

## DOV GREENBAUM, JD PhD

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Zvi Meitar Institute Website: <http://zmi.idc.ac.il>

### CURRENT POSITIONS

*Director*  
2014-Present

**Zvi Meitar Institute for Legal Implications of Emerging Technologies**  
Radzyner Law School, Interdisciplinary Center, Herzliya

*Research Affiliate*  
(on staff since 2009)

**Yale University**  
Department of Molecular Biophysics & Biochemistry

### ADMISSIONS

*Admitted to the Patent Bar*  
*Admitted to Law Practice*

**United States Patent and Trademark Office**

**California:**

United States District Court: Northern, Central & Southern districts

*Certified Information Privacy*  
*Professional, Europe (CIPP/E)*

**International Association of Privacy Professionals**

**GOOGLE SCHOLAR PROFILE** <http://www.bit.ly/12clQPK>

### EDUCATION

**UNIVERSITY OF CALIFORNIA, BOALT HALL SCHOOL OF LAW, BERKELEY, CA**

J.D. May 2007

Samuelson Law, Technology & Public Policy Clinic

Symposium Editor: BERKLEY TECH. L. J.

**YALE UNIVERSITY, YALE LAW SCHOOL, NEW HAVEN, CT**

*Non Matriculated Student, 2000-2004*

Executive Editor: YALE J. L. & TECH.

Editor: Yale J. HEALTH, POLICY, L. & ETHICS

**YALE UNIVERSITY, GRADUATE SCHOOL OF ARTS AND SCIENCES, NEW HAVEN, CT**

Ph.D. May 2004, Bioinformatics (Genetics Dept.)

*Thesis:* Comparing mRNA and protein abundance via genomic and proteomic characteristics.

**YALE UNIVERSITY, GRADUATE SCHOOL OF ARTS AND SCIENCES, NEW HAVEN, CT**

M.Phil., May 2002, Genetics

**YESHIVA UNIVERSITY, NEW YORK, NY**

B.A., Biology, Economics *Summa Cum Laude*, May 1998

### POST DOCTORAL RESEARCH

**STANFORD UNIVERSITY, STANFORD LAW SCHOOL, PALO ALTO, CA**

Non-Resident Fellow, Center for Law and the Biosciences

2007-2008

Postdoctoral Fellow, Center for Law and the Biosciences

2011-2013

**SWISS FEDERAL INSTITUTE OF TECHNOLOGY (ETH), ZURICH, SWITZERLAND**

Postdoctoral Fellow, Branco Weiss Society in Science Fellowship

2005-2009

### ACADEMIC HONORS AND AWARDS

Berkley Center for Law and Technology; Law & Technology Program Certificate Berkeley Law, University of California at Berkeley 2004; National Institutes of Health Predoctoral Training Grant: National Research Service 1998-2001; Molecular Cellular and Developmental Biology 1998-2000; Yeshiva University Dean's List 1995-98; National Dean's List 1995-1998; Belkin Scholarship For Academic Excellence 1995; Leo & Julia Forcheimer Scholarship 1995.

### CLASSES TAUGHT

Criminal Law and Genomics

International Intellectual Property

Law and Technology

Silicon Valley: IP & Entrepreneurship

Ethics, Law, and Science

Big Data and the Law

Criminal Law and Genomics

Zvi Meitar Workshop

Seminar on US Law

## WORK EXPERIENCE

<i>Yale University</i>	Associate Professor, adj. Molecular Biophysics and Biochemistry	2012-2018
<i>Reinhold Cohn</i>	<b>Intellectual Property Attorney.</b> <i>Draft and prosecute patent applications: Hi-tech and software innovations in multiple different jurisdictions. Freedom to operate analyses, IP Due Diligence, Client Pitches, Litigation Support and Legal Research.</i>	2013-2014
<i>Pearl Cohen</i>	<b>Intellectual Property Attorney.</b> <i>Drafted and prosecuted patent applications: Hi-tech, software, mechanical, biotechnology and medical devices in multiple jurisdictions. Freedom to operate analyses, Due Diligence, Litigation Support and Legal Research.</i>	2011-2013
<i>Lexis Nexis</i>	<b>Editor and Content Provider.</b> <i>Draft lengthy articles on recent case law in the field of Intellectual Property. Manage and edit thousands of short articles on varied legal topics across all jurisdictions for Lexis contractor.</i>	2012-2016
<i>Sanford T. Colb IP Law</i>	<b>Patent Attorney.</b> <i>Drafted patents in numerous fields, including medical devices for varied clients including academia. Freedom to Operate Analyses, IP Due Diligence and Opinion Work.</i>	2010- 2011
<i>McDermott Will, &amp; Emery, LLP</i>	<b>Associate.</b> <i>IP Litigation: Motion practice, drafted pleadings and conducted legal research. Freedom to Operate Analyses, IP Due Diligence, Patent Reexams, Document Review, and Amicus Briefs</i>	2008- 2010
<i>Gene Security Network (Natera)</i>	<b>Independent Contractor.</b> <i>Composed legal and bioethical statements for startup firm regarding non-invasive prenatal test powered by proprietary bioinformatics technology.</i>	2008
<i>Skadden, Arps, Meagher, Slate &amp; Flom, LLP</i>	<b>Summer Associate.</b> <i>Researched and drafted legal memorandum on issues associated with high-stakes litigation for technology clients</i>	2006
<i>Affymetrix, Inc.</i>	<b>Litigation Department Intern.</b> <i>Conducted Infringement Analysis and Litigation Support for software and hardware patents.</i>	2005

## PROFESSIONAL AFFILIATIONS

<i>Book Review Editor</i>	J. of Responsible Innovation	2015-Present
<i>Member</i>	International Association of Privacy Professionals	2013-Present
	Publications Advisory Board	2014-2016
<i>Opinion Paper Editor</i>	Recent Advances in DNA & Gene Sequence	2014-2016
<i>Specialty Chief Editor</i>	Frontiers in ELSI in Science and Genetics	2013-Present
	<i>in Frontiers in Bioengineering and Frontiers in Genetics</i>	
	Special Issue Editor: <u>ELSI Aspects of Geoengineering</u>	
	Special Issue Editor: <u>Human Enhancement</u>	
	Special Issue Editor: <u>International Approaches to Bleeding Edge</u>	
	Special Issue Editor : <u>Gain of Function Research of Concern</u>	
	<u>Reproductive Technologies</u>	
<i>Special Issue Editor</i>	Recent Advances in DNA & Gene Sequences:	2014-2016
	<u>Genomics and Criminal Law</u>	
	Recent Patents on DNA and Gene Sequences	2011-2012
	<u>Genomics &amp; Athletics</u>	
<i>Regional Editor</i>	Recent Patents on DNA and Gene Sequence J.	2011-Present
<i>Member</i>	American Bar Association; Section of Science & Technology Law	2010-Present
<i>Member (R8)</i>	IEEE, Institute of Electrical and Electronics Engineers	2007-Present
<i>Member</i>	Eliezer Society at Yale University	1998-Present

## PUBLICATION LIST

(~160 Publications, Current and Forthcoming; ~6010 Citations, ~2200 since 2013)

### ***PUBLICATIONS: SCIENCE, LAW & POLICY***

1. Tao Zhang, Daniel J. Sherwinter, & **Dov Greenbaum** *Call for Standardization in Patent Claim Drafting* (In Submission, 2018).
2. Naomi Chetrit, Mayrav Danor, Angelic Shavit, Boaz Yona & **Dov Greenbaum**, *Not Just for Illicit Trade in Contraband Anymore : Using Blockchain to solve a millennial-long problem with Bills of Lading*, 21 VIRGINIA J. L. & TECH. (Forthcoming 2018)
3. **Dov Greenbaum**, *Is Criminal Law both redundant and inconsistent: Crime and Consciousness in light of developments in Neuroscience* 9 AM. J. BIOETHICS NEUROSCIENCE 51 (2018).
4. **Dov Greenbaum**, *Hotline bling: Late night ethics calls as an alternative to Research Ethics Consultations* 17 AM. J. BIOETHICS 61 (2017).
5. **Dov Greenbaum** & Mark Gerstein, *mHealth and Clearinghouses*. SCIENCE (In submission 2017)
6. Sharon Nakar & **Dov Greenbaum**, *Now You See Me. Now You Still Do: Facial Recognition Technology and the Growing Lack of Privacy*, 23 B.U. J. SCI. & TECH. L., 88 (2017)
7. Amit Gelbart, Yana Sheinberg & **Dov Greenbaum**, *Digital Delivery of Physical Goods Shipping in the 3D Printing Era - Problems and Solutions*, 41 TULANE MARITIME L. J., 395 (2017).
8. Amit Bar Sela, Uri Gafni, Ariela Lazan & **Dov Greenbaum**, *Sports is Fleeting, But Genetics is Forever: Some Legal and Ethical Implications of Genetics in College Sports*, VIRGINIA SPORTS & ENT. L. J. (2017).
9. Sara Weinberger, Sharon Nakar, & **Dov Greenbaum**, *Preventing choosing...Poorly, A Novel Cause of Action to Discourage Detrimental Genetic Selection*, 43 AM. J. L. & MED. 107 (2017).
10. **Dov Greenbaum**, Joel Rozowsky, Victoria Stodden and Mark Gerstein, *Structuring supplemental materials in support of reproducibility*, 18 GENOME BIOLOGY 64 (2017).
11. **Dov Greenbaum**, *Making Law School a Better Place: Using HBO's Silicon Valley to Teach Intellectual Property Law and Entrepreneurship*, 57 IDEA: THE INTELLECTUAL PROPERTY L. R., 183 (2017).
12. Daniel Klein, Omri Koltin, Maya Peleg, Idan Portnoy & **Dov Greenbaum**, *Science and Law separated by impenetrable language barriers: overcoming impediments to much needed interactions*, 8 AM. J. BIOETHICS, NEUROSCIENCE 37 (2017).
13. Daniel Ben-Ari, Yael Frish, Adam Lazovski, Uri Eldan & **Dov Greenbaum**, *Danger Will Robinson? Artificial Intelligence in the Practice of Law: An Analysis and Proof of Concept Experiment*, 23(2) RICHMOND J. L. & TECH (2017).

14. Yael Frisch & **Dov Greenbaum**, *Is Social Media A Cesspool of Misinformation? Clearing a regulatory path for patient-friendly safe spaces online* 17 AM. J. BIOETHICS 19 (2017).
15. Daniel Cheung & **Dov Greenbaum**, *Virtual Memories: More Dangerous than the Real Thing*, 7 AM. J. BIOETHICS, NEUROSCIENCE 251 (2016).
16. Ariela Lazan & **Dov Greenbaum**, *Collegiate Sports, Revealing More than Just Character? College Athletics Raise Unique Bioethics Concerns in the Collection of Biometric Data*, 17 AM. J. BIOETHICS, 70 (2017).
17. Aviv Shemma, Roy Meirom & **Dov Greenbaum**, *The Impact of the Humanities in Science and Technology Research; A Multidisciplinary Approach to the Ethical, Social and Legal Impacts of Science and Innovation*, 7 AM. J. BIOETHICS, NEUROSCIENCE 106 (2016).
18. Sara Weinberger & **Dov Greenbaum**, *Are BMI Prosthetics Uncontrollable Frankensteinian Monsters?*, 3 BRAIN MACHINE INTERFACES 149 (2016).
19. Roy Meirom, Daniel Be-Ari, Angelic Shavit, Boaz Yona & **Dov Greenbaum**, *Go Big or Go Home: Big Science and ELSI Funding*, 7 AM. J. BIOETHICS, NEUROSCIENCE 32 (2016).
20. **Dov Greenbaum**, *Ethical, Legal and Social Concerns Relating to Exoskeletons*, 45 ACM SIGCAS COMPUTERS & SOCIETY 234 (2016).
21. **Dov Greenbaum**, *Directly Digitally Engaging Patients and Democratizing Health Care*, 32 SANTA CLARA SCI. & TECH. L. J. (2015)
22. Sharon Nakar, Sara Weinberger, & **Dov Greenbaum**, *Legal and Social Implications of Predictive Brain Machine Interfaces: Duty of Care, Negligence and Criminal Responsibility*, AM. J. BIOETHICS NEUROSCIENCE 6 (4), 40-42 (2015).
23. Danielle Hornstein, Sara Weinberger, Sharon Nakar & **Dov Greenbaum**, *More Nuanced Informed Consent is Not Necessarily Better Informed Consent*, 15 AM. J. BIOETHICS 51 (2015).
24. Sara Weinberger & **Dov Greenbaum**, *Genetic Technology to Prevent Disabilities: How Popular Culture Informs our Understanding of the use of Genetics to Define and Prevent Undesirable Traits*, 15 AM. J. BIOETHICS 32 (2015).
25. **Dov Greenbaum**, *Expanding ELSI to all areas of innovative science and technology*, 33 NATURE BIOTECH. 425 (2015).
26. Sharon Nakar & **Dov Greenbaum**, *Genomics and Criminal Law*, 8 RECENT ADVANCES DNA & GENE SEQUENCES 57 (2014).
27. **Dov Greenbaum**, Arif Harmanci, Mark Gerstein *Proposed social and technological solutions to issues of data privacy in personal genomics. in ETHICS IN SCIENCE, TECHNOLOGY AND ENGINEERING*, 2014 IEEE International Symposium (2014).
28. **Dov Greenbaum**, *If You Don't Know Where You are Going, You Might Wind Up Somewhere Else: Incidental Findings in Recreational Personal Genomics*, 14 AM. J. BIOETHICS 12 (2014).
29. **Dov Greenbaum** *Grand Challenge: ELSI in a Changing Global Environment*, FRONTIERS IN GENETICS (2013).

30. **Dov Greenbaum**, *If You Can't Walk the Walk, Do You Have to Talk the Talk: Ethical Considerations for the Emerging Field of Sports Genomics*, 13 AM. J. BIOETHICS 19 (2013).
31. **Dov Greenbaum**, *Genomic Data Disclosure: Time to reassess the realities*, 13 AM. J. BIOETHICS 47 (2013).
32. **Dov Greenbaum**, *Editorial, Special Issue on Genetics and Athletics*, 6 RECENT PATENTS DNA & GENE SEQUENCES (2012).
33. **Dov Greenbaum**, *Regulation and the Fate of Personalized Medicine*, 14 AM. MED. ASSOC. VIRTUAL MENTOR 645 (2012).
34. **Dov Greenbaum**, *Introducing Personal Genomics to College Athletes: Potentials and Pitfalls*, 12 AM. J. BIOETHICS 45 (2012).
35. **Dov Greenbaum**, *Patents and Drug Shortages: Will the New Congressional Efforts Save Us from Impending Drug Shortages?*, 12 AM. J. BIOETHICS 18 (2012).
36. **Dov Greenbaum**, Mark Gerstein, *The Role of Cloud Computing in Managing the Deluge of Potentially Private Genetic Data*, 11 AM. J. BIOETHICS 39 (2011).
37. **Dov Greenbaum**, *An analysis of Federal Circuit Discrimination: The evolution of the Written Description Requirement vis-à-vis DNA and biotechnological inventions--concerns for Synthetic Biology*, 5 RECENT PATENTS DNA & GENE SEQ. 153 (2011).
38. **Dov Greenbaum**, Andrea Sboner, Ximeng Jasmine Mu, Mark Gerstein, *Genomics & Privacy: Implications of the New Reality of Closed Data for the Field*, 7 PLOS COMPUTATIONAL BIOLOGY, e1002278. (2011).
39. **Dov Greenbaum**, *New Rules, Different Risk: The Changing Freedom to Operate Analysis for Biotechnology*, in PATENT LAW REVIEW (Karen B. Tripp, Ed.) (2011).
40. **Dov Greenbaum**, *Patentable Subject Matter: Morally Neutral and Context Free*: 5 RECENT PATENTS DNA & GENE SEQ. 72 (2011).
41. **Dov Greenbaum**, Mark Gerstein, *Social Implications of Research: Shoot first ask questions later*, 11 AM. J. BIOETHICS 31 (2011).
42. **Dov Greenbaum**, *New Rules, Different Risk: The Changing Freedom to Operate Analysis for Biotechnology*, 11 N.C.J.L. & TECH. 139 (2010).
43. **Dov Greenbaum**, *State Neutrality and Patentable Subject Matter*, 1 AM. J. BIOETHICS, NEUROSCIENCE 59 (2010).
44. **Dov Greenbaum** & Christopher Scott, *Hochschullehrerprivileg: A Modern Incarnation of the Professor's Privilege to Promote University to Industry Technology Transfer*, 15 SCIENCE, TECH. & SOCIETY 55 (2010).
45. **Dov Greenbaum** & Mark Gerstein, *Social Networking and Personal Genomics: Suggestions for Optimizing the Interaction*, 9 AM. J. BIOETHICS 15 (2009).
46. **Dov Greenbaum**, *In Re Seagate: Did it Really Fix the Waiver Issue? A Short Review and Analysis of Waiver Resulting from the Use Of a Counsel's Opinion Letter as a Defense to Willful Infringement*, in PATENT LAW REVIEW (Karen Tripp Ed.) (2009).

47. **Dov Greenbaum**, *Academia to Industry Technology Transfer: An Alternative to the Bayh-Dole System for Both Developed and Developing Nations*, 19 FORDHAM INTELLECTUAL PROPERTY, MEDIA & ENT. L. J. 313 (2009).
48. **Dov Greenbaum**, *Research Fraud: Methods For Dealing With An Issue That Negatively Impacts Society's View of Science*, 10 COLUMBIA SCI. & TECH. L. REV. 61 (2009).
49. **Dov Greenbaum**, *Is it really possible to do the Kessel Run in less than twelve parsecs and should it matter? Science in Film and its Policy Implications*, 11 VANDERBILT J. ENT.& TECH. 249 (2009).
50. **Dov Greenbaum**, *Determining Optimal Levels of Intellectual Property Protection in Developing Nations*, 97 CURRENT SCIENCE 1604 (2009).
51. **Dov Greenbaum** & Mark Gerstein, *Science and the Law: Grappling with the Gulf*, 323 SCIENCE 210 (2009).
52. **Dov Greenbaum**, *Pharmacogenomic Drug Development: How the FDA Can Overcome Early Missteps In Regulating Personalized Medicine*, 40 RUTGERS L. REV. 97 (2008).
53. **Dov Greenbaum**, Jiang Du, & Mark Gerstein, *Genomic Anonymity: Have We Already Lost It?* 8 AMERICAN J. OF BIOETHICS 71-4 (2008).
54. **Dov Greenbaum**, *In Re Seagate: Did it Really Fix the Waiver Issue? A Short Review and Analysis of Waiver Resulting from the Use Of a Counsel's Opinion Letter as a Defense to Willful Infringement*, 12 MARQ. INTELL. PROP. L. REV. 155 (2008).
55. **Dov Greenbaum**, *An Analysis of the Evolution of the Written Description Requirement vis-à-vis DNA and Biotechnological Inventions*, 1 RECENT PATENTS DNA & GENE SEQ. 138 (2007).
56. **Dov Greenbaum**, *Privacy Concerns in Personal Genomics\_STEP White Paper* (University of California at Berkeley), [http://step.berkeley.edu/White\\_Paper/greenbaum.pdf](http://step.berkeley.edu/White_Paper/greenbaum.pdf)
57. Jack Lerner, Hillary Freudenthal, & **Dov Greenbaum**, *Jamaica Patent and Designs Act: A Report Prepared by The Samuelson Law, Technology & Public Policy Clinic* (Unpublished & Confidential, June 2006).
58. Andrew Smith, **Dov Greenbaum**, Shawn Douglas, H. Morrow Long, & Mark Gerstein, *Computer and Network Security in Academia: an Assessment and Some Proposed Solutions*, 6 GENOME BIOLOGY 119 (2005).
59. **Dov Greenbaum**, Shawn Douglas, Andrew Smith, Joanna Lim, Michael Fischer, Martin Schultz, & Mark Gerstein, *The Challenge of Computer Security in Academia: A Potential Roadblock to Distributed Annotation of the Human Genome*, 22 NATURE BIOTECH. 771 (2004).
60. **Dov Greenbaum**, Joanna Lim, & Mark Gerstein, *An Analysis of the Present System of Scientific Publishing: What's Wrong and Where to Go from Here?* 28 INTERDIS. SCI. REV. 254 (2003).
61. **Dov Greenbaum** & Mark Gerstein, *A Universal Legal Framework As A Prerequisite For Database Interoperability*, 21 NATURE BIOTECH. 979 (2003).

62. **Dov Greenbaum**, *The Database Debate: In Support of An Inequitable Solution*, 13 ALB. L.J. SCI. & TECH. 431 (2003).
63. **Dov Greenbaum**, *Are We Legislating Away Our Scientific Future? The Database Debate*, 22 Duke L. & Tech. Rev. (2003).

#### **PUBLICATIONS: SCIENCE & POLICY BOOK REVIEWS**

1. **Dov Greenbaum** *A new film celebrates a mid-century illustrator who stoked imaginations with prescient comics* 359 SCIENCE 168 (2018).
2. **Dov Greenbaum** *Revisit a Cautionary Classic* 359 SCIENCE 168 (2018).
3. **Dov Greenbaum**, *Life and death: When the end arrives, should we upgrade or shut down?*, 335 SCIENCE 1029 (2017)
4. **Dov Greenbaum**, *Making Babies*, 352 SCIENCE 1254 (2016).
5. **Dov Greenbaum** & Mark Gerstein, *Illuminating the Genome's Dark Matter*, 163 CELL 1047 (2015).
6. **Dov Greenbaum** & Mark Gerstein, *The Computer Connection*, 347 SCIENCE 956 (2015).
7. **Dov Greenbaum**, *Cybercrime 2.0*, 348 SCIENCE 193(2015).
8. **Dov Greenbaum** & Mark Gerstein, *Who Owns Your DNA?*, 165 CELL 257 (2016).
9. **Dov Greenbaum**, Jiemeng Chen & Mark Gerstein, *Deep Inside Champions, Just Genes?*, 342 SCIENCE 560 (2013).
10. **Dov Greenbaum**, *The Picture of Health: Medical Ethics and the Movies*, 22 MEDICAL L. R. 644 (2014).
11. **Dov Greenbaum**, *The Importance of Authentic Science on Screen*, 344 SCIENCE 980 (2014).
12. **Dov Greenbaum**, *Dragnet Nation: A Quest for Privacy, Security, and Freedom in a World of Relentless Surveillance*, THE PRIVACY ADVISOR (2014).

#### **PUBLICATIONS: IP TECHNICAL UPDATES**

1. **Dov Greenbaum**, *Bitcoin a currency, commodity or asset? Who regulates? Gains from decreasing regulatory uncertainty* 2018 EMERGING ISSUES LEXIS NEXIS (In Submission, 2018).
2. **Dov Greenbaum**, *Will Government Efforts to Derail Patentable Subject Matter Status Quo Derail Government Efforts to Promote Personalized Medicine*, 2015 EMERGING ISSUES LEXIS NEXIS ( 2015)
3. **Dov Greenbaum**, *Cloud Computing Patent Law: Always and Never the Same*, 2014 EMERGING ISSUES LEXIS NEXIS 7269 (2014).
4. **Dov Greenbaum**, *Functional Claiming & Inconsistent Guidance from the Courts: Are My Claims Definite Enough?* 2014 EMERGING ISSUES LEXIS NEXIS 7206 (2014)
5. **Dov Greenbaum**, *Patent Law and Boilerplate, Cautionary Language, Caveats, Qualifications, Provisos, Criteria, Repudiations, Stipulations, Macros, Disclaimers, Rote*

*Text, Broadening Language, Formulaic Text, and Restatements of Aphorisms: Useless, Helpful or Harmful?* 2014 EMERGING ISSUES 7179, LEXIS NEXIS

6. **Dov Greenbaum**, *The Battle of the Bands: The Chiefs Sing about the Future of the Federal Circuit*, 2013 EMERGING ISSUES 7110, LEXIS NEXIS
7. **Dov Greenbaum**, *Software -- Still patentable subject matter: An analysis of the En Banc Federal Circuit Opinion in CLS Bank v. Alice Corp* 2013 EMERGING ISSUES 7058 LEXIS NEXIS (2013).
8. **Dov Greenbaum**, *Know the Court's Limits in Zealous Advocacy*, MCDERMOTT WILL & EMERY IP UPDATE (April 2009).
9. David Larson & **Dov Greenbaum**, *The Convergence of Intellectual Property and Renewable Energy*, MCDERMOTT WILL & EMERY INTERNATIONAL NEWS (2009).
10. Sheila Walcoff & **Dov Greenbaum**, *Whose Gene is it Anyway? Patenting Personalized Medicine*, MCDERMOTT WILL & EMERY INTERNATIONAL NEWS (2009).
11. **Dov Greenbaum** & Paul Radensky, *Personalized Medicine and the Changing Intellectual Property Landscape: Updating the Freedom To Operate Analysis*, AHLA LIFE SCIENCES NEWSLETTER (2009).
12. **Dov Greenbaum**, *Single Antibody Disclosed in Specification Not Sufficient to Describe Densely Populated Genus*, MCDERMOTT WILL & EMERY IP UPDATE (November 2008).

#### **PUBLICATIONS: SCIENCE, LAW AND POLICY BOOKS AND TEXTBOOKS**

1. **Dov Greenbaum (Ed.)** AUTONOMOUS VEHICLES AND SMART TRANSPORTATION, USING ISRAEL AS A PARADIGM
2. **Dov Greenbaum**, CRIMINAL LAW AND GENOMICS, Taylor & Francis Publishing under the Routledge imprint. (In Submission 2017).
3. **Dov Greenbaum**, ETHICAL, LEGAL AND SOCIAL CONCERNS OF PERSONALIZED MEDICINE, Elsevier, (In submission, 2018).

#### **PUBLICATIONS: LAW SCIENCE AND POLICY BOOK CHAPTERS, WORKSHOPS & SPECIAL ISSUES**

1. **Dov Greenbaum** *Avoiding Regulation in the Medical Internet of Things in BIG DATA, HEALTH LAW, AND BIOETHICS* Cambridge University Press (I. Glenn Cohen Ed.) (forthcoming, 2018).
2. **Dov Greenbaum & ... Data ethics** FRONTIERS IN GENETICS, SPECIALTY SECTION: ELSI IN SCIENCE AND GENETICS (forthcoming, 2018).
3. **Dov Greenbaum & Kenneth Burns (Eds.)**, *Gain of Function Research of Concern* FRONTIERS IN GENETICS, SPECIALTY SECTION: ELSI IN SCIENCE AND GENETICS (2017).
4. **Dov Greenbaum & Raquel Nieto (Eds.)**, *ELSI Aspects of Geoengineering* FRONTIERS IN GENETICS, SPECIALTY SECTION: ELSI IN SCIENCE AND GENETICS (2017).
5. **Dov Greenbaum & Laura Cabrera (Eds.)**, *International Aspects of Bleeding Edge Reproductive Technologies*, FRONTIERS IN GENETICS, SPECIALTY SECTION: ELSI IN SCIENCE AND GENETICS (2017).



6. **Dov Greenbaum (Ed.)**, *ELSI in Human Enhancement*, FRONTIERS IN GENETICS, SPECIALTY SECTION: ELSI IN SCIENCE AND GENETICS (forthcoming, 2017).
7. **Dov Greenbaum**, *Pledging in Biotech*, in "Patent Pledges - GLOBAL PERSPECTIVES ON PATENT LAW'S PRIVATE ORDERING FRONTIER. (Jorge Contreras & Meredith Jacob eds.) (2017)
8. **Dov Greenbaum**, *Legal Concerns in Emerging Science: Synthetic Biology and Intellectual Property*, in INTELLECTUAL PROPERTY LAW: INTERDISCIPLINARY Analysis (Miriam Bitton & Lior Zemer eds.) (2015).
9. **Dov Greenbaum (Ed.)**, *Criminal Law and Genomics*, RECENT ADVANCES IN DNA & GENE SEQ. (2014).
10. **Dov Greenbaum**, *Synthetic Biology: A Whole Bunch of Balancing Acts* WORKSHOP ON RESEARCH AGENDAS IN THE SOCIETAL ASPECTS OF SYNTHETIC BIOLOGY, (2014) <http://cns.asu.edu/synbio/papers>
11. **Dov Greenbaum (Ed)**, *Special Issue on Genetics and Athletics. 6 RECENT PATENTS ON DNA AND GENE SEQ.* (2012).
12. **Dov Greenbaum**, *National Technology Transfer Mechanisms: A Comparison in* THE ELGAR HANDBOOK ON LAW, INNOVATION AND GROWTH (Robert Litan ed.) (2011).
13. **Dov Greenbaum & Mark Gerstein**, *Semantic Web Standards: Legal and Social Issues and Implications*, in SEMANTIC WEB: REVOLUTIONIZING KNOWLEDGE DISCOVERY IN THE LIFE SCIENCES (Christopher J. O. Baker & Kei-Hoi Cheung, eds.) (2006).

## **PUBLICATIONS: LAW SCIENCE AND POLICY EDITORIALS**

1. **Dov Greenbaum** *Why We Should Care About Bitcoin and Blockchain Regulation* CALCALIST, December 15, 2017.
2. **Dov Greenbaum** *What Bitcoin Needs is A Few Good Regulations* WALL STREET JOURNAL, Dec 14, 2017
3. Roy Keidar & **Dov Greenbaum** *When the regulator believes in the autonomous vehicles* (Hebrew), THE MARKER, April 5, 2017
4. **Dov Greenbaum** *Of Lawyers and Robots* NY TIMES April 3, 2017
5. **Dov Greenbaum & Roy Keidar**, *Accelerating the Autonomous Vehicle Industry in Israel*, JERUSALEM POST, April 2, 2017
6. **Dov Greenbaum & Mark Gerstein** *Pooling data from wearables could boost health benefits* S.F. CHRON February 24, 2017.
7. **Dov Greenbaum** *Relations between science and law* JERUSALEM POST December 4, 2016.
8. **Dov Greenbaum & Mark Gerstein**, *A Cyberattack and Medical Devices*, NY TIMES, Nov. 2, 2016.
9. **Dov Greenbaum & Mark Gerstein**, *GMOs are not Frankenfoods*. THE SCIENTIST, Aug. 30, 2016.
10. **Dov Greenbaum & Mark Gerstein**, *Going beyond geek chic — CeBIT*, S.F. CHRON., March 10, 2016.

11. **Dov Greenbaum**, *Exoskeleton progress yields slippery slope* 350 SCIENCE 1176 (2015).
12. **Dov Greenbaum**, *Letter*, NY TIMES MAG., Nov. 25, 2015.
13. **Dov Greenbaum**, *Missing the Point in a Biological Controversy*, NY TIMES, Aug. 1, 2015.
14. **Dov Greenbaum & Mark Gerstein**. *Why can employers fingerprint, but not test workers' DNA?* S. F. CHRON., July 10, 2015
15. **Dov Greenbaum** and Mark Gerstein, *Too Big to Close down: Websites Need Regulation Like Utilities*. S. F. CHRON., April 24, 2015.
16. **Dov Greenbaum** and Mark Gerstein, *An Emerging Field*, AMERICAN SCIENTIST 103(3) May 2015.
17. **Dov Greenbaum**, *Research Ethics*, SCI. AM. April 1, 2015.
18. **Dov Greenbaum**, *Who's that inside that Exoskeleton?* S. F. CHRON., A10 Jan. 19, 2015.
19. **Dov Greenbaum**, *Interstellar and Accurate Science in Film*, S. F. CHRON., Nov. 8, 2014.
20. **Dov Greenbaum & Mark Gerstein**, *In Defense of DNA Testing*, NY TIMES Jan. 6, 2014.
21. **Dov Greenbaum**, *A Loss of Privacy: The Fault Lies with Us*, NY TIMES, Oct. 16, 2013.
22. Mark Gerstein & **Dov Greenbaum**, *Proceed with Caution* 27 THE SCIENTIST (2013).
23. **Dov Greenbaum & Mark Gerstein**, *Your DNA is Vulnerable to Snooping Too*, USA TODAY, June 29, 2013.
24. **Dov Greenbaum & Mark Gerstein**, *The Age of Genetically Optimized Sports*, W.S.J., July 23 2012.
25. **Dov Greenbaum & Mark Gerstein**, *Support for Peer Review*, NY TIMES, July 23, 2012.
26. **Dov Greenbaum & Mark Gerstein**, *Sharing Too Much Online*, NY TIMES Oct. 6, 2011.
27. **Dov Greenbaum & Mark Gerstein**, *The Benefits of Snooping Letter to Editor: Privacy & Data Mining* MIT TECH. REV. July/August (2011).
28. **Dov Greenbaum & Mark Gerstein**, *Concern for Privacy*, NY TIMES, October 16, 2010.
29. **Dov Greenbaum & Mark Gerstein**, *Thrills and Traps, Lurking on the Web*, NY TIMES, May 11, 2010.
30. **Dov Greenbaum & Mark Gerstein**, *Exploring Genetics of Professional Athletes*, S. F. CHRON. May 2. 2010.
31. **Dov Greenbaum & Mark Gerstein**, *Testing isn't Everything*, NY TIMES, April 17, 2010.
32. **Dov Greenbaum & Mark Gerstein**, *Regulating the Genome*, FORBES April 16, 2010.
33. **Dov Greenbaum**, *Personalized Medicine and the Patent System*, THE BOSTON GLOBE Jan. 30, 2010.
34. **Dov Greenbaum**, *Should We Be Able to Patent Genes?* LA TIMES, Jan. 17, 2010.
35. **Dov Greenbaum & Mark Gerstein**, *Can't Run from DNA*, NEW SCIENTIST, Sept. 23, 2009.
36. **Dov Greenbaum & Mark Gerstein**, *Personal Genomics Requires Redefining Privacy -- The Human Blueprint: Dangerous Secrets*, S. F. CHRON. Nov. 2, 2008.
37. **Dov Greenbaum & Mark Gerstein**, *Danger: Sharing Gene Data*, HARTFORD COURANT, July 10, 2008.
38. **Dov Greenbaum**, Andrew Smith, & Mark Gerstein, *Impediments to Database Interoperation: Legal Issues and Security Concerns*, 33 NUCLEIC ACIDS RESEARCH D3 (2005).

**PUBLICATIONS: BIOINFORMATICS AND GENOMICS**

1. Andrea Sboner, Ximeng Mu, **Dov Greenbaum**, Mark Gerstein, *The Real Cost of Sequencing*, 12 GENOME BIOLOGY 125 (2011).
2. Mark Gerstein, **Dov Greenbaum**, Kei-Hoi Cheung, Perry Miller, *An Interdepartmental Ph.D. Program in Computational Biology and Bioinformatics: The Yale Perspective*, J. BIOMEDICAL. INFORMATICS (2006).
3. Haiyuan Yu, **Dov Greenbaum**, Xiaowei Zhu, & Mark Gerstein, *Analysis of Essentiality Within Protein Networks*, 20 TRENDS IN GENETICS 227 (2004).
4. Aled Edwards, Bart Kus, Ronald Jansen, **Dov Greenbaum**, Jack Greenblatt, & Mark Gerstein, *Bridging Structural Biology and Genomics: Assessing Protein Interaction Data with Known Complexes*, Drug discovery today 9 (2 Suppl), S32-40 (2004)
5. Haiyuan Yu, Xiaowei Zhu, **Dov Greenbaum**, John Karro, & Mark Gerstein, *Topnet: A Tool For Comparing Biological Sub-Networks, Correlating Protein Properties with Topological Statistics*, 32 NUCLEIC ACIDS RESEARCH 328 (2004).
6. Ronald Jansen, Haiyuan Yu, **Dov Greenbaum**, Yuval Kluger, Nevan Krogan, Sambath Chung, Andrew Emili, Michael Snyder, Jack Greenblatt, & Mark Gerstein, *A Bayesian Networks Approach For Predicting Protein-Protein Interactions From Genomic Data*, 302 SCIENCE 449 (2003).
7. **Dov Greenbaum**, Christopher Colangelo, Kenneth Williams, & Mark Gerstein, *Comparing Protein Abundance and mRNA Expression Levels on a Genomic Scale*, 4 GENOME BIOLOGY 117 (2003).
8. **Dov Greenbaum**, Ronald Jansen, & Mark Gerstein, *Analysis of mRNA Expression and Protein Abundance Data: An Approach for the Comparison of the Enrichment of Features in the Cellular Population of Proteins and Transcripts*, 18 BIOINFORMATICS 585 (2002).
9. Aled Edwards, Bart Kus, Ronald Jansen, **Dov Greenbaum**, Jack Greenblatt, & Mark Gerstein, *Bridging Structural Biology and Genomics: Assessing Protein Interaction Data with Known Complexes*, 18 TRENDS IN GENETICS 529 (2002).
10. Ronald Jansen, **Dov Greenbaum\***, & Mark Gerstein, *Relating Whole-Genome Expression Data with Protein-Protein Interactions*, 12 GENOME RESEARCH 37 (2002) (\*joint first authorship).
11. Zheng Lian, Yuval Kluger, **Dov Greenbaum**, David Tuck, Mark Gerstein, Nancy Berliner, Sherman Weissman, & Peter Newburger, *Genomic and Proteomic Analysis of the Myeloid Differentiation Program: Global Analysis of Gene Expression During Induced Differentiation In the MPRO Cell Line*, 100 BLOOD 3209 (2002).
12. Hedi Hegyi, Jimmy Lin, **Dov Greenbaum**, & Mark Gerstein, *Structural Genomics Analysis: Characteristics of Atypical, Common, and Horizontally Transferred Folds*, 47 PROTEINS 126 (2002).
13. Rajdeep Das, Jochen Junker, **Dov Greenbaum**, & Mark Gerstein, *Global Perspectives on Proteins: Comparing Genomes in Terms of Folds, Pathways and Beyond*, 1 PHARMACOGENOMICS 115 (2001).
14. Jimmy Lin, Jiang Qian, **Dov Greenbaum**, Paul Bertone, Rajdeep Das, Nathaniel Echols, A. Senes, Brad Stenger, Mark Gerstein, *Genecensus: Genome Comparisons In Terms of Metabolic Pathway Activity and Protein Family Sharing*, 30 NUCLEIC ACIDS RESEARCH 4574 (2002).

***PUBLICATIONS: BIOINFORMATICS AND GENOMICS REVIEWS***

15. **Dov Greenbaum**, *Genome Evolution*, in CONCISE ENCYCLOPEDIA OF BIOINFORMATICS AND COMPUTATIONAL BIOLOGY (Hancock & Zvelebil eds.) (2014).
16. **Dov Greenbaum**, *Comparative Genomics*, in CONCISE ENCYCLOPEDIA OF BIOINFORMATICS AND COMPUTATIONAL BIOLOGY (Hancock & Zvelebil eds.) (2014).
17. Yu Xia, Haiyuan Yu, Ronald Jansen, Michael Seringhaus, Sarah Baxter, **Dov Greenbaum**, H. Zhao, & Mark Gerstein, *Analyzing Cellular Biochemistry in Terms of Molecular Networks*, 73 ANN. REV. OF BIOCHEMISTRY 1051 (2004).
18. **Dov Greenbaum**, *Comparative Genomics*, in DICTIONARY OF BIOINFORMATICS AND COMPUTATIONAL BIOLOGY (Hancock & Zvelebil eds.) Wiley (2004).
19. **Dov Greenbaum**, *Genome Evolution*, in DICTIONARY OF BIOINFORMATICS AND COMPUTATIONAL BIOLOGY (Hancock & Zvelebil eds.) Wiley (2004).
20. **Dov Greenbaum**, Nicholas Luscombe, Ronald Jansen, Jiang Qian, & Mark Gerstein, *Interrelating Different Types of Genomic Data, from Proteome to Secretome: 'Oming In On Function*, 11 GENOME RESEARCH 1463 (2001).
21. Nicholas Luscombe, **Dov Greenbaum**, & Mark Gerstein, *What Is Bioinformatics? A Proposed Definition and Overview of the Field*, INTL. MEDICAL INFORMATICS ASSOCIATION YEARBOOK, 2001 83 (2001).
22. Nicholas Luscombe, **Dov Greenbaum**, & Mark Gerstein, *What Is Bioinformatics? A Proposed Definition and Overview of the Field*, 40 METHODS OF INFORMATION IN MEDICINE 346 (2001).

## **CONFERENCE PRESENTATIONS (PAPERS, POSTERS)**

***Do Advancements in BMIs Threaten Our Conception of Free Will: BMI, Torts and Criminal Law.*** BrainTech March 2017, Tel Aviv Israel

***Novel Cause Of Action To Discourage detrimental Genetic Selection*** Between Policy and Practice: Interdisciplinary Perspectives on Assisted Reproductive Technologies and Equitable Access to Health Care. Brocher Foundation, Geneva, Switzerland July 6 - 7, 2015

## **INVITED TALKS\***

*\*post 2007*

1. ***AI - IP & Commercialization Issues - Policy Considerations*** Bracing for Impact: The Artificial Intelligence Challenge, Osgoode Hall York University, Canada Feb 2, 2018
2. ***Legal and Ethical considerations with the advancement of AI and Machine Learning. What can we learn on the 200th Anniversary of Frankenstein?*** Singapore Management University, January 25, 2018
3. ***Bitcoin a currency, commodity or asset? Who regulates? Gains from decreasing regulatory uncertainty*** Money Models and Digital Innovation, Global Interdependence Center, Rady School of Management, University of California, San Diego January 12, 2018
4. ***Artificial Intelligence and its Legal Ramifications*** Law in the Digital World, Institute for Continuing Education for Advocates and Legal Consultants. Tel Aviv, October 31, 2017
5. ***Case Studies on Law and Big Data*** Big Data and Artificial Intelligence, Arison School of Business, IDC Herzliya October 29, 2017
6. ***Future Law as Represented in Movies: How Close are we?*** IDC "ליל המדענים" September 19, 2017
7. ***The Ethical, Legal and Social Implications of Big Data and...*** Virtual Institute for Responsible Innovation (VIRI) Tempe, AZ May 16 2017
8. ***Collecting Big Data via the Internet of Things, overcoming regulatory and other limitations.*** Fifth Annual Conference on Governance of Emerging Technologies: Law, Policy & Ethics, Phoenix, AZ May 17-19, 2017
9. ***Cryptocurrencies and the Law,*** Technion, Israel January 2017.
10. ***What can Frankenstein teach us about how to legally and ethically conduct climate and geo-engineering,*** IDC, December 21, 2016
11. ***When Disabilities are Desired Abilities*** Oh Man Oh Machine, Tel Aviv University, December 20, 2016
12. ***Legal And Ethical Implications In Genomics And Mental Health*** XXIV World Congress of Psychiatric Genetics, Jerusalem, November 1, 2016
13. ***A Novel Cause of Action to Discourage Detrimental Genetic Selection*** Fourth Annual Conference on Governance of Emerging Technologies: Law, Policy & Ethics, Tempe, AZ May 24-26, 2016
14. ***Avoiding Regulation in the Medical Internet of Things*** The Petrie-Flom Center for Health Law Policy, Biotechnology, and Bioethics at Harvard Law School 2016 Annual Conference: Big Data, Health Law, and Bioethics, May 6, 2016
15. ***Can criminal law catch up with robotics: brain machine interfaces and the subconscious,*** The 5<sup>th</sup> Israeli Conference on Robotics, Herzliya, Israel, April 13-14, 2016

16. ***Ethical and Legal Implications of Emerging Technologies*** Molecular Biophysics and Biochemistry Seminar Yale University, February 10, 2016
17. ***Legal and other Issues in Big Data*** Molecular Biophysics and Biochemistry Seminar Yale University, February 8, 2016
18. ***Collecting Big Data via the Internet of Things, Overcoming Regulatory and Other Limitations*** Global Summit on Regulatory Science 2015, Regulatory Bioinformatics, EFSA, European Food Safety Authority, Parma Italy, October 12-13 2015
19. ***Learning from Trolls: Patent Sharing in Biotechnology*** Patent Pledges Symposium 2015, Presented by AU Washington College of Law and the University of Utah – S.J. Quinney College of Law, Washington DC June 12, 2015
20. ***Ethical legal and Social Implications of 3D printing*** כנס התלת מימד של אנשים ומחשבים, November 29, 2015
21. ***Ethical, legal and social implications of new and emerging technologies: Exoskeletons*** UNESCO Chair in Bioethics 10<sup>th</sup> World Conference on Bioethics, Medical Ethics and Health Law Jerusalem, January 7, 2015
22. ***Disruptive Technologies and IP: Is 3D printing the Next Napster; What can patent law learn from copyright's recent experiences*** The Measure of Intellectual Property, New Principles, Future Dilemmas, IDC March 10-11 2014
23. ***Molecular Biology and the Law, Seminar, Information Society project, Yale Law School, November 5, 2012***
24. ***Hochschullehrerprivileg: A Modern Incarnation of the Professor's Privilege to Promote University to Industry Technology Transfer*** Eighth Annual Intellectual Property Scholars Conference, Stanford Law School, August 7-8, 2008

***CONFERENCES DEVELOPED, ORGANIZED, PRODUCED***

1. BRACING FOR IMPACT: THE ARTIFICIAL INTELLIGENCE CHALLENGE, OSGOODE HALL YORK UNIVERSITY, CANADA FEB 2, 2018
2. ZVI MEITAR INSTITUTE INAUGURAL ALUMNI EVENT, WeWork Herzliya, December 27, 2017
3. ALGORITHMS IN SOCIETY AND THE LAW, SECOND ANNUAL ATARA KAUFMAN CONFERENCE ON LAW AND TECHNOLOGY, IDC Herzliya December 18,19 2017,
4. BITCOIN AND BLOCKCHAIN , SOMETHING NEW IN THE FINANCIAL WORLD, IDC Herzliya, WORLD November 29, 2017
5. ROUNDTABLE: AI AND ROBOTICS-FUTURE OF WORK 2050, IDC Herzliya, September 28, 2017
6. ROUNDTABLE: AI AND PATENTS , IDC Herzliya, April 27, 2017
7. ROBOTICS, , IDC Herzliya, April 5, 2017
8. SMART MOBILITY SOLUTIONS, IDC Herzliya, March 29, 2017
9. THE ATARA KAUFMAN INAUGURAL CONFERENCE IN LAW, SCIENCE & TECHNOLOGY, NEUROSCIENCE AND THE LAW AND GENETICS AND THE LAW, IDC Herzliya, December 5, 2016
10. AUGMENTED AND VIRTUAL REALITY, IDC Herzliya, November 30, 2016
11. ARTIFICIAL INTELLIGENCE, IDC Herzliya, December 2, 2015.
12. ROUNDTABLE: AI AND ROBOTICS-FUTURE OF WORK 2050, IDC Herzliya, 2016
13. 200 YEARS FROM THE YEAR WITHOUT A SUMMER, FRANKENSTEIN AND CLIMATE CHANGE, IDC Herzliya, DECEMBER 21, 2016
14. FINTECH CONFERENCE, Columbia University, September 16, 2016
15. THE INTERNET OF THINGS, IDC Herzliya, March 26, 2016
16. AUTONOMOUS VEHICLES AND SMART TRANSPORTATION, IDC Herzliya, June 20, 2015
17. EXOSKELETONS, IDC Herzliya, March 18, 2015