

Tufts University
*Graduate Department of Urban and
Environmental Policy and Planning (UEP)*

CLEAN AIR & CLEAN WATER POLICY
SYLLABUS – UEP-174A: SUMMER, 2010

DATE of this VERSION: June 23, 2010







The current – and official – version of this syllabus is posted here on Blackboard. It will be updated periodically. When you register for the course, please sign up for (and become familiar with) the Blackboard site: <http://blackboard.tufts.edu>.


NOTES: Please read selections in the order in which they are listed.

Class #1: Introduction to the Course
Thurs., May 27

- ✓ We who are taking and teaching the course
- ✓ Outline and scope of UEP-174A
- ✓ A brief history of water and air pollution control
- ✓ The nature of the resources – and the relevant policy concerns
- ✓ The political and policy landscape today
- ✓ Important interactions: levels of government, institutions, regions, science, policy, advocacy, citizen participation, ideology, etc.

Video viewing: After an introduction, the course will begin with a 90-minute video, “Liquid Assets: The Story of Our Water Infrastructure,” produced in 2008 for PBS, which explores the history, engineering, and political and economic challenges of water infrastructure in the U.S.

-  Political cartoon (Peter Wallace, Harry Fig's Neighborhood: The Bad News) [Blackboard].
-  Air and water quality: media articles [Blackboard, except as noted]:
- Grimond, John, "For Want of a Drink," *The Economist* (print edition), May 20, 2010, at: http://www.economist.com/specialreports/displayStory.cfm?story_id=16136302.
 - Barringer, Felicity, "Pact Would Open River; Removing Four Dams; Potential Ending to Dispute in West," *New York Times*, Fri., Nov. 14, 2008, p. A18.
 - Abel, David, "Emergency Has Some in Concord Reconsidering Bottle Ban," *Boston Globe*, Wed., May 5, 2010, p. A11.
 - Royte, Elizabeth, "A Tall, Cool Drink of . . . Sewage?" *New York Times Magazine*, Sun., Aug. 10, 2008, p. 30.
 - Navarro, Mireya, "Gas Drilling Is Limited in 2 New York State Watersheds," *New York Times*, Sat., Apr. 24, 2010, p. A15.
 - Smith, Stephen, "Scourge of Asthma Is Acute in N.E.," *Boston Globe*, Mon., Apr. 26, 2010, p. A1.
 - Barringer, Felicity, "Analysis Finds Elevated Risk from Soot Particles in the Air," *New York Times*, Wed., June 3, 2009, p. A28.
 - Bhanoo, Sindya N., "The E.P.A. Announces a New Rule on Polluters," *New York Times*, Fri., May 14, 2010, p. A13.
 - Halbfinger, David M., "New York State Says Indian Point Violates Water Act," *New York Times*, Sun., Apr. 4, 2010, sec. 1, p. 16.
-  Tarr, Joel A., "Crossing Environmental Boundaries" and "The Search for the Ultimate Sink; Urban Air, Land, and Water Pollution in Historical Perspective," in *The Search for the Ultimate Sink: Urban Pollution in Historical Perspective* (Akron, Ohio: U. of Akron Press, 1996), pp. 1-35 [Reader].
-  Tarr, "The Separate vs. Combined Sewer Problem," in *The Search for the Ultimate Sink*, pp. 131-155 [Reader].
-  Stradling, David, "Priests of the New Epoch; Engineers and Efficiency," in *Smokestacks and Progressives; Environmentalists, Engineers, and Air Quality in America, 1881-1951* (Baltimore: Johns Hopkins Univ. Press, 1999), pp. 85-107 [Reader].
-  Thorsheim, Peter, "Interpreting the London Fog Disaster of 1952," Ch. 7 in DuPuis, E. Melanie, ed., *Smoke and Mirrors: The Politics and Culture of Air Pollution* (New York: NYU Press, 2004) [*Smoke & Mirrors*], pp. 154-169.


 Glennon, Robert, *Water Follies: Groundwater Pumping and the Fate of America's Fresh Waters* (Washington, D.C.: Island Press, 2002), Ch. 1, "The Worth of Water in the United States," [*Water Follies*], pp. 13-21.

➤ Please try to read at least some of these selections in advance and plan on completing them within a week. If you don't have time to read all of them before the first class, focus on both Tarr excerpts, the Thorsheim piece from DuPuis, and the media items.

❖ For discussion in class: How would you design an air and water quality program for a state, for the entire U.S., for a recently-discovered country or for the European Union?


Class #2: The Basic Top-Down Regulatory Model **Tues., June 1**


- ✓ Modern history of air and water quality
- ✓ The basic regulatory model(s)
- ✓ "Command-and-control" as a reliably squeaky paradigm
- ✓ Permitting – Where standards meet reality
- ✓ Introduction to institutional players



 Air and water quality: selected data [Handout in class].

 Aspects of Command-and-Control: selected media articles [Blackboard]:

- Venkataraman, Bina, "EPA Targets Water Runoff; Strict Rules Ahead for 3 Mass. Towns," *Boston Globe*, Mon., Nov. 17, 2008, p. B1.
- Duhigg, Charles, "U.S. Bolsters Chemical Restrictions for Water," *New York Times*, Tues., Mar. 23, 2010, p. B1.
- Barringer, Felicity, "Court Rejects Agency Limits on States' Emissions Rules," *New York Times*, Wed., Aug. 20, 2008, p. A18.
- Wald, Matthew L., "Georgia Judge Cites Carbon Dioxide in Denying Coal Plant Permit," *New York Times*, Tues., July 1, 2008, p. C4.

 Layzer, Judith A., *The Environmental Case: Translating Values into Policy*, 2nd ed. (Washington, D.C.: CQ Press, 2006), Chapter 2, "The Nation Tackles Pollution; The Environmental Protection Agency and the Clean Air and Clean Water Acts," pp. 26-53 [Reader].



 Rosenbaum, Walter, *Environmental Politics and Policy*, 7th ed. (Washington, D.C.: CQ Press, 2008), Chapter 6, "Command and Control in Action: Air and Water Pollution Regulation," pp. 174-207 [Reader].

-  Command-and-Control: Pros and Cons [Blackboard].
-  Example of Clean Water Act permit issued by state of Rhode Island [Blackboard] [please skim].

Assignment #1: Identify a contemporary, site-specific controversy about clean air or clean water policy (but not both) – for example, an issue involving a local or state political dispute or a community facing impaired air or water quality. Please write a brief description and analysis of the controversy, being sure to identify the interests with the most (and least) power; the history of the issue; its current status; possible outcomes/resolutions; and why it is important. Length limit is 1,500 words (about 3.5 pages, single-spaced), so you will need to be concise. Please email it to me by 11 p.m. on Thurs., June 10.

Longer paper option: Instead of writing three papers, you may choose to write one longer paper, due at the last class meeting, the day that all papers are presented. This paper should address an aspect of policy development or implementation bridging air and water quality in the U.S. (and it may track, in greater depth, the plan for Assignment #3 (see below)). Length expectation is 4,500 to 5,500 words. For this option, please present a one-page proposal for my review no later than the start of class on Thursday, June 10. You also will be expected to submit an outline of the paper in advance and meet with me at least once, in person or by phone.

**Class #3: Water Quality: The Clean Water Act &
Thurs., June 3 Safe Drinking Water Act**

- ✓ Water quality: An introduction
 - ✓ The Clean Water Act
 - ✓ The Safe Drinking Water Act
 - ✓ Current issues, threats and pressure points
 - ✓ An initial contrast to air quality regulation and policy
-  Political cartoon (Mark Alan Stamaty, Washington: Don't Drink the Water (1992)) [Blackboard].
 -  Water quality and drinking water: selected media articles:

- Duhigg, Charles, “Toxic Waters” [series], *New York Times*, at: <http://projects.nytimes.com/toxic-waters>:
 - “Sewers at Capacity, Waste Poisons Waterways,” *Mon.*, Nov. 23, 2009.
 - “Saving U.S. Water and Sewer Systems Would Be Costly,” *Mon.*, Mar. 15, 2010.
 - “Rulings Restrict Clean Water Act, Hampering E.P.A.,” *Mon.*, Mar. 1, 2010.
 - “Tap Water Can Be Unhealthy but Still Legal,” *Wed.*, Dec. 16, 2009.
- Dean, Cornelia, “Drugs Are in the Water. Does It Matter?” *New York Times*, *Tues.*, April 3, 2007, p. F3 [Blackboard].
- 📖 Sabatier, Paul A., et al., “Eras of Water Management in the United States: Implications for Collaborative Watershed Approaches,” Chapter 2, pp. 23-52, in Sabatier, Paul A., et al., eds., *Swimming Upstream: Collaborative Approaches to Watershed Management* (Cambridge, Mass.: MIT Press, 2005) [Reader].
- 📖 Freeman, A. Myrick III, “Water Pollution Policy,” in Paul R. Portney and Robert N. Stavins, *Public Policies for Environmental Protection*, 2nd ed. (Washington, D.C.: RFF Press, 2000), pp. 169-213 [Reader].
- 📖 Rosenbaum, Walter, *Environmental Politics and Policy*, 7th ed. (Washington, D.C.: CQ Press, 2008), Chapter 6, “Command and Control in Action: Air and Water Pollution Regulation,” pp. 211-213 [Reader].
- 📖 Glicksman, Robert L., *Environmental Protection: Law and Policy* (New York: Aspen Publishers, 2007) pp. 801-802, 806-809 [selections] [Blackboard].

Class #4: Groundwater
Tues., June 8

- ✓ Groundwater and environmental quality
 - ✓ Groundwater policy
 - ✓ Connection to other regulatory programs
 - ✓ Current issues, threats and pressure points
- 📖 Groundwater: selected media articles [Blackboard]:
- Schweitzer, Sarah, “Bottled Water Plan Divides Towns; Nestle Co.’s Quest To Tap into Aquifer Could Lift Clinton, but Sterling Leery,” *Boston Globe*, *Mon.*, April 7, 2008, p. B1.

- Duhigg, Charles, "Toxic Waters" [series], *New York Times*, at: <http://projects.nytimes.com/toxic-waters>: "Health Ills Abound as Farm Runoff Fouls Wells," Thurs., Sept. 17, 2009.
- 📖 Rosenbaum, Walter, *Environmental Politics and Policy*, 7th ed. (Washington, D.C.: CQ Press, 2008), Chapter 6, "Command and Control in Action: Air and Water Pollution Regulation," pp. 207-211 [Reader].
- 📖 *Water Follies*, Ch. 2, "Human Reliance on Groundwater," pp. 23-34.
- 📖 *Water Follies*, Ch. 3, "The Santa Cruz in Tucson," pp. 35-50.
- 📖 *Water Follies*, Ch. 9, "Wild Blueberries and Atlantic Salmon," pp. 127-141.

Longer Paper Option: If you've chosen this option, please submit a one-page description of your proposed topic by the beginning of class on Thurs., June 10.

Assignment #2: Identify proposed legislation or regulations involving air or water quality, and write a brief analysis of the proposal. If you looked at air policy in Assignment #1, your analysis here should focus on water policy, and vice versa. If at all possible, choose a pending proposal, not one that was adopted long ago, or one that has been defeated or tabled. Length limit is 1,500 words (about 3.5 pages, single-spaced). This is due by 11 p.m. on Tues., June 22.

Class #5: Air Quality: Stationary Sources
Thurs., June 10





- ✓ Air quality: An introduction
 - ✓ The Clean Air Act, structure and function
 - ✓ Stationary sources
 - ✓ Types of regulatory mechanisms
 - ✓ Comparison to water quality regulation
 - ✓ Current issues, threats and pressure points
- 📖 Political cartoon (green smoke) [Blackboard].
 - 📖 Air quality: selected media articles [Blackboard]:

- Hebert, H. Joseph, "Panel Says Link Between Smog and Premature Death Is Clear," *Associated Press Online*, Tues., April 22, 2008 [Blackboard].
 - Evers, David C. and Charles T. Driscoll, Jr., "The Danger Downwind," *New York Times*, Thurs., April 26, 2007, p. A25 [Blackboard].
 - Broder, John M., "E.P.A. Seeks Tighter Rules To Cut Down on Air Pollution," *New York Times*, Fri., Jan. 8, 2010, p. A1 [Blackboard].
 - Ailworth, Erin, "Utility Accused of Emissions Offenses in Salem," *Boston Globe*, Thurs., Jan. 28, 2010, p. B9 [Blackboard].
- 📖 Portney, Paul R., "Air Pollution Policy," Paul R. Portney and Robert N. Stavins, *Public Policies for Environmental Protection*, 2nd ed. (Washington, D.C.: RFF Press, 2000), pp. 77-123 [Reader].
- 📖 *Smoke & Mirrors*: Ch. 10, DuPuis, E. Melanie, "Who Owns the Air? Clean Air Act Implementation of Common Property Rights," pp. 223-240.
- 📖 *Smoke & Mirrors*: Ch. 14, Raufer, Roger K., "Notes from the Field; Air Pollution Engineering as Cultural Experience," pp. 305-323.

Assignment #1 is due via email by 11 p.m. on Thurs., June 10

Class #6: Water Quality: Advocacy on the Ground
Tues., June 15

- ✓ The role of community-based advocacy
 - ✓ Watershed-based environmental management
 - ✓ Wetlands and watersheds
 - ✓ Jurisdiction
- 📖 Sabatier, Paul A., et al., "Collaborative Approaches to Watershed Management," Chapter 1, pp. 3-21, in Sabatier, Paul A., et al., eds., *Swimming Upstream: Collaborative Approaches to Watershed Management* (Cambridge, Mass.: MIT Press, 2005) [Reader].
- 📖 Lubell, Mark, et al., "Conclusions and Recommendations," Chapter 9 (selections), pp. 289-296, in Sabatier, Paul A., et al., eds., *Swimming Upstream: Collaborative Approaches to Watershed Management* (Cambridge, Mass.: MIT Press, 2005) [Reader].
- 📖 *Water Follies*, Ch. 7, "Suburban Development and Watershed Initiatives," pp. 99-111.




-  Greenhouse, Linda, "Justices Divided on Protections Over Wetlands," *New York Times*, Tues., June 20, 2006, p. A6 [Blackboard].
-  U.S. EPA, "Mystic River Scores C- : Good Progress Underway" (media release), Sun., May 16, 2010 [Blackboard].
-  City of Cambridge, Mass., Department of Public Works, *Notice Alert: CSO Activation in Alewife Brook*, March 31, 2010 [Blackboard].
-  MyRWA website: www.mysticriver.org (please review).



Speaker: Patrick Herron, Water Quality Monitoring Director, Mystic River Watershed Association (MyRWA)

Class #7: Air Quality: Mobile Sources

Thurs., June 17




- ✓ Moveable pollutants
 - ✓ Command-and-Control Plus -- and federal partial pre-emption
 - ✓ Rise of GHG reduction programs for cars and trucks
 - ✓ Precautionary principle
-  Political cartoon (Rob Rogers: Jimmy) [Blackboard].
 -  Mobile sources: selected media articles [Blackboard]:
 - Bakalar, Nicholas, "Highway Exhaust Stunts Lung Growth, Study Finds," *New York Times*, Tues., Jan. 30, 2007, p. F6.
 - Roosevelt, Margot, "Smog in L.A. Is Still Tops in Nation," *Los Angeles Times*, Wed., April 28, 2010, p. AA1.
 - Hoffman, Jascha, "Idea Lab: Criminal Element; Was Getting the Lead Out of Gasoline a Factor in the Drop in Crime?" *New York Times Magazine*, Sun., Oct. 21, 2007, p. 32.
 - Roosevelt, Margot, "'Widespread Fraud' in Smog Test Program," *Los Angeles Times*, Thurs., Feb. 25, 2010, p. AA1.
 - Barringer, Felicity, "Environmental Agency Proposes Strict Standard for Some Diesel Engines," *New York Times*, Sat., March 3, 2007, p. A12.
 - Roosevelt, Margot, "Rules Will Limit Auto Emissions," *Los Angeles Times*, Fri., April 2, 2010, p. AA1.
 -  *Smoke & Mirrors*, Ch. 8, Dunsby, Joshua, "Localizing Smog; Transgressions in the Therapeutic Landscape," pp. 170-200.

- 📖 *Smoke & Mirrors*, Ch. 9, Rajan, Sudhir Chella, "A Fine Balance; Automobile Pollution Control Strategies in California," pp. 203-222.
- 📖 *Smoke & Mirrors*, Ch. 6, Uekoetter, Frank, "The Merits of the Precautionary Principle; Controlling Automobile Exhausts in Germany and the United States before 1945," pp. 119-153.
- 📖 Surowiecki, James, "Fuel for Thought" [The Financial Page], *New Yorker*, July 23, 2007, p. 25 [Blackboard].

Class #8: Markets and Equity
Tues., June 22

- ✓ Markets and market-enlisting mechanisms: the example of acid rain
- ✓ Water markets to address pollution? Non-point source pollution? Drinking water purity?
- ✓ Distribution and equity
- ✓ Environmental justice

- 📖 Political cartoon (Barsotti: Level Playing Field) [Blackboard].
- 📖 Markets and equity: selected media articles [on Blackboard]:
 - Stavins, Robert N., "How To Stop Squandering Water? Raise Its Price," *New York Times*, Sat., Aug. 14, 1999, p. A27.
 - Barringer, Felicity, "A Plan to Curb Farm-to-Watershed Pollution of Chesapeake Bay," *New York Times*, Fri., April 13, 2007, p. A10.
 - Broder, John M., "Closing of Mine on Tribal Lands Fuels Dispute Over Air, Water and Jobs," *New York Times*, Sun., Jan. 1, 2006, § 1, p. 8.
 - Blumenthal, Ralph, "Texas Lawsuit Includes a Mix of Race and Water," *New York Times*, Sun., July 9, 2006, § 1, p. 10.
- 📖 Ellerman, A. Denny, Paul L. Joskow and David Harrison, Jr., *Emissions Trading in the United States: Experience, Lessons and Considerations for Greenhouse Gases* (Pew Center on Global Climate Change Report; May 2003), pp. (ii)-20, at: www.pewclimate.org/docUploads/emissions%5Ftrading%2Epdf.
- 📖 FAQs on U.S. EPA, *Water Quality Trading Policy* (Jan. 13, 2003), at: www.epa.gov/owow/watershed/trading/tradingfaq.html.
- 📖 Ruhl, J.B. and James Salzman, "The Effects of Wetland Mitigation Banking on People," *National Wetlands Newsletter*, March-April, 2006, pp. 1, 9-14 [Blackboard].

-  Kamieniecki, Sheldon and Amy Below, "Ethical Issues in Stormwater Policy Implementation: Disparities in Financial Burdens and Overall Benefits," pp. 69-94, in Whiteley, John M., Helen Ingram and Richard Warren Perry, eds., *Water, Place, & Equity* (Cambridge, Mass.: MIT Press, 2008) [Reader].
-  *Water Follies*, Ch. 11, "The Black Mesa Coal Slurry Pipeline," pp. 155-168.
-  *Smoke & Mirrors*, Ch. 13, Harrison, Jill, "Invisible People, Invisible Places; Connecting Air Pollution and Pesticide Drift in California," pp. 288-304.

Assignment #2 is due via email by 11 p.m. tonight.

Assignment #3: Propose a plan to combine all or an important aspect of air and water policy in the U.S. Your proposal can be in narrative form, but detailed enough to raise and attempt to address the most challenging questions you can think of. Cost must be taken into account - and solutions that depend on generous new funding mechanisms will be discounted. You also must consider which government entities (and levels) will carry out what tasks. Or, you may decide (and then explain) that no such plan will work. Alternatively, you may consider a plan that looks at strategies for climate change mitigation and adaptation, either in the U.S. or globally. Length limit is 1,700 words (about 4 pages, single-spaced). This is due by 6 p.m. on Thurs., July 1. (A more detailed memo on this assignment, as well as on the final presentations, has been posted on Blackboard - and this should serve as your guide to the assignment.)

Longer paper option: An outline of the paper (at least 3-4 pages) is due via email by 11 p.m. on Thurs., June 24.







Class #9: Climate Change – Air, Water, Earth
Thurs., June 24

- ✓ Integration of air and water policy – the climate change way
 - ✓ Water and climate change – locally and globally
 - ✓ Mitigation or adaptation, or both?
 - ✓ Massachusetts v. EPA
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- 📖 Political cartoon (Tom Tomorrow – “Action News: 2099” (1999)) [Blackboard].
 - 📖 Political cartoon (Matt Davies (2008)) [Blackboard].
 - 📖 Heaney, Seamus, “Höfn,” *District and Circle* (New York: Farrar, Straus and Giroux, 2006), p. 51 [Blackboard].
 - 📖 A selection of op-eds [Handout].
 - 📖 Massachusetts v. EPA, 549 U.S. 497 (2007) [selections] [Blackboard].
 - 📖 Pew Center on Global Climate Change, *The Case for Action: Creating a Clean Energy Future* (May 2010), at: www.pewclimate.org/docUploads/case-for-action-creating-clean-energy-future.pdf.
 - 📖 Ellerman, A. Denny and Paul L. Joskow, *The European Union’s Emissions Trading System in Perspective* (Pew Center on Global Climate Change Report; May 2008), [pp. iii-iv, 1-11, 24, 43-46], at: <http://www.pewclimate.org/eu-ets>.
 - 📖 Kanter, James, "As Cap and Trade Falls Short, Europe Weighs New Tacks to Cut Carbon," *New York Times*, Tues., May 25, 2010, at B4 [Blackboard].
 - 📖 Asia Society Center on U.S.-China Relations and Pew Center on Global Climate Change, *A Roadmap on U.S.-China Collaboration on Global Climate Change* (Pew Center on Global Climate Change Report; January 2009), [pp. 16-27], at: www.pewclimate.org/docUploads/US-China-Roadmap-Feb09.pdf.

Longer paper option: An outline of the paper (at least 3-4 pages) is due via email by 11 p.m. tonight.

Class #10:
Tues., June 29

**Air and Water Pollution –
International Transboundary Impacts**


- ✓ Types of international environmental issues
 - ✓ Basic structure of international law, regulation, custom and practice
 - ✓ Transboundary impacts
 - ✓ Pollution control inside and outside of the U.S.
 - ✓ Two water-based case studies -- U.S. and Mexico, U.S. and Canada
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-  O'Neill, Kate, *The Environment and International Relations* (New York: Cambridge Univ. Press, 2009), Chapter 2, pp. 31-36 [Blackboard].
 -  McCormick, John, "The Role of Environmental NGOs in International Regimes," Chapter 5, pp. 84-86, in Axelrod, Regina S., David Leonard Downie and Norman J. Vig, eds., *The Global Environment; Institutions, Law, and Policy*, 2nd ed. (Washington, D.C.: CQ Press, 2005) [Blackboard].
 -  Sands, Philippe and Jacqueline Peel, "Environmental Protection in the Twenty-first Century: Sustainable Development and International Law," Chapter 3, pp. 56-58, in Axelrod, Regina S., David Leonard Downie and Norman J. Vig, eds., *The Global Environment; Institutions, Law, and Policy*, 2nd ed. (Washington, D.C.: CQ Press, 2005) [Blackboard].
 -  Davies, J. Clarence and Jan Mazurek, *Pollution Control in the United States; Evaluating the System* (Washington, D.C.: Resources for the Future, 1998), Chapter 9, pp. 193-201, 207-214, 220-229 [Blackboard].
 -  Mumme, Stephen P., "From Equitable Utilization to Sustainable Development: Advancing Equity in U.S.-Mexico Border Water Management," Chapter 5, pp. 117-146, in Whiteley, John M., Helen Ingram and Richard Warren Perry, eds., *Water, Place, & Equity* (Cambridge, Mass.: MIT Press, 2008) [Blackboard].
 -  Hirt, Paul W., "Developing a Plentiful Resource: Transboundary Rivers in the Pacific Northwest," Chapter 6, pp. 147-188, in Whiteley, John M., Helen Ingram and Richard Warren Perry, eds., *Water, Place, & Equity* (Cambridge, Mass.: MIT Press, 2008) [Blackboard].

Class #11: Presentations
Thurs., July 1

✓ Presentations:

- Class members will lead discussions drawing on their final assignments (synthesis paper or longer project), which are due today
- Total presentation time (including a minimum period for questions) will depend on course enrollment.
- Audio-visual equipment, including a projector and laptop, will be available if needed. Other presentation materials can be provided on request.

 *Water Follies*, Ch. 15, "The Tragedy of Law and the Commons," pp. 209-224.

 *Smoke & Mirrors*, Ch. 3, Mosley, Stephen, "Public Perceptions of Smoke Pollution in Victorian Manchester," pp. 54-55 ("The Smokeless Chimney," by E.J. Bellasis).

Assignment #3 and Long Papers are due by 6 p.m. on Thurs., July 1.