

JOURNAL ON TELECOMMUNICATIONS & HIGH TECHNOLOGY LAW
is published semi-annually by the
Journal on Telecommunications & High Technology Law,
Campus Box 401, Boulder, CO 80309-0401

ISSN: 1543-8899

Copyright © 2004 by the
Journal on Telecommunications & High Technology Law
an association of students sponsored by the
University of Colorado School of Law and the
Silicon Flatirons Telecommunications Program.

POSTMASTER: Please send address changes to JTHTL,
Campus Box 401, Boulder, CO 80309-0401

Subscriptions

Volume subscriptions are available for \$ 45.00. City of Boulder subscribers please add \$3.45 sales tax. Boulder County subscribers outside the City of Boulder please add \$1.91 sales tax. Metro Denver subscribers outside of Boulder County please add \$1.67 sales tax. Colorado subscribers outside of Metro Denver please add \$1.31 sales tax.

Inquiries concerning ongoing subscriptions or obtaining an individual issue should be directed to the attention of JTHTL Managing Editor at JTHTL@colorado.edu or by writing JTHTL Managing Editor, Campus Box 401, Boulder, CO 80309-0401.

Back issues in complete sets, volumes, or single issues may be obtained from: William S. Hein & Co., Inc., 1285 Main Street, Buffalo, NY 14209.

Manuscripts

JTHTL invites the submission of unsolicited manuscripts. Please send softcopy manuscripts to the attention of JTHTL Articles Editors at JTHTL@colorado.edu in Word or PDF formats or through ExpressO at <http://law.bepress.com/expresso>. Hardcopy submissions may be sent to JTHTL Articles Editors, Campus Box 401, Boulder, CO 80309-0401. Unfortunately, JTHTL cannot return manuscripts. JTHTL uses THE BLUEBOOK: A UNIFORM SYSTEM OF CITATION (17th ed. 2000) for citation format and THE CHICAGO MANUAL OF STYLE (15th ed. 2003) for a style guide.

Cite as: 3 J. ON TELECOMM. & HIGH TECH. L. __ (2004).

J. ON TELECOMM. & HIGH TECH. L.

**JOURNAL ON
TELECOMMUNICATIONS & HIGH
TECHNOLOGY LAW**

Volume 3

Fall 2004

BOARD OF EDITORS

EDITOR IN CHIEF

Eric D. Gunning

MANAGING EDITOR

Scott A. Goodwin

PRODUCTION EDITOR

Emily D. Lauck

ARTICLES EDITORS

Joel Dion
Cory Jackson
Andrew D. Johnson

CASENOTE & COMMENT EDITORS

Kley Achterhof
Chelsea May
Jennifer L. Owens
Andrew Teske

EXECUTIVE EDITOR

Karl A. Dierenbach

ASSISTANT PRODUCTION EDITOR

Paul Dunlap

ASSOCIATE EDITORS

Thomas Blumstrom
Peter Chen
Jason Mashek

Jonathon Blum
Jamey Green
Tim Newlin

Xiaolu Zhang

MEMBERS

Molly Ferrer
Lisa Neal-Graves
Andrew Hogle
Andrew LaFontaine
Jennifer Loyd
Alexander Ross

Paul Frinak
Berkeley Harris
Todd Hoy
Zachary Lange
Alison Minea
Rita Sanzgiri
Cynthia Sweet

Joshua Graae
Patricia Ho
Heather Kenney
Travis Litman
Christopher Myers
Margot Summers

FACULTY ADVISOR

Philip J. Weiser, *Associate Professor of Law*
Executive Director of the Silicon Flatirons Telecommunications Program

J. ON TELECOMM. & HIGH TECH. L.

THE UNIVERSITY OF COLORADO SCHOOL OF LAW

FACULTY, 2004-05

- BARBARA A. BINTLIFF, *Nicholas Rosenbaum Professor of Law and Law Library Director*. B.A., Central Washington State College; J.D., M.L.L., University of Washington.
- HAROLD H. BRUFF, *Charles Inglis Thomson Professor of Law*. B.A., Williams College; J.D., Harvard University.
- CLIFFORD J. CALHOUN, *Professor Emeritus*. A.B., LL.B., Harvard University.
- EMILY M. CALHOUN, *Professor of Law*. B.A., M.A., Texas Tech University; J.D., University of Texas.
- PAUL F. CAMPOS, *Professor of Law*. A.B., M.A., J.D., University of Michigan.
- HOMER H. CLARK, JR., *Professor Emeritus*. A.B., LL.D., Amherst College; LL.B., LL.M., Harvard University.
- RICHARD B. COLLINS, *Professor of Law and Director of the Byron R. White Center for the Study of American Constitutional Law*. B.A., Yale College; LL.B., Harvard University.
- JAMES N. CORBRIDGE, JR., *Professor Emeritus*. A.B., Brown University; LL.B., Yale University.
- NESTOR DAVIDSON, *Associate Professor of Law*. A.B., Harvard University; J.D., Columbia University.
- RICHARD DELGADO, *Jean N. Lindsley Professor of Law*. A.B., University of Washington; J.D., University of California, Berkeley.
- ALLISON HARTWELL EID, *Associate Professor of Law*. A.B., Stanford University; J.D., University of Chicago.
- TED J. FIFLIS, *Professor of Law*. B.S., Northwestern University; LL.B., Harvard University.
- WAYNE M. GAZUR, *Professor of Law*. B.S., University of Wyoming; J.D., University of Colorado; LL.M., University of Denver.
- DAVID H. GETCHES, *Dean and Raphael J. Moses Professor of Natural Resources Law*. A.B., Occidental College; J.D., University of Southern California.
- LAKSHMAN GURUSWAMY, *Professor of Law*. LL.B., Sri Lanka; Ph.D., University of Durham, U.K.
- MELISSA HART, *Associate Professor of Law*. B.A., Harvard-Radcliffe College; J.D., Harvard University.
- DAVID S. HILL, *Professor of Law*. B.S., J.D., University of Nebraska.
- CLARE HUNTINTON, *Associate Professor of Law*. B.A., Oberlin College; J.D., Columbia University.
- J. DENNIS HYNES, *Nicholas Rosenbaum Professor Emeritus*. B.A., LL.B., University of Colorado.

HOWARD C. KLEMME, *Professor Emeritus*. B.A., LL.B., University of Colorado; LL.M., Yale University.

SARAH A. KRAKOFF, *Associate Professor of Law*. B.A., Yale University; LL.B., University of California, Berkeley.

MARK J. LOEWENSTEIN, *Associate Dean for Research and Professor of Law*. A.B., J.D., University of Illinois.

DAYNA BOWEN MATTHEW, *Associate Professor of Law*, A.B., Harvard; J.D., University of Virginia.

CHRISTOPHER B. MUELLER, *Henry S. Lindsley Professor of Procedure and Advocacy*. A.B., Haverford College; J.D., University of California, Berkeley.

ROBERT F. NAGEL, *Ira C. Rothgerber, Jr. Professor of Constitutional Law*. B.A., Swarthmore College; J.D., Yale University.

DALE OESTERLE, *Monfort Professor of Commercial Law and Director of the Entrepreneurial Law Center*. B.A., M.P.P., J.D., University of Michigan.

SCOTT R. PEPPET, *Associate Professor of Law*. B.A., Cornell University; J.D., Harvard University.

COURTLAND H. PETERSON, *Nicholas Doman Professor of International Law Emeritus*. B.A., LL.B., University of Colorado; M. Comp. L., University of Chicago; Dr. Jur., University of Freiburg (Germany).

WILLIAM T. PIZZI, *Professor of Law*. A.B., Holy Cross College; M.A., University of Massachusetts; J.D., Harvard University.

CAROLYN B. RAMSEY, *Associate Professor of Law*. B.A., University of California, Irvine; A.M., Stanford University; J.D., Stanford University.

KEVIN R. REITZ, *Professor of Law*. B.A., Dartmouth College; J.D., University of Pennsylvania.

WILLIAM E. RENTFRO, *Professor Emeritus*. B.A., University of Colorado; Th.M., LL.B., University of Denver.

PIERRE J. SCHLAG, *Byron White Professor of Law*. B.A., Yale University; J.D., University of California, Los Angeles.

AMY J. SCHMITZ, *Associate Professor of Law*. B.A., Drake University; J.D., University of Minnesota.

DON W. SEARS, *Professor Emeritus*. B.S., J.D., Ohio State University.

PETER N. SIMON, *Associate Professor Emeritus*. B.S., M.D., University of Wisconsin; J.D., University of California, Berkeley.

NORTON L. STEUBEN, *Nicholas Rosenbaum Professor of Law Emeritus*. A.B., J.D., University of Michigan.

ARTHUR H. TRAVERS, JR., *Professor Emeritus*. B.A., Grinnell College; LL.B., Harvard University.

MICHAEL J. WAGGONER, *Associate Dean for Academic Affairs and Associate Professor of Law*. A.B., Stanford University; LL.B., Harvard University.

PHILIP J. WEISER, *Associate Professor of Law and Executive Director of the Silicon Flatirons Telecommunications Program*. B.A., Swarthmore College; J.D., New York University.

MARIANNE WESSON, *Professor of Law and Wolf-Nichol Fellow*. A.B., Vassar College; J.D., University of Texas.

AHMED A. WHITE, *Associate Professor of Law*. B.A., Southern University and A & M College; J.D., Yale University.
CHARLES F. WILKINSON, *University's Distinguished Professor and Moses Lasky Professor of Law*. B.A., Denison University; LL.B., Stanford University.
SIENHO YEE, *Associate Professor of Law*. Peking University, B.A., Brandeis University; J.D., Columbia University; University of Oxford.

Research and Clinical Faculty

NORMAN F. AARONSON, *Clinical Professor, Legal Aid and Defender Program*. A.B., Brandeis University; J.D., Boston University.
ROBERT J. DIETER, *Clinical Professor, Legal Aid and Defender Program*. B.A., Yale University; J.D., University of Denver.
H. PATRICK FURMAN, *Clinical Professor, Legal Aid and Defender Program, and Director of Clinical Programs*. B.A., J.D., University of Colorado.
JULIET C. GILBERT, *Clinical Professor, Legal Aid and Defender Program*. B.A., Valparaiso University; J.D., University of Denver.
JILL E. TOMPKINS, *Instructor and Director of the Indian Law Clinic*. B.A., The King's College; J.D., University of Maine.

Law Library Faculty

BARBARA A. BINTLIFF, *Nicholas Rosenbaum Professor of Law and Law Library Director*. B.A., Central Washington State College; J.D., M.L.L., University of Washington.
GEORGIA K. BRISCOE, *Associate Director and Head of Technical Services*. B.S., Washington State University; M.A., University of San Diego; M.L.S., University of Michigan.
DONALD L. FORD, *Reference Librarian*. B.A., American University School of International Service; J.D., University of Virginia; M.L.I.S., University of Pittsburgh School of Information Sciences.
DRUET CAMERON KLUGH, *Reference Librarian*. B.A., J.D., University of Iowa.
KAREN SELDEN, *Catalog Librarian*. B.S., Pennsylvania State University; M.L.S., Simmons College.
YUMIN JIANG, *Technical Services Librarian*. M.S., University of Illinois, Urbana-Champaign; M.A. University of Wisconsin.
RUSSELL SWEET, *Head of Public Services*. B.A., University of California, Riverside; M.A., Yale University; J.D., University of Washington; M.L., University of Washington.
JANE E. THOMPSON, *Head of Faculty Services*. B.A., University of Missouri; M.A., J.D., University of Denver.

Legal Writing and Appellate Advocacy Faculty

- LOUISA HEINY, *Legal Writing Instructor*. B.A., J.D., University of Colorado.
- NATALIE MACK, *Legal Writing Instructor*. B.S., University of South Carolina; J.D., University of Colorado.
- GABRIELLE M. STAFFORD, *Legal Writing Professor*. B.A., University of Pennsylvania; J.D., Boston University.
- TODD M. STAFFORD, *Legal Writing Professor*. B.A., Southern Methodist University; J.D., Duke University.

Research Associates

- DOUGLAS S. KENNEY, *Research Associate, Natural Resources Law Center*. B.A., University of Colorado; M.S., University of Michigan School of Natural Resources and Environment; Ph.D., Cornell University.
- KATHRYN M. MUTZ, *Research Associate, Natural Resources Law Center*. B.A., University of Chicago; M.S., Utah State University; J.D., University of Colorado.
- JEAN STEFANCIC, *Senior Research Associate*. B.A., Maryville College; M.L.S., Simmons College; M.A., University of San Francisco.

Adjunct, Adjoint and Visiting Faculty

- GARRY R. APPEL, *Attorney at Law, Appel & Lucas, P.C., Denver, Colorado*. B.A., J.D., University of Colorado.
- GEORGE BRAUCHLER, *Deputy District Attorney, First Judicial District, Golden, Colorado*. B.A., J.D., University of Colorado.
- SHARON CAULFIELD, *Attorney at Law, Caplan & Earnest, LLC, Boulder, Colorado*. B.A., J.D., University of Colorado.
- CHRISTIE COATES, *Attorney at Law, Boulder, Colorado*. B.A., Houston Baptist University; M.Ed., University of Houston; J.D., University of Colorado.
- SEAN CONNELLY, *Partner, Hoffman, Reilly, Pozner & Williamson, Denver, Colorado*. A.B., Fairfield University; J.D., Catholic University Law School.
- STEVEN CLYMER, *Attorney at Law, ACCORD Dispute Resolution Services, Boulder, Colorado*. A.B., St. Louis University; J.D., Case Western Reserve University.
- WILEY DANIEL, *Judge, United States District Court for the District of Colorado*. B.A., J.D., Howard University.
- DANIEL DEASY, *Attorney at Law, George Browning & Associates, Westminster, Colorado*. B.A., J.D., University of Colorado.
- ROGER FLYNN, *Executive Director, Western Mining Action Project, Boulder, Colorado*. B.S., Lehigh University; J.D., University of Colorado.
- JOHN A. FRANCIS, *Partner, Davis, Graham, & Stubbs, Denver, Colorado*. B.A., University of Colorado; J.D., University of Michigan.

EDWARD J. GAC, *Associate Professor of Taxation and Business Law, College of Business, University of Colorado, Boulder.* A.A., Wright College; B.A., Western Illinois University; J.D., University of Illinois.

CRAIG C. GARBY, *Associate, Gibson, Dunn & Crutcher, LLP, Denver, Colorado.* B.A., University of Colorado; Graduate Research, Waseda University, Tokyo, Japan; M.P.A., Cornell University; J.D., Stanford University.

JASON D. HAISLMAIER, *Associate, Holme Roberts & Owen LLP, Boulder, Colorado.* B.S., Northwestern University; J.D., Franklin Pierce Law Center.

ANDREW HARTMAN, *Attorney at Law, Cooley Godward, LLP, Broomfield, Colorado.* A.B., University of Michigan; J.D., Georgetown University.

BETTY JACKSON, *Professor of Accounting, School of Business, University of Colorado, Boulder.* BBA, Southern Methodist University; M.P.A., Ph.D., University of Texas, Austin.

THOMAS D. LUSTIG, *Senior Staff Attorney, National Wildlife Federation, Boulder, Colorado.* A.B., Washington University; M.S., University of Michigan; J.D., University of Colorado; Ph.D., Massachusetts Institute of Technology.

JACK MILLS, *Attorney at Law, A.J. Mills, P.C., Boulder, Colorado.* BBA, LL.B., University of Oklahoma.

VIVA R. MOFFAT, *Attorney at Law, Law Offices of David Mastbaum, Boulder, Colorado.* A.B., Stanford University; M.A., J.D., University of Virginia.

ANN MORGAN, *Adjoint Professor, University of Colorado, Boulder, Colorado.* B.S., University of California, Berkeley; M.B.A., Golden Gate University.

RUTH ORATZ, *Genetic Counselor, Rocky Mountain Cancer Center, Denver, Colorado.* A.B., Harvard University; M.D., Albert Einstein College of Medicine

CHRISTOPHER D. OZEROFF, *Partner, Hogan & Hartson LLP, Boulder, Colorado.* B.A., Stanford University; J.D., University of Chicago.

DOROTHY RAYMOND, *Senior Vice President and General Counsel, CableLabs, Denver, Colorado.* B.A., University of Denver; J.D., University of Colorado.

THE HONORABLE NANCY E. RICE, *Justice, Colorado Supreme Court, Denver, Colorado.* B.A., Tufts University; J.D., University of Utah.

THE HONORABLE EDWARD J. RICHARDSON, *State of Florida Circuit Court Judge, Retired.* A.S., Brevard Community College; B.S., University of Florida; J.D., Florida State University.

PATRICK RYAN, *Attorney at Law, P.S.R. Lawfirm, Denver, Colorado.* B.A., M.B.A., Monterey Institute of International Studies; J.D., University of Texas at Austin; M.B.L., Universität St. Gallen, Switzerland; Ph.D. Katholieke Universiteit Leuven, Belgium.

MICHAEL SAUL, *Attorney, National Wildlife Federation, Boulder, Colorado.* B.A., J.D., Yale University.

STUART W. STULLER, *Attorney at Law, Caplan & Earnest, Boulder, Colorado.* B.A., University of Wisconsin; J.D., University of Colorado.

KAREN TAYLOR, *Deputy Public Defender, Colorado State Public Defender Office, Denver, Colorado.* B.A., Missouri Southern State College; J.D., Northwestern University.

NATHANIEL TRELEASE, *President, WebCredenza, Inc., Denver, Colorado.* B.S., University of Wyoming; J.D., University of Wyoming; LL.M, University of Denver.

DEANNA WESTFALL, *Attorney at Law, Bennington Johnson Biermann & Craigmile LLC, Denver, Colorado.* B.A., Washington College, St. Louis; J.D., University of Colorado.

FROM THE EDITOR

Entering our third year of publication, there is cause for excitement at the *Journal on Telecommunications and High Technology Law* (JTHTL). In addition to making the long awaited move to two issues per year, we are continuing JTHTL's valuable contribution to the ongoing debate over the future of communications policy. Working in close coordination with the Silicon Flatirons Telecommunications Program, JTHTL's mission is to bring a refreshing and innovative perspective to the array of issues arising because of the "Great Digital Broadband Migration."¹

This first issue of volume three continues JTHTL's mission by furthering the debate on a number of intriguing issues confronting regulators, academics, and industry participants. This issue begins with a compelling plea from FCC Chairman Michael K. Powell to the industry urging the voluntary adoption of a set of "Internet Freedoms," principles that would guarantee customer access to Internet content free from any arbitrary restrictions imposed by broadband providers. Following Chairman Powell's speech, Professors Christopher Yoo and Tim Wu cogently debate the pros and cons of a government-mandated network neutrality regime. These two articles provide a glimpse into the well-articulated arguments that characterized last spring's Silicon Flatirons Telecommunications Program Conference.

Next, Professor Howard Shelanski examines the competitive landscape and role of antitrust policy in the deployment of the third broadband "pipe" to the home: 3G Wireless technologies. The following two articles in this issue provide thoughtful analysis to a crucial, albeit little discussed, area of telecommunications and Internet law. Scott Marcus of the FCC's Office of Strategy Planning and Policy Analysis addresses the appropriate level of government intervention required in upgrading the Internet's infrastructure, while Professor Peter Swire provides a theoretical perspective on the propriety of disclosing vulnerabilities in order to increase security on the Internet. Finally, Volume 3, Issue 1 concludes with the 2003 Silicon Flatirons Student Writing Contest Winner, Joe Linhoff, who discusses the implications of

1. See Michael K. Powell, *Preserving Internet Freedom: Guiding Principles for the Industry*, 3 J. ON TELECOMM. & HIGH TECH. L. 5, 5 & n.1 (2004).

J. ON TELECOMM. & HIGH TECH. L.

the Digital Millennium Copyright Act on reverse engineering in the video game industry.

Bringing these debates to publication requires countless hours of work and dedication from the entire journal staff. Although the entire Board deserves my utmost gratitude, there are a few individuals who I would like to thank personally for making my life easier and production of this issue possible. I would especially like to thank Emily Lauck, my Production Editor, for all of her hard work in organizing cite checks, helping to produce the Journal, and manning the helm while Scott Goodwin, my Managing Editor, and I were in Washington, D.C. this summer. As for Scott, I would like to thank him for his ability to take seemingly insurmountable problems and place them in a context that made overcoming them effortless. I would also like to thank Karl Dierenbach and my Articles Editors (Cory Jackson, Andrew Johnson, and Joel Dion) for working so diligently without a complaint even when my requests may have been unreasonable.

There are others, outside the journal staff, who deserve recognition. First, I am indebted to the eight authors in this issue for understanding that with a relatively new journal, there will be inevitable growing pains. Their understanding and flexibility made the production process much easier. Second, the current JTHTL Board are mere caretakers holding the fate of this journal in trust for those who laid the groundwork before us and those who will carry the torch after we leave. For the past members of the journal, thank you for making a Volume 3 possible and to those that follow, I wish you success in continuing what we began.

Finally, and most importantly, I must express my sincere gratitude for everything that Professor Phil Weiser has done for both this journal and for its members. A few years ago, Phil Weiser breathed life into the University of Colorado School of Law by establishing both the Silicon Flatirons Telecommunications Program as well as JTHTL. As a product of his inspiration and dedication, Phil Weiser deserves all the credit for this journal's continued success. I can confidently speak for every member of the journal in saying that we are each indebted to Professor Weiser for his guidance and friendship. Personally, I can never repay him for all the doors he has opened and advice he has given.

With that being said, I am proud to publish Volume 3, Issue 1 of the *Journal on Telecommunications and High Technology Law* and am confident that this Journal will continue to bring a refreshing approach to the intellectual debates that make the telecommunications industry the most interesting, stimulating, and dynamic area of the law today.

Eric D. Gunning
Editor-In-Chief

JOURNAL ON TELECOMMUNICATIONS & HIGH TECHNOLOGY LAW

Volume 3

Fall 2004

CONTENTS

THE DIGITAL BROADBAND MIGRATION: TOWARD A REGULATORY REGIME FOR THE INTERNET AGE

A symposium co-sponsored by the *Journal on Telecommunications and High
Technology Law* and the Silicon Flatirons Telecommunications Program

INTRODUCTION: A REGULATORY REGIME FOR THE INTERNET AGE <i>Philip J. Weiser</i>	1
PRESERVING INTERNET FREEDOM: GUIDING PRINCIPLES FOR THE INDUSTRY <i>Michael K. Powell</i>	5
WOULD MANDATING BROADBAND NETWORK NEUTRALITY HELP OR HURT COMPETITION? A COMMENT ON THE END-TO-END DEBATE <i>Christopher S. Yoo</i>	23
THE BROADBAND DEBATE, A USER'S GUIDE <i>Tim Wu</i>	69
COMPETITION POLICY FOR MOBILE BROADBAND NETWORKS <i>Howard A. Shelanski</i>	97
EVOLVING CORE CAPABILITIES OF THE INTERNET <i>J. Scott Marcus</i>	121

A MODEL FOR WHEN DISCLOSURE HELPS SECURITY: WHAT
IS DIFFERENT ABOUT COMPUTER AND NETWORK SECURITY?
Peter P. Swire.....163

SILICON FLATIRONS STUDENT WRITING CONTEST 2003

VIDEO GAMES AND REVERSE ENGINEERING: BEFORE AND
AFTER THE DIGITAL MILLENNIUM COPYRIGHT ACT
Joe Linhoff.....209