence detectors (valued at \$20,000) to Fordham's Department of

Natural Sciences through my initiative, the cost for packing and shipping of which would also be covered under this grant;

(v) In addition to the two scholarly articles I intend to produce from this summer's research for submission [Toxicology and Applied Pharmacology, Photochemistry Phtobiology]the NIEHS also anticipates making external grants available in my area of "nanosafety" for 2011-12, for which my work at their facility this summer will place me in an advantageous position.

Background

Everyone over the age of 65 is susceptible to developing cataracts and macular degeneration. In the next 30 years over 24 % of the population of the United States will be over the age of 65 and are therefore at risk for these blinding disorders. Although sight may be restored by an operation to remove cataracts, there is currently no effective treatment for retinal or macular degeneration. My ongoing research is to identify environmental risk factors that lead to these age-related blinding diseases and examine ways to prevent such damage. In addition to environmental hazards, there are dyes, drugs, over the counter medications and nanoparticles that can dramatically enhance phototoxic reactions in the human eye leading to early development (i.e., at 40 years old) of cataracts and macular or retinal degeneration.

The NIEHS facility at which I have been conducting this research for the past 12 years is a multidisciplinary lab that allows me access to multimillion dollar laser and photochemical equipment. During the summer of 2008 and my Spring 2009 Faculty Fellowship I developed at NIEHS an *in vitro* system using human lens epithelial cells to define phototoxic properties of nanoparticles with potential to damage the human lens.

(Phototoxicity and cytotoxicity of fullerol in human lens epithelial cells. Roberts JE, Wielgus AR, Boyes WK, Andley U, Chignell CF. Toxicology and Applied Pharmacology 2008 Apr 1;228(1):49-58.

In previous years at NIEHS, I have proven that ocular exposure to UVA and UVB (lens) or Visible blue light (430 nm) (retina) alone or in the presence of drugs or herbs (St. John's Wort) increases the human risk for developing cataracts and retinal degeneraton

(Wielgus AR, Chignell CF, Miller DS, Van Houten B, Meyer J, Hu DN, Roberts JE. Phototoxicity in Human Retinal Epithelial Cells Promoted by Hypericin, a Component of St. John's Wort. Photochem Photobiol. (2007) 83(3):706-13)

Summer 2010 I will investigate how nanoparticles (fullerols), used for drug delivery to the eye, may cause very early retinal degeneration. I am also examining the potential for fluoroquinolone (i.e. cipro) antibiotics to cause early damage to the human lens. The final purpose of my research is to remove, modify or quench these toxic agents in order to prevent the formation of early or late onset cataracts and macular degeneration. These *in vitro* experiments are currently in progress and are expected to be completed by September 2010.

Contribution

Cataracts and age-related macular degeneration (AMD) are the most common causes of visual impairment in the elderly. Although there is a genetic component to these blinding disorders, clinical and epidemiology studies have confirmed that environmental hazards (sunlight, phototoxic drugs and herbal medications) are major risk factors in initiating cataracts and AMD. All of these environmental hazards induce the formation of free radicals and reactive oxygen species (ROS) in the eye. The aged eye has limited protection against

free radicals and ROS, thus environmental hazards can put older people at severe risk of serious ocular damage. I have modeled this synergistic effect between environmental hazards and age by studying the interaction of sunlight with endogenous photoactive substances (xanthurenic acid, lipofuscin, A2E) whose production increases dramatically with age.

I have previously defined the damage to human ocular tissues induced by the endogenous agents. I am now defining the ocular damage induced by exogenous agents using *in vitro* and photophysical techniques. The ultimate goal is to develop appropriate strategies to ameliorate or prevent age related, environmental, drug and nanoparticle induced cataracts and macular or retinal degeneration.

Specifically, before attempting to define the effect of photoprocesses on biological systems, it is essential to get precise information about wavelength, photochemical yields/reaction rates, and biological targets. Mechanisms may be further defined through examination of the effects on the target molecules in live cells. This knowledge will facilitate risk assessment in humans and promote development of more sensitive ways to measure and screen for damage in individuals and in populations. Furthermore, once the mechanisms of damage are known, phototoxic agents can be modified to inhibit detrimental processes or to improve the efficacy of beneficial reactions.

Consequently, my research involves a multidisciplinary approach:

1) *in vitro*:

i. Models for Cataract formation Human Lens Epithelial Cells:

An *in vitro* model system (using human lens epithelial cells from human eyes) has been set up to determine potential phototoxicity of fluoroquinolone antibiotics and demonstrate specific damage end points (oxidative DNA damage, lipid peroxidation, apoptosis/necrosis, membrane damage, mitochondrial damage).


ii. Models for Macular Degeneration Human Retinal Pigment Epithelial Cells:

An *in vitro* model system (using retinal pigment epithelial cells from human eyes) has been set up to determine the potential phototoxicity of nanoparticles used for drug delivery) and demonstrate specific damage end points (oxidative DNA damage, lipid peroxidation , apoptosis/necrosis, membrane damage, mitochondrial damage).

iii. Models for Prevention of Damage to Ocular Cells

The effect of non-toxic quenchers known to cross blood lenticular and retinal barrier in humans. (i.e. lutein, N-acetyl cysteine) will be studied for their potential to block photodamage end points from the above in vitro experiments. These quenchers of phototoxic damage have been shown to be available to the human eye with supplementation.

2) Chemical and Photophysical Techniques

Time resolved photophysical techniques will be used to define the precise free radicals and reactive oxygen species formed by fluoroquinolones and nanoparticles. This will define the mechanism of phototoxicity for each agent. Dynamic Light Scattering will also be used to further define the chemical and physical properties of nanoparticles.

Cost

As stipulated in the abstract at the outset of this proposal, the costs for which I am requesting funding are paramount to my being able to travel to, supply my effective use of, and retrieve from the NIEHS in North Carolina the laboratory equipment necessary to the proposed research, some of which will now reside in the Fordham's Department of Natural Sciences due to my long-term collaboration with this facility.

Conclusion

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Cataracts and age-related macular degeneration (AMD) are the most common causes of visual impairment in the elderly. In the next 30 years over 24 % of the population of the United States will be over the age of 65 and are therefore at risk for these blinding disorders. As stated at the outset of this proposal, not only will a Fordham Faculty Research Grant prove pivotal in supporting my longstanding line of research during a critical juncture in its funding, bring needed resources to the University, and provide a platform for future external support, it will prevent interruption of work that is already proving integral to our fight to preserve the sight of millions of Americans.

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