GOVERNING EMERGING TECHNOLOGIES: 
THE FIRST 30 YEARS AND THE NEXT

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The year 2015 is the 30th anniversary of the Center for Law, Science & Innovation (CLSI or the Center) at Arizona State University.1 With over 30 faculty members and 30 years of accomplishment, the Center is the oldest and largest law school center in the nation addressing the intersection of law and technology. From the outset, the Center, which publishes Jurimetrics in partnership with the ABA Section of Science & Technology Law, has been at the forefront in exploring the legal implications of emerging technologies.

Highlights of the first 30 years include sponsoring two national conferences in the mid-1980s anticipating the coming merger of computer and communications technologies. The Center convened a major conference in the early 1990s to develop the first legal research agenda for the Human Genome Project.2 It created the first law school program on personalized medicine in 1990. It taught the nation’s first regularly offered law school course on nanotechnology in 2007. Since 2012 it has offered one of the nation’s leading annual conferences on e-discovery. And in 2013, it launched the annual conference on Governance of Emerging Technologies (GET), which will be held for the fourth time in May 2016.

In these and other activities, the Center takes a proactive approach that anticipates important new technology advances and explores how the legal

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1. The Center’s name has evolved over the years and included for many years the Center for Law, Science & Technology and before that The Arizona Law & Technology Institute.
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system must adjust to keep pace with these rapidly emerging technologies. Today, the Center continues to actively address the legal response to a broad array of emerging technologies, including precision medicine, nanotechnology, biotechnology, synthetic biology, neuroscience, robotics, autonomous cars, e-discovery, surveillance technologies, big data, drones, sustainable technologies, digital medicine, antiaging technologies, national security technologies, and technologies affecting relationships.

As it kicks off its fourth decade, the Center is consolidating its work on emerging technologies into a new Governance of Emerging Technologies Program (GET Program), which will join the existing Public Health Law and Policy Program and Program on Law and Sustainability as its third core program. The goal of the GET Program will be to promote beneficial technologies that can make individuals and society happier, more fulfilled, sustainable, and secure. A key tenet of this effort will be that law must go beyond its historical predominant role in trying to restrict harmful technologies, to now assume a new priority of affirmatively promoting beneficial technologies.

This point was made eloquently by Daniel Esty of Yale Law School in his keynote presentation at the Center’s Program on Law and Sustainability first annual Sustainability Conference of American Legal Educators held on May 8, 2015. Esty argued that to successfully address large problems like climate change, the legal system must shift from focusing almost exclusively on imposing “red lights” for environmentally harmful technologies and activities to creating “green lights” for beneficial technologies that will be needed to conquer such problems. These technologies will not emerge and flourish spontaneously: they need active encouragement and nourishment by networks that include industry, government, nongovernmental organizations, and academicians working together, with these efforts mediated through law.

In this spirit of creating green lights for beneficial technologies, the GET Program will actively explore whether, and how, technology may be directed towards socially productive applications, and will critically evaluate and proactively develop effective technology governance strategies and methods. Law has always played an important role in technology development and governance, but its role up until now has largely been reactive, passive and piecemeal. Current laws, often based on now-obsolete assumptions, have also proven to be ill-suited in their application to twenty-first century scientific and technological progress. At this time in human history when technology has become all the more pervasive, powerful and disruptive, law must become more proactive, befitting and innovative in promoting beneficial technologies.

The opportunities and needs are vast. Reasonable liability rules can drive the adoption of more precise and effective drugs targeted at an individual’s molecular profile, whereas arbitrary or inconsistent medical malpractice ver-

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dicts will result in wasteful defensive medicine practices. \(^5\) Premature adoption of overly restrictive nanotechnology regulations would be as destructive as no regulation at all, but “soft law” measures can fill governance gaps in the interim until appropriate regulatory tools are available. \(^6\) Sensible intellectual property regimes can provide powerful incentives for invention, whereas excessive or inadequate intellectual property protection can suppress innovation. \(^7\) Carefully designed legal instruments are critical for reinforcing and strengthening market incentives for the development of cleaner technologies, but poorly designed or inflexible regulation can have unanticipated or even counterproductive negative consequences. \(^8\) The legal system itself has the opportunity to change for the better, such as by using new technologies to increase access to the legal system by the large number of citizens who currently lack the resources or knowledge to legally protect their own interests.

With so many technologies currently in development, the GET Program will focus on opportunities for beneficial technologies that

1. promote basic human needs and interests in better nutrition, health, security, relationships, prosperity, convenience and enjoyment;
2. result in a society that is both more prosperous and equal, in which individual accomplishment is recognized and rewarded, but also in which all people, not just the top 1%, benefit from the technology;
3. facilitate individual choice and freedom in technology use and lifestyle;
4. move us toward a more sustainable society that integrates environmental, economic and social well-being; and
5. promote constructive competition within and between nations while limiting destructive conflict (e.g., wars).

While the potential of technology to improve human well-being, especially if promoted and steered by a coherent and anticipatory legal system, is powerful and indisputable, we recognize that not all technologies are beneficial, and that technology alone cannot solve the major problems and challenges facing humankind. Accordingly, the GET Program will also be active in monitoring and contributing productively to the continuing discourse about the existing problems with and the potential risks of technology, so helping to

1. distinguish real problems and risks from unfounded allegations and fears, toward the end of fostering a realistic discussion about limits that prevent harm but do not undermine benefits;
2. develop evaluative methods to move the discourse from mostly subjective criteria that undermine meaningful decision making to objective,

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evidence-based criteria that can provide a foundation for productive analyses; and
3. investigate public perception of the risks and benefits of technology, both across the general population and within distinguishable subgroups, to identify the reasons for support for and opposition to existing and proposed technologies, toward the end of developing governance strategies and tactics that will be substantively effective and will be responsive to public concern.

To further these objectives, the GET Program will seek to refocus, energize, and innovate the practice of law through beneficial technologies that apply themes and activities to

1. anticipate future technologies and promote legal frameworks that will encourage the safe and beneficial development and use of those technologies;
2. identify and remove barriers to the development of beneficial technologies that result from outdated regulation, competitive and market barriers, and unwarranted public misperceptions;
3. ensure governance of new technologies is based on the best available scientific information and sound evidence;
4. build in new legal mechanisms to ensure that statutes and regulations that are made obsolete by rapidly emerging technologies are sunsetted and replaced with innovative new oversight approaches;
5. create models of innovation, collaboration and governance to push beneficial technologies forward (e.g., soft law tools, open-source models, and crowdsourcing solutions); and
6. study the history of how law has positively or negatively affected technology development and use in the past, and apply those lessons to current and future technologies (foresight through hindsight).

As we set forth on this new mission, the Center welcomes partners, collaborators, and assistance. If interested, please contact CLSI Outreach Coordinator Yvonne Stevens at ystevens@asu.edu.