

CURRICULUM VITAE: Dina L. López

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EDUCATION

Ph.D. in Geology, 1992, Louisiana State University, Baton Rouge, Louisiana, U.S.A.
M.Sc. in Physics, 1979, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, U.S.A.
Licenciante (B.Sc. equivalent) in Chemistry, 1975, Universidad de El Salvador, Central America.

PROFESSIONAL EXPERIENCE

Ohio University, Department of Geological Sciences, Athens, Associate Professor (May 2001- present)
Ohio University, Department of Geological Sciences, Athens, Assistant Professor (September 1995-May 2001)
The University of British Columbia, Department of Geological Sciences, Research Associate, September 1994-August 1995. Post-Doctoral Fellow, July 91- August 1994. Supervisor: Dr. Leslie Smith.
Louisiana State University in Baton Rouge, Department of Geology and Geophysics. Graduate Teaching Assistant, 1988-1991.
CEL (Department of Energy in El Salvador). Petrophysicist (Geothermal energy Division), 1981-1987.
University of El Salvador, Department of Physics, Professor of Physics, 1979-1980 (full time), 1981-1987 (part time).
Virginia Polytechnic Institute and State University, Department of Physics, Graduate Teaching Assistant, 1977-1979.
University of El Salvador, Departments of Physics and Chemistry, Teaching Assistant, 1973-1976.

HONORS AND AWARDS

Victor de Sola 2003 National Award for outstanding contributions to the development of Geothermal Energy in El Salvador, LaGeo (Geothermal Energy Company in El Salvador).
Outstanding Faculty Award 2001, Department of Geological Sciences, Ohio University, Athens, Ohio (award given by faculty evaluations).
Outstanding Faculty Award 2000, Department of Geological Sciences, Ohio University, Athens, Ohio.
Outstanding Faculty Award 1999, Department of Geological Sciences, Ohio University, Athens, Ohio.
International Fellowship, American Association of University Women 1990-1991.

Fellowship, Organization of American States 1988-1990.
Fellowship (Agency for International Development) to get training in the experimental determination of physical properties of rocks, University of California in Berkeley, Dec. 1983- Jan. 1984.
Scholarship (M. Sc. degree in Physics), LASPAU (Latin American Scholarship Program of American Universities), 1977-79.

PUBLICATIONS

Hydrogeology and Geochemistry

- Carroll, K., **López, D.L.**, and Stoertz, M., 2003. Solute transport at low flow in an acid stream in Appalachian Ohio. *Air, Water and Soil Pollution*, vol. 144, pp. 195-222.
- López, D. L.**, 2002. On the interpretation of conductive heat flow anomalies near fault zones. *Geothermal Resources Transactions*, Vol. 26, p. 437-441.
- López, D.L.**, and Stoertz, M., 2001. Chemical and physical controls on waters discharged from abandoned underground coalmines, *Geochemistry: Exploration, Environment, Analysis*, Vol. 1, pp. 51-60.
- Shimala, J.R., **Lopez, D.L.**, and Farley, M. Mass Retention and Transport Along a Successive Alkalinity Producing System that Remediate Acid Mine Drainage. Proceedings of the National Association of Abandoned Mine Lands Annual Conference, August 19-22, 2001, Athens, Ohio.
- López, Dina L.**, Overly, Bryan, Robbins, Eleanor I., and Carroll, Kenneth, 1999. The role of flow regime on the chemical evolution of acidic waters discharged from an abandoned underground coal mine. *In Sudbury 99 Mining and the Environment II, Conference Proceedings*, Sudbury, Ontario, Canada, September 12-16, 1999, Vol. 1, pp. 89-98.
- Pigati, Eric, and **López, Dina L.**, 1999. Effect of subsidence on recharge at abandoned coal mines generating acidic drainage: The Majestic Mine, Athens County, Ohio. *Mine Waters and the Environment*, Vol. 18, No. 1, 45-66.
- López, Dina L.**, Cobb, Mark C., Golding, Sue, and Glikson, Miryam, 1999. Modeling hydrothermal maturation of coal and generation of coal seam gas. *In Coalbed Methane: Scientific, Environmental and Economic Evaluation*, Matalerz, M., Glikson, M., Golding, S.D. (editors), pp. 423-434.
- Cobb, Mark C., **López, Dina L.**, Glikson, Miryam, and Golding, Sue. 1999. Simulating the conductive and hydrothermal maturation of coals and coal seam gas in the Bowen Basin, Australia. *In Coalbed Methane: Scientific, Environmental and Economic Evaluation*, Matalerz, M., Glikson, M., Golding, S.D. (editors), pp. 435-448.
- Stoertz, Mary, and **López, Dina L.**, 1998. Acid Mine Drainage in Southeastern Ohio, Guidebook No. 17, Ohio Department of Natural Resources, Division of Geological Survey, Preprint prepared for the 1998 North-Central Section meeting of the Geological Society of America. Columbus, 44 pp.
- López, D.L.**, Smith, L., and Beckie, R., 1997. Modeling water flow in waste rock piles using kinematic wave theory, Proceedings Fourth International Conference on Acid Rock Drainage, Vancouver, B.C., Canada, pp. 497-514.

- López, D.L.**, and Smith, L., 1996. Fluid flow in fault zones: Influence of hydraulic anisotropy and heterogeneity on the fluid flow and heat transfer regime, *Water Resour. Res.*, vol. 32, pp. 3227-3235.
- Smith, L., **López, D.L.**, Beckie, R., Morin, K., Dawson, R., and Price, W., 1995, Hydrogeology of Waste Rock Piles, *Department of Natural Resources Canada CANMET*, 130 pp.
- López, D. L.**, and Smith, J. L., 1995. Fluid flow in fault zones: Analysis of the interplay of convective circulation and topographically-driven groundwater flow. *Water Resour. Res.* v. 31 , pp. 1489-1503.
- López, D. L.**, Smith, L., and Sorey, M.L. 1994. Modeling fluid flow and heat transfer at Basin and Range faults: Preliminary results for Leach Hot Springs, Nevada. *Geothermal Resources Transactions*, Vol. 18, 11-16.

Hydrothermal Systems

- López, D.L.**, Bundschuh, J., Soto, G.J., Fernández, J.F., and Alvarado, G.E., (Accepted), Chemical evolution of thermal springs at Arenal volcano, Costa Rica: Effect of volcanic activity, precipitation, seismic activity, and earth tides. *Journal of Volcanology and Geothermal Research*.
- Lopez, D.L.**, Padron, E., Magaña, M.I., Gómez, L., Barrios, L.A., Pérez, N.M. and Hernández, P. 2004. Structural Control on Thermal Anomalies and Diffuse Surficial Degassing at Berlín Geothermal Field, El Salvador. *Geothermal Resources Council Transactions*, Vol. 28, p. 477-483.
- Magaña, M.I., **Lopez, D.L.**, Barrios, L.A., Pérez, N.M., Padron, E., and Henríquez, E., 2004. Diffuse and Convective Degassing of Soil Gases and Heat at the TR-6-Zapotillo Hydrothermal Discharge Zone, Berlín Geothermal Field, El Salvador. *Geothermal Resources Council Transactions*, Vol. 28, p. 485-488.
- Lopez D.L.**, Ransom, L., Perez, N., Hernandez, P. and Monterrosa, J., 2004. Dynamics of diffuse degassing at Ilopango Caldera, El Salvador. Rose, W.I., Bommer, J.J., **López, D.L.**, Carr, M.J., and Major, J.J. editors, *Geological Society of America Special Paper No. 375 "Natural Hazards in El Salvador"*, pp. 191-202.
- Cartagena, R., Olmos, R., **López D.L.** Soriano, T., Barahona, F., Hernández, P. and Perez, N., 2004. Diffuse soil degassing of carbon dioxide, radon, and mercury at San Miguel Volcano, El Salvador. Rose, W.I., Bommer, J.J., **López, D.L.**, Carr, M.J., and Major, J.J. editors, *Geological Society of America Special Paper No. 375 "Natural Hazards in El Salvador"*, pp. 203-212.
- Salazar, J.M.L., Hernández, P.A., Pérez, N.M., Rodolfo Olmos, Barahona, F., Cartagena, R., Soriano, T., **Lopez, D.L.**, and Notsu, K., 2004. Spatial and temporal variations of diffuse CO₂ degassing at Santa Ana-Izalco-Coatepeque volcanic complex, El Salvador, Central America. Rose, W.I., Bommer, J.J., **López, D.L.**, Carr, M.J., and Major, J.J. editors, *Geological Society of America Special Paper No. 375 "Natural Hazards in El Salvador"*, pp. 135-146.
- Pérez, N.M., Salazar, J.M.L., Hernández, P.A., Olmos, R., Barahona, F., Cartagena, R., Soriano, T., **Lopez, D.L.**, and Notsu, K., 2004. Diffuse CO₂ and ²²²Rn degassing from San Salvador volcano, El Salvador, Central America. Rose, W.I., Bommer, J.J., **López,**

- D.L.**, Carr, M.J., and Major, J.J. editors, Geological Society of America Special Paper No. 375 "Natural Hazards in El Salvador", pp. 227-236.
- Magaña, M.I., Henríquez, E., and **López, D.**, 2003. Study on diffuse degassing and alteration mineralogy in the Berlin Geothermal Field. Proceedings of the International Geothermal Conference, Reykjavík, Sept. 2003, pp. 33- 39.
- Padrón, E., López, D.L., Magaña, M.I., Marrero, R., and Pérez, N.M., 2003. Diffuse degassing and relation to structural flow paths at Ahuachapan Geothermal Field, El Salvador. *Geothermal Resources Council Transactions*, vol. 27, pp. 325-330.
- Salazar, J.M.I., Pérez, N.M., Hernández, P.A., Soriano, T., Barahona, F., Olmos, R., Cartagena, R., **López, D.L.**, Lima, N., Melián, G., Castro, L., Galindo, I., and Notsu, K., 2002. Precursory diffuse carbon dioxide soil degassing signatures of recent earthquakes in El Salvador, Central America. *Earth and Planetary Sciences Letters*. , Vol. 205, p. 81-89.
- Magaña, M.I., **López, D.L.**, Tenorio, J., and Matus, A., 2002. Radon and carbon dioxide diffuse soil degassing at Ahuachapan Geothermal Field, El Salvador. *Geothermal Resources Transactions*, Vol. 26, p. 341-344.
- López, D. L.**, and Williams, S. N., 1993. Catastrophic volcanic collapse: relation to hydrothermal processes. *Science*, Vol. 260, 1794-1796.
- Williams, S. N., Schaefer, S.J., Calvache, M.L., and **Lopez, D.**, 1992. Global carbon dioxide emission to the atmosphere by volcanoes. *Geochim. Cosmochim. Acta* 56, 1765-1770.

Thesis Directed

- Clinton, Timothy, Natural versus anthropogenic remediation of acid mine drainage in southeast Ohio: an assessment of water and sediment chemistry, M. Sc. In Geology, 2005.
- Ruiz, Victoria, Diffuse soils degassing at abandoned underground coal mines. M. Sc. in Geology, 2003.
- Soto, Yomari, The impact of the Fajardo Municipal Landfill on Fajardo River, Puerto Rico. M. Sc. in Geology, 2003.
- Kudel, David. Investigation of heavy metal contamination in Ilopango Lake, El Salvador, Central America, M. Sc. in Environmental Sciences, 2003.
- Ransom, Loretta, Volcanic diffuse soil degassing and lake chemistry of the Ilopango Caldera system, El Salvador, Central America, M.Sc. in Geology, 2002.
- Doe, Carol F., Hydrological and thermal mechanisms in a burning coal refuse pile: The Misco gob pile, Perry County, Ohio, M. Sc. in Geology, 2001.

Shimala, Jennifer, Hydrogeochemical characterization of the Carbondale wetland, Athens County, Ohio: Evaluation of acid mine drainage remediation alternatives. M.Sc. in Geology, 2000.

Carroll, Kenneth C., The transport and fate of acid mine drainage along the Snowfork flowpath in the Monday Creek watershed, Southeastern Ohio, M. Sc. in Geology, 1999.

Hunt, Kristy, The characterization of groundwater flow and trichloroethylene transport in the West Lafayette, Ohio wellfield (Using three dimensional modeling techniques), M.Sc. in Geology, 1999.

Prim, Debra, The effect of acid mine drainage on sedimentation processes and water quality at Lake Hope, Lake Hope State Park, Vinton County, Ohio, M.Sc. in Geology, 1999.

Pigati, Eric. The Hydrology and Geochemistry of an Abandoned Underground Coal Mine: The Majestic Mine, Athens County, Ohio, M.Sc. in Geology, 1997.

Overly, Bryan. The Chemical and Microbiological Variability of Acid Mine Drainage Affecting the Snow Fork Drainage Basin, Ohio: the Essex Underground Mine, M.Sc. in Environmental Studies, 1997.

McCutcheon, Molly, Anthropogenic and volcanic pollution at Coatepeque Lake, El Salvador. Molly McCutcheon, Senior Thesis, B.Sc. in Geology, 1998.

PAPERS PRESENTED:

López, D.L., Hollenkamp, C., Gierlowski-Kordesch, E., 2005. Variability of heavy metal concentrations in a lake affected by acid mine drainage. 10th International Symposium on the Interactions between Sediments and Water. Bled, Slovenia, August 28-September 2, 2005.

López, D.L., Salazar, P., Hernandez, P., Marrero, R, and Perez, N.M., 2004. Tidal Modulation of Diffuse CO₂ Degassing and Seismic Activity at Teide Volcano, Tenerife, Canary Islands. *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract V13D-02.

Clinton, T., and **López, D.L.**, 2004. Natural Versus Anthropogenic Remediation of Streams Impacted by Acid Mine Drainage in Southeast Ohio. *Eos Trans. AGU*, 85(47), Fall Meet. Suppl., Abstract H53A-1207.

López, D.L., Perez, N.M., Padrón, E. and Marrero, R., Diffuse soil degassing along permeable faults at Ahuachapan and Berlin Geothermal Fields, El Salvador, 32nd International Geological Congress, Florence, Italy, August 20-28, 2004.

Lopez, D.L., Perez, N., and Marrero, R., Energy released at Teide Volcano, Tenerife, Canary Islands. American Geophysical Union Fall Meeting, San Francisco, California, Dec. 12-15, 2003.

- Marrero, R., **Lopez, D.L.**, and Perez, N., Fluid-rock interaction at Las Cañadas aquifer, Tenerife, Canary Islands. American Geophysical Union Fall Meeting, San Francisco, California, Dec. 12-15, 2003.
- Lopez, D.L.**, and Ruiz, V., 2003. Diffuse soil degassing from abandoned underground coal mines. Joint meeting of the European Geological Society-American Geophysical Union-European Union of Geoscience Joint Assembly, Nice, France, April, 2003.
- D. L. López**, C. Doe, B. Stuart, and M. Stoertz, Chemical and thermal variations in seeps discharged from a burning coal refuse pile, American Geophysical Union Fall Meeting, San Francisco, Dec. 5-12, 2002.
- V. Ruiz, and **D.L. López**, Diffuse Soil Degassing of Radon and Mercury from Abandoned Underground Coals Mines in Southeastern Ohio, American Geophysical Union Fall Meeting, San Francisco, Dec. 5-12, 2002.
- N. Perez, J. Salazar, P. Hernandez, T. Soriano, T., F. Barahona, R. Cartagena, R. Olmos, and **D. Lopez**, Anomalous Change of Diffuse CO₂ Emission Rates at San Salvador volcano, El Salvador, Central America: a premonitory geochemical signature of magmatic and/or tectonic reactivation? American Geophysical Union Fall Meeting, San Francisco, Dec. 5-12, 2002.
- López, Dina L.**, and Shimala, Jennifer R., Seasonal impact of acid mine drainage from abandoned underground coal mines, Annual North-Central Meeting of the Geological Society of America, Lexington, Kentucky, April 2002.
- Magaña, M.I., **López, D.L.**, Tenorio, J., and Matus, A., Radon and carbon dioxide diffuse soil degassing at Ahuachapan Geothermal Field, El Salvador. *Geothermal Resources Council Meeting*, Reno, Nevada, September 22-25, 2002.
- López, D. L.**, 2002. On the interpretation of conductive heat flow anomalies near fault zones. *Geothermal Resources Council Meeting*, Reno, Nevada, September 22-25, 2002.
- Doe, C., **Lopez, D.**, Stuart, B., and Stoertz, M. Hydrological and Thermal Processes in a Burning Coal Refuse Pile: The Misco Gob Pile, Perry County, Ohio. . National Association of Abandoned Mine Lands Annual Conference, August 19-22, 2001, Athens, Ohio.
- Ransom, L., **Lopez, D.L.**, and Hernandez, P., Diffusive Soil Degassing of Radon and Carbon Dioxide at Ilopango Caldera, El Salvador, Central America. *Eos Trans. AGU*, 82(47), Fall Meet. Suppl., Abstract V42B-1014, 2001
- Lopez, D.L.**, Olmos, R., Cartagena, R., Soriano, T., and Barahona, F. Diffusive Soil Degassing of Radon and Carbon Dioxide at San Miguel Volcano, El Salvador, Central America. *Eos Trans. AGU*, 82(47), Fall Meet. Suppl., Abstract V42B-1013, 2001.
- Olmos, R., Barahona, F., Cartagena, R., Soriano, T., Salazar, J., Perez, N., Notsu, K., and **Lopez, D.** Diffuse Carbon Dioxide Degassing Monitoring at Santa Ana-Izalco-Coatepeque Volcanic System, El Salvador, Central America. *Eos Trans. AGU*, 82(47), Fall Meet. Suppl., Abstract V31A-0949, 2001.
- Salazar, J., Hernandez, P., Perez, N., Barahona, F., Olmos, R., Cartagena, R., Soriano, T., Notsu, K., and **Lopez, D.** Anomalous Diffuse CO₂ Emission Changes at San Vicente Volcano Related to Earthquakes in El Salvador, Central America. *Eos Trans. AGU*, 82(47), Fall Meet. Suppl., Abstract V42B-1011, 2001.

- Castro, L., Salazar, J., Hernandez, P., Perez, N., and **Lopez, D.** Dissolved gas ^{222}Rn , ^{220}Rn and $^{220}\text{Rn}/^{222}\text{Rn}$ in the Ground Water System of Las Cañadas, Tenerife, Canary Islands. *Eos Trans. AGU*, 82(47), Fall Meet. Suppl., Abstract V31A-0945, 2001.
- López, D.L.**, and Prim, D., 2000. Evolution of the chemical composition of water and sediments in a lake affected by acid mine drainage. 31st International Geological Congress, Brazil 2000, August 6-17,2000.
- Lopez, D. L.**, Shimala, J. R., Farley M., 2000. Seasonal Variations in Chemical Loadings and Removal Rates at a Wetland Constructed to Remediate Acid Mine Drainage: the Carbondale Wetland, Athens County, Ohio. AGU Spring Meeting, Washington D.C., *EOS Transactions American Geophysical Union*, vol. 81, No. 19, pp. S197.
- Doe, C. F., **Lopez, D.L.**, Stoertz, M., Stuart, B., 2000. Thermal Studies in a Burning Coal Refuse Pile: The Misco Gob Pile, Perry County, Ohio. AGU Spring Meeting, Washington D.C., *EOS Transactions American Geophysical Union* , vol. 81, No. 19, pp. S251.
- Laverty, B., Stoertz, M.W., Painter, M., Green, D.H., **Lopez, D.L.**, 2000. Acidity generation from a reclaimed coal tailings pile: critical role of surficial hydrology, geology, and redox conditions. AGU Spring Meeting, Washington D.C., *EOS Transactions American Geophysical Union* , vol. 81, No. 19, pp. S232.
- Shimala, J. R., **Lopez, D. L.**, Farley M, 2000. Water Chemistry Variations Within an Experimental Successive Alkalinity Producing System: a Remediation Alternative for the Carbondale Wetland, Athens County, Ohio. AGU Spring Meeting, Washington D.C., *EOS Transactions American Geophysical Union* , vol. 81, No. 19, pp. S197
- Perez, N.M., Salazar, J.M., **Lopez, D.L.**, Hernandez, P., and Soriano, T., Diffuse degassing of carbon dioxide from San Salvador volcano, El Salvador, Central America, American Geophysical Union, Fall Meeting, San Francisco, Dec. 13-17, 1999.
- López, Dina L.**, Overly, Bryan, Robbins, Eleanora I., and Carroll, Keneth, The role of flow regime on the chemical evolution of acidic waters discharged from an abandoned underground coal mine. *Sudbury 99 Mining and the Environment II*, Sudbury, Ontario, Canada, September 12-16, 1999
- López, Dina L.**, Cobb, Mark, Glikson, Myriam, and Golding, Sue D. The Role of Fluid Circulation in the Maturation of Coal and Generation of Coalseam Gas and Oil in the Bowen Basin, Australia. American Geophysical Union Fall Meeting, San Francisco, California, December 6-10, 1998.
- McCutcheon, Molly C., and **López, Dina L.**, Anthropogenic and Volcanic Pollution in Coatepeque Lake, El Salvador, Central America. American Geophysical Union Fall Meeting, San Francisco, California, December 6-10, 1998.
- López, Dina L.**, Hernández, Jeannette, and Sagastizado, Mario, Anthropogenic and volcanic pollution at Ilopango lake, El Salvador. 18th International Symposium of the North American Lake Management Society (NAMLS), Nov. 10-13, 1998.
- López, Dina L.**, Cobb, Mark C., Golding, Sue, and Glikson, Miryam. Modeling hydrothermal maturation of coal and generation of coal seam gas. International Conference on Coal Seam Gas and Oil, Brisbane, Australia, 23-25 March, 1998.

- Overly, Bryan, and **López, Dina L.** Physical, chemical, and biological controls in the water composition and mineral precipitation along the flow path of acid waters discharged from an underground coal mine: the Esco No. 40 Mine, Hocking County, Ohio. 1998 GSA North-Central Meeting, Columbus, Ohio, March 19-20, 1998.
- Carroll, Keneth, and **López, Dina L.** Modeling solute transport in acid mine drainage: The Esco No. 40 Mine, Hocking County, Ohio. 1998 GSA North-Central Meeting, Columbus, Ohio, March 19-20, 1998.
- Cobb, Mark C., **López, Dina L.**, Glikson, Miryam, and Golding, Sue. Simulating the conductive and hydrothermal maturation of coals and coal seam gas in the Bowen Basin, Australia. International Conference on Coal Seam Gas and Oil, Brisbane, Australia, 23-25 March, 1998.
- Smith, L., and **Lopez, D.L.** Coupled models of groundwater flow and heat transport. GSA Penrose Conference on Faults and Subsurface Flow: Fundamental Applications to Hydrogeology and Petroleum Geology, Taos, New Mexico, September 10-15, 1997.
- López, D.L.**, Smith, L., and Sorey, M.L. Modeling fluid flow and heat transfer in Basin and Range faults, GSA Penrose Conference on Faults and Subsurface Flow: Fundamental Applications to Hydrogeology and Petroleum Geology, Taos, New Mexico, September 10-15, 1997.
- López, D.L.**, Santamaria, J.R., Sagastizado, M.E., and Hernández, J. de, "Seasonal Variations in Water Chemistry and Thermal Regime at a Tropical Volcanic Lake: Ilopango, El Salvador", paper presented at the Chapman Conference (AGU) on "Crater Lakes, Terrestrial Degassing and Hyper-acid Fluids in the Environment", Crater Lake, Oregon, September 4-9, 1996.
- López, D. L.**, Smith, J. L., and Sorey, M. "Fluid flow and heat transfer within connected, range-bounding faults: A possible example at Leach Hot Springs, Nevada", *EOS Transactions American Geophysical Union* (1995), AGU meeting, San Francisco, December, 1995.
- López, D. L.**, Smith, J. L., and Sorey, M. Modeling fluid flow and heat transfer at Basin and Range faults; Preliminary results for Leach Hotsprings. GRC annual meeting, Salt Lake City, Utah, October, 1994.
- López, D. L.**, and Williams, S. N.. Catastrophic volcanic collapse: relation to hydrothermal processes, Geological Association of Canada Annual Meeting, Edmonton, 1993.
- López, Dina L.**, Williams, Stanley N., and Hanor, Jeffrey S., The hydrothermal system of Nevado del Ruiz volcano, Colombia. Penrose Conference on "Fluid-Volcano Interactions", Oregon, October, 1992.
- López, Dina L.**, Williams, Stanley N., and Hanor, Jeffrey S., Simulation of fluid-rock interactions at the Nevado del Ruiz volcano hydrothermal system, Colombia. Fall Annual Meeting of the American Geophysical Society, San Francisco, 1991, EOS, vol. 72, No. 44, p. 551.