CURRICULUM VITAE
JOHN J. KELLY

Loyola University Chicago
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PROFESSIONAL INTERESTS

- Microbial Ecology
- Environmental Microbiology
- Molecular Biotechnology

EDUCATION

Ph.D. (1998) Rutgers, The State University of New Jersey, New Brunswick, NJ
Department of Environmental Sciences

M.S. (1995) Rutgers, The State University of New Jersey, New Brunswick, NJ
Department of Environmental Sciences

B.A. (1990) Dartmouth College, Hanover, NH
Major: Biology

PRINCIPAL POSITIONS HELD

2022 – current Chairperson
Department of Biology
Loyola University Chicago, Chicago, IL

2013 – current Professor
Loyola University Chicago, Chicago, IL
Department of Biology

2013 – 2022 Associate Chairperson
Department of Biology
Loyola University Chicago, Chicago, IL

2007 – 2013 Associate Professor
Department of Biology
Loyola University Chicago, Chicago, IL

2001 – 2007 Assistant Professor
Department of Biology
Loyola University Chicago, Chicago, IL

1998 – 2001 Postdoctoral Fellow
Department of Civil and Environmental Engineering
Northwestern University, Evanston, IL

1993 – 1998 Graduate Research Assistant
Department of Environmental Sciences
Rutgers, The State University of New Jersey, New Brunswick, NJ

PROFESSIONAL APPOINTMENTS

2021 – current Review Editor
Frontiers in Microbiology

2003 – current Adjunct Faculty
Department of Microbiology and Immunology
Loyola University Medical Center, Maywood, IL

2013 – 2025 Editorial Board
FEMS Microbiology Ecology

2021 – 2023 Guest Editor
FEMS Microbiology Ecology
Thematic Issue: “Biofilms”

2014 – 2023 Academic Editor
PLOS One

2016 – 2019 Co-Principal Investigator
Baltimore Ecosystem Study

2016 – 2018 Associate Editor
Journal of Environmental Quality

2004 – 2017 Editorial Board
Applied and Environmental Microbiology

2013 – 2016 Guest Editor
Frontiers in Microbiology
Special Topic “Linking Ecosystem Function to Microbial Diversity”

AWARDS AND HONORS

- Loyola University Chicago, Sujack Award for Faculty Teaching Excellence 2019
- Loyola University Chicago, Provost's Award for Excellence in Teaching Freshmen 2015

- Loyola University Chicago, Sujack Award for Faculty Research Excellence 2013
- Chicago Area Undergraduate Research Symposium, Award for Support of Undergraduate Research 2006

PROFESSIONAL AFFILIATIONS

- American Association for the Advancement of Science
- American Society for Microbiology
- International Society for Microbial Ecology
- Society for Freshwater Science

AD-HOC REVIEWER

Applied Soil Ecology, Applied Microbiology and Biotechnology, Aquatic Toxicology, Biogeochemistry, Biological Reviews, Canadian Journal of Microbiology, Chemosphere, Ecohydrology, Ecology Letters, Ecosystems, Ecotoxicology, Environmental Microbiology, Environmental Microbiology Reports, Environmental Microbiome, Environmental Pollution, Environmental Science and Pollution Research, Environmental Science & Technology, Environmental Science & Technology Letters, Environmental Science: Processes & Impacts, Environmental Systems Research, FEMS Microbiology Ecology, FEMS Microbiology Letters, Freshwater Biology, Freshwater Science, Frontiers in Earth Science, Frontiers in Marine Science, Frontiers in Microbiology, International Journal of Microbiology, ISME Journal, Journal of Applied Microbiology, Journal of Bacteriology, Journal of Basic Microbiology, Journal of Environmental Management, Journal of Environmental Quality, Nature Communications, Limnology and Oceanography, Limnology and Oceanography Letters, Microbial Ecology, mBio, Molecular Ecology, Plant and Soil, PLoS ONE, Reviews of Environmental Contamination and Toxicology, Science of the Total Environment, Scientific Reports, Soil Science, Water Research, Wetlands

GOOGLE SCHOLAR PROFILE:

https://scholar.google.com/citations?user=0BTS418AAAAJ&hl=en

PUBLICATIONS

- Lorentz, B, M Rauhauser, R Krantz, DD Snow, JJ Kelly. 2025. Treated wastewater effluent increases pharmaceutical concentrations and alters benthic microbial communities in streams. *Frontiers Microbiol* 16: p.1649739.
- Berg, EM, S Speir, AJ Shogren, MM Dee, AES Vincent, JL Tank, **JJ Kelly**, TJ Hoellein. 2025. Transport and retention of microplastic fibers in streams are impacted by benthic algae, discharge, and substrate. *Limnol Oceanog* 70: 1093-1107.
- Berg, EM, DK Dila, O. Schaul, A. Eros, SL McLellan, RJ Newton, TJ Hoellein, **JJ Kelly**. 2024. Anthropogenic particle concentrations and fluxes in an urban river are temporally variable and impacted by storm events. *Water Environ Res* 96: e11021.

- Lazcano, RF, **JJ Kelly**, TJ Hoellein. 2024. Biofilms on plastic litter in an urban river: Community composition and activity vary by substrate type. *Water Environ Res* 96: e11008
- Chaudhary, A, ST Dunn, **JJ Kelly**, TJ Hoellein. 2022. Plastic microbiome development in a freshwater ecosystem. *Sci Tot Environ* 848: 157697.
- Vincent, AES, A Chaudhary, **JJ Kelly**, TJ Hoellein. 2022. Biofilm assemblage and activity on plastic in urban streams at a continental scale: Site characteristics are more important than substrate type. *Sci Total Environ* 835: 155398.
- Rosi, E, M Fork, T Hoellein, **JJ Kelly**, E Richmond. 2022. Inputs, Occurrence and Effects of Pharmaceuticals and Microplastics in Freshwater Ecosystems. *Encyclopedia of Inland Waters*, 2nd edition, vol. [2], pp. 471-481. Oxford: Elsevier.
- **Kelly, JJ**, MG London, AR McCormick, M Rojas, JW Scott, TJ Hoellein. 2021. Wastewater treatment alters microbial colonization of microplastics. *PLoS ONE* 16(1): e0244443.
- **Kelly, JJ**, MG London, N Oforji, A Ogunsola, TJ Hoellein. 2020. Microplastic selects for convergent microbiomes from distinct riverine sources. *Freshwater Science* 39: 281–291.
- Griffin, JS, LA Haug, VA Rivera, LM Hernandez Gonzalez, **JJ Kelly**, WM Miller, GF Wells, AI Packman. 2020. Soil hydrology drives ecological niche differentiation in a native prairie microbiome. *FEMS Microbiol Ecol* 96: fiz163.
- Meschewski, E, N Holm, BK Sharma, K Spokas, N Minalt, **JJ Kelly**. 2019. Pyrolysis biochar has negligible effects on soil greenhouse gas production, microbial communities, plant germination, and initial seedling growth. *Chemosphere* 228: 565-576.
- Hoellein TJ, AJ Shogren, JL Tank, P Risteca, **JJ Kelly**. 2019. Microplastic deposition velocity in streams follows patterns for naturally occurring allochthonous particles. *Scientific Reports* 9:3740.
- Keyport S, BD Carson, O Johnson, BA Lawrence, SC Lishawa, NC Tuchman, **JJ Kelly**. 2019. Effects of experimental harvesting of an invasive hybrid cattail on wetland structure and function. *Restoration Ecology* 27: 389-398.
- McNeish, RE, LH Kim, HA Barrett, SA Mason, **JJ Kelly**, TJ Hoellein. 2018. Microplastic in riverine fish is connected to species traits. *Scientific Reports* 8: 11639.
- Volesky, LA, S Iqbal, **JJ Kelly**, P. Geddes. 2018. Relationships of native and exotic strains of *Phragmites australis* to wetland ecosystem properties. *Wetlands* 38: 577–589.
- Rosi, EJ, HA Bechtold, D Snow, M Rojas, AJ Reisinger, **JJ Kelly**. 2018. Urban stream microbial communities show resistance to pharmaceutical exposure. *Ecosphere* 9(1) e02041.
- Craig, LS, JD Olden, AH Arthington, S Entrekin, CP Hawkins, **JJ Kelly**, TA Kennedy, BM Maitland,EJ Rosi, AH Roy, DL Strayer, JL Tank, AO West, MS Wooten. 2017. Meeting the challenge of interacting threats in freshwater ecosystems: A call to scientists and managers. *Elem Sci Anth* 5:72.
- Richmond, EK, MR Grace, **JJ Kelly**, AJ Reisinger, EJ Rosi, DM Walters. 2017. Pharmaceuticals and personal care products (PPCPs) are ecological disrupting compounds (EcoDC). *Elem Sci Anth 5: 66*.

- Griffin, JS, N Lu, N Sangwan, A Li, M Dsouza, T Sevilla, A Culotti, AJ Stumpf, LL Keefer, **JJ Kelly**, JA Gilbert, GF Wells, AI Packman. 2017. Microbial diversity in an intensively managed landscape is structured by landscape connectivity. *FEMS Microbiol Ecol* 93: fix120.
- Hoellein, TJ, AR McCormick, J Hittie, MG London, JW Scott, **JJ Kelly**. 2017. Longitudinal patterns of microplastic concentration and bacterial assemblages in surface and benthic habitats of an urban river. *Freshwater Science* 36: 491-507.
- Hartzog, PE, M Sladek, **JJ Kelly**, DJ Larkin. 2017. Bottle effects alter taxonomic composition of wetland soil bacterial communities during the denitrification enzyme activity assay. *Soil Biol Biochem* 110: 87–94.
- McCormick, AR, TJ Hoellein, MG London, J Hittie, JW Scott, **JJ Kelly**. 2016. Microplastic in surface waters of urban rivers: concentration, sources, and associated bacterial assemblages. *Ecosphere* 7(11) e01556.
- Lee, SS, AM Paspalof, DD Snow, EK Richmond, EJ Rosi-Marshall, **JJ Kelly**. 2016. Occurrence and potential biological effects of amphetamine on stream communities. *Environ Sci Technol* 50: 9727-9735.
- Bernhard, AE, **JJ Kelly**. 2016. Editorial: Linking Ecosystem Function to Microbial Diversity. *Frontiers Microbiol* 7:1041.
- Binh, CTT, E Adams, E Vigen, T Tong, MA Alsina, J-F Gaillard, KA Gray, C Peterson, **JJ Kelly**. 2016. Chronic addition of a common engineered nanomaterial alters biomass, activity and composition of stream biofilm communities. *Environ Sci: Nano*. 3: 619-620.
- Costello DM, EJ Rosi-Marshall, LE Shaw, MR Grace, **JJ Kelly**. 2016. A novel method to assess the effects of chemical stressors on natural biofilm structure and function. *Freshwater Biol* 61: 2129-2140.
- Ozaki, A, E Adams, CTT Binh, T Tong, J-F Gaillard, KA Gray, **JJ Kelly**. 2016. One-time addition of nano-TiO_2 triggers short-term responses in benthic bacterial communities in artificial streams. *Microb Ecol* 71: 266–275.
- Tong T, CM Wilke, J Wu, CTT Binh, **JJ Kelly**, J-F Gaillard, KA Gray. 2015. Combined toxicity of nano-ZnO and nano-TiO_2: From single- to multi-nanomaterials systems. *Environ Sci Technol* 49: 8113-8123.
- Mikita RA, **JJ Kelly**, RL Tate. 2015. Wildfire effects on the properties and microbial community structure of organic horizon soils in the New Jersey Pinelands. *Soil Biol Biochem* 86: 67-76.
- Binh CTT, CG Peterson, T Tong, J-F Gaillard, KA Gray, **JJ Kelly**. 2015. Comparing acute effects of a nano-TiO_2 pigment on cosmopolitan freshwater phototrophic microbes using high-throughput screening. PLoS ONE 10(4): e0125613.
- Rosi-Marshall EJ, and **JJ Kelly**. 2015. Antibiotic stewardship should consider environmental fate of antibiotics. *Environ Sci Technol* 49: 5257–5258.
- Tong T, AN Hill, MA Alsina, J Wu, KY Shang, **JJ Kelly**, KA Gray, J-F Gaillard. 2015 Spectroscopic characterization of TiO_2 polymorphs in wastewater treatment and sediment samples. *Environ Sci Technol Letters* 2: 12−18.
- McCormick A, TJ Hoellein, SA Mason, J Schluep, **JJ Kelly**. 2014. Microplastic is an abundant and distinct microbial habitat in an urban river. *Environ Sci Technol* 48: 11863–11871.

- Binh CTT, T Tong, J-F Gaillard, KA Gray, **JJ Kelly**. 2014. Acute effects of TiO_2 nanomaterials on the viability and taxonomic composition of aquatic bacterial communities assessed via high-throughput screening and next generation sequencing. *PLoS ONE* 9(8): e106280.
- Tong T, K Fang, SA Thomas, **JJ Kelly**, KA Gray, J-F Gaillard. 2014. Chemical interactions between nano-ZnO and nano-TiO_2 in a natural aqueous medium. *Environ Sci Technol* 48: 7924-7932.
- Hoellein T, M Rojas, A Pink, J Gasior, **JJ Kelly**. 2014. Anthropogenic litter in urban freshwater ecosystems: distribution and microbial interactions. *PLoS ONE* 9(6): e98485.
- **Kelly JJ**, N Minalt, A Culotti, M Pryor, A Packman. 2014. Temporal variations in the abundance and composition of biofilm communities colonizing drinking water distribution pipes. *PLoS ONE* 9(5): e98542.
- Geddes P, T Grancharova, **JJ Kelly**, D Treering, NC Tuchman. 2014. Effects of invasive *Typha x glauca* on wetland nutrient pools, denitrification, and bacterial communities are influenced by time since invasion. *Aquat Ecol* 48: 247-258.
- Binh CTT, T Tong, J-F Gaillard, KA Gray, **JJ Kelly**. 2014. Common freshwater bacteria vary in their responses to short-term exposure to nano-TiO_2. *Environ Toxicol Chem* 33: 317–327.
- Tong T, A Shereef, J Wu, CTT Binh, **JJ Kelly**, J-F Gaillard, KA Gray. 2013. Effects of material morphology on the phototoxicity of nano-TiO_2 to bacteria. *Environ Sci Technol* 47: 12486–12495.
- Drury B, J Scott, EJ Rosi-Marshall, **JJ Kelly**. 2013. Triclosan exposure increases triclosan resistance and influences taxonomic composition of benthic bacterial communities. *Environ Sci Technol* 47: 8923−8930.
- Rosi-Marshall EJ, D Kincaid, H Bechtold, TV Royer, M Rojas, **JJ Kelly**. 2013. Pharmaceuticals suppress algal growth and microbial respiration and alter bacterial communities in stream biofilms. *Ecol Appl* 23: 583-593.
- Tong T, CTT Binh, **JJ Kelly**, J-F Gaillard, KA Gray. 2013. Cytotoxicity of commercial nano-TiO_2 to Escherichia coli assessed by high-throughput screening: Effects of environmental factors. *Water Res* 47: 2352-2362.
- Drury B, E Rosi-Marshall, **JJ Kelly**. 2013. Wastewater treatment effluent reduces the abundance and diversity of benthic bacterial communities in urban and suburban rivers. *Appl Environ Microbiol* 79: 1897-1905.
- **Kelly JJ**, E Peterson, J Winkelman, TJ Walter, ST Rier, NC Tuchman. 2013. Elevated atmospheric CO2 impacts abundance and diversity of nitrogen cycling functional genes in soil. *Microbial Ecol* 65: 394-404.
- Kalscheur KN, M Rojas, CG Peterson, **JJ Kelly**, KA Gray. 2012. Algal exudates and stream organic matter influence the structure and function of denitrifying bacterial communities. *Microbial Ecol* 64: 881-892.
- Kalscheur KN, RR Penskar, AD Daley, SM Pechauer, **JJ Kelly**, CG Peterson, KA Gray. 2012. Effects of anthropogenic inputs on the organic quality of urbanized streams. *Water Res* 46: 2515-2524.
- **Kelly JJ**, K Policht, T Grancharova, LS Hundal. 2011. Distinct responses in ammonia-oxidizing archaea and bacteria after addition of biosolids to an agricultural soil. *Appl Environ Microbiol* 77:6551-6558.

- Peterson CG, AD Daley, SM Pechauer, KN Kalscheur, MJ Sullivan, SL Kufta, M Rojas, KA Gray, **JJ Kelly**. 2011. Development of associations between microalgae and denitrifying bacteria in streams of contrasting anthropogenic influence. *FEMS Microbiol Ecol* 77: 477-492.
- **Kelly JJ**, A Bansal, J Winkelman, LR Janus, S Hell, M Wencel, P Belt, KA Kuehn, ST Rier, NC Tuchman. 2010. Alteration of microbial communities colonizing leaf litter in a temperate woodland stream by growth of trees under conditions of elevated atmospheric CO2. *Appl Environ Microbiol* 76: 4950-4959.
- Hoellein TJ, JL Tank, **JJ Kelly**, EJ Rosi-Marshall. 2010. Seasonal variation in nutrient limitation of microbial biofilms colonizing organic and inorganic substrata in streams. *Hydrobiologia* 649: 331–345.
- Kominoski JS, TJ Hoellein, **JJ Kelly**, CM Pringle. 2009. Does mixing litter of different qualities alter stream microbial diversity and functioning on individual litter species? *Oikos* 118: 457-463.
- Baniulyte D, E Favila, **JJ Kelly**. 2009. Shifts in microbial community composition following surface application of dredged river sediments. *Microb Ecol* 57: 160–169.
- **Kelly JJ.** 2009. Application of DNA microarrays to microbial ecology research: history, challenges, and recent developments. *Env Res J* 3: 357-384.
- Ishida CK, S Arnon, CG Peterson, **JJ Kelly**, KA Gray. 2008. Influence of algal community structure on denitrification rates in periphyton cultivated on artificial substrates. *Microb Ecol* 56: 140–152.
- Bavykin SG, VM Mikhailovich, VM Zakharyev, YP Lysov, **JJ Kelly**, OS Alferov, IM Gavin, AV Kukhtin, J Jackman, DA Stahl, D Chandler, AD Mirzabekov. 2008. Discrimination of Bacillus anthracis and closely related microorganisms by analysis of 16S and 23S rRNA with oligonucleotide microarray. *Chem Bio Interact* 171: 212-235.
- **Kelly JJ**, E Favila, LS Hundal, JC Marlin. 2007. Assessment of soil microbial communities in surface applied mixtures of Illinois River sediments and biosolids. *Appl Soil Ecol* 36: 176-183.
- Ishida CK, **JJ Kelly**, KA Gray. 2006. Effects of variable hydroperiods and water level fluctuations on denitrification capacity, nitrate removal, and benthic microbial community structure in constructed wetlands. *Ecol Eng* 28: 363-373.
- Angeloni NL, KJ Jankowski, NC Tuchman, **JJ Kelly**. 2006. Effects of an invasive cattail species (*Typha x glauca*) on sediment nitrogen and microbial community composition in a freshwater wetland. *FEMS Microbiol Lett* 263: 86-92.
- Siripong S, **JJ Kelly**, DA Stahl, BE Rittmann. 2006. Impact of pre-hybridization PCR amplification on microarray detection of nitrifying bacteria in wastewater treatment plant samples. *Env Microbiol* 8: 1564–1574.
- Janus LR, NL Angeloni, J McCormack, ST Rier, NC Tuchman, **JJ Kelly**. 2005. Elevated atmospheric CO_2 alters soil microbial communities associated with trembling aspen (*Populus tremuloides*) roots. *Microb Ecol* 50: 102-109.
- **Kelly JJ**, S Siripong, J McCormack, LR Janus, H Urakawa, S El Fantroussi, PA Noble, L Sappelsa, BE Rittmann, DA Stahl. 2005. DNA microarray detection of nitrifying bacterial 16S rRNA in wastewater treatment plant samples. *Water Res* 39: 3229-3238.

- Bavykin S G , Y P Lysov, V Zakhariev, **JJ Kelly**, J Jackman, DA Stahl, A Cherni. 2004. Use of 16S rRNA, 23S rRNA, and gyrB gene sequence analysis to determine phylogenetic relationships of *Bacillus cereus* group microorganisms. *J Clin Microbiol* 42: 3711-3730.
- **Kelly JJ** 2003. Molecular techniques for the analysis of soil microbial processes: functional gene analysis and the utility of DNA microarrays. *Soil Sci* 168:597-605.
- **Kelly JJ**, M Haggblom, RL Tate. 2003. Effects of heavy metal contamination and remediation on soil microbial communities in the vicinity of a zinc smelter as indicated by analysis of microbial community phospholipid fatty acid profiles. *Biol Fertil Soils* 38:65–71.
- Urakawa H , S El Fantroussi, H Smidt, JC Smoot, EH Tribou, **JJ Kelly**, PA Noble, DA Stahl. 2003. Optimization of single-base-pair mismatch discrimination in oligonucleotide microarrays. *Appl Environ Microbiol* 69: 2848-2856.
- El Fantroussi S, H Urakawa, AE Bernhard, **JJ Kelly,** PA Noble, H Smidt, GM Yershov, DA Stahl. 2003. Direct profiling of environmental microbial populations by thermal dissociation analysis of native ribosomal RNAs hybridized to oligonucleotide microarrays. *Appl Environ Microbiol* 69: 2377-2382.
- **Kelly JJ**, BK Chernov, I Tovstanovsky, AD Mirzabekov, SG Bavykin. 2002. Radical generating coordination complexes as tools for rapid and effective fragmentation and fluorescent labeling of nucleic acids for microchip hybridization. *Analyt Biochem* 311: 103-118.
- Koizumi Y, **JJ Kelly**, T Nakagawa, H Urakawa, S El-Fantroussi, S Al-Muzaini, M Fukui, Y Urushigawa, DA Stahl. 2002. Parallel characterization of anaerobic toluene- and ethylbenzene-degrading microbial consortia by PCR-denaturing gradient gel electrophoresis, RNA-DNA membrane hybridization, and DNA microarray technology. *Appl Environ Microbiol* 68: 3215-3225.
- Urakawa H, PA Noble, S El Fantroussi, **JJ Kelly**, DA Stahl. 2002. Single-base-pair discrimination of terminal mismatches by using oligonucleotide microarrays and neural network analyses. *Appl Environ Microbiol* 68: 235-244.
- **Kelly JJ**, M Haggblom, RL Tate. 1999. Changes in soil microbial communities over time resulting from one time application of zinc: a laboratory microcosm study. *Soil Biol Biochem* 31: (10) 1455-1465.
- **Kelly JJ,** M Haggblom, RL Tate. 1999. Effects of the land application of sewage sludge on soil heavy metal concentrations and soil microbial communities. *Soil Biol Biochem* 31: (10) 1467-1470.
- **Kelly JJ,** RL Tate. 1998. Effects of heavy metal contamination and remediation on soil microbial communities in the vicinity of a zinc smelter. *J Environ Qual* 27: 609-617.
- **Kelly JJ,** RL Tate. 1998. Use of BIOLOG for the analysis of microbial communities from zinc contaminated soils. *J Environ Qual* 27: 600-608.

RESEARCH FUNDING

2/1/2016-5/31/2018	Illinois-Indiana Sea Grant PI: John Kelly, Co-PI: Tim Hoellein (Loyola University Chicago), Sherri Mason (SUNY Fredonia). Title: Identifying Sources of Microplastic Contamination in Lake Michigan. Funds Awarded: $200,000
9/15/2013-10/15/2014	Illinois Sustainable Technology Center (ISTC) PI: John Kelly. Title: Effects of Biochar on Composition of Soil Microbial Communities. Funds Awarded: $13,414
4/1/2011- 3/31/2014	National Science Foundation (NSF) CBET 1067439 PI: John Kelly, Co-PI: Christopher Peterson (Loyola University Chicago). Title: The Unintended Ecological Consequences of Nanomaterials: Effects of Nanotitania in Benthic Systems. Funds Awarded: $242,464
3/1/2010- 3/1/2014	Water Research Foundation (WRF) PI: Aaron Packman (Northwestern University), Co-PI: John Kelly. Title: Characterizing the Interactions Between Pathogens and Biofilms and Their Fate & Transport in Distribution Systems. Funds Awarded: $300,000
3/1/2011-2/28/2012	United States Geological Survey (USGS) PI: John Kelly, Co-PIs: Christopher Peterson (Loyola University) and Kimberly Gray (Northwestern University) Title: Influence of Algal / Bacterial Interactions on Denitrification in Stream Biofilms. Funds Awarded: $22,672
1/15/2011-12/31/2011	Illinois-Indiana Sea Grant (IISG) PI: John Kelly, Co-PIs: Christopher Peterson (Loyola University) and Kimberly Gray (Northwestern University) Impacts of Nanomaterials on Aquatic Microbial Communities Funds Awarded: $10,000
6/1/2009-6/30/2012	Illinois Sustainable Technology Center (ISTC) PI: John Kelly, Co-PIs: Emma Rosi Marshall (Cary Institute of Ecosystem Studies) and Teresa Chow (ISTC) Title: Ecotoxicology of Antimicrobial Pharmaceutical and Personal Care Products in Illinois Rivers and Streams. Funds Awarded: $107,636

8/1/2007-7/31/2011	National Science Foundation (NSF) DEB 0640717 PI: Christopher Peterson (Loyola University Chicago), Co-PIs: John Kelly and Kimberly Gray (Northwestern University) Title: Mediation of Denitrification by Algal/Bacterial Interactions in Stream Periphyton. Funds Awarded: $687,320
9/1/2005-8/31/2009	US Department of Agriculture (USDA) PI: John Kelly Title: Development of Microarray-Based PCR for Analysis of Nitrogen Cycling Functional Guilds in Soil. Funds Awarded: $100,000
5/1/2006-6/30/2007	Illinois Department of Natural Resources (IL-DNR) PI: John Kelly. Title: Impact of Time Since Application on Development of Soil Microbial Communities in Surface Applied River Sediment. Funds Awarded: $5,000
5/1/2005-6/30/2006	Illinois Department of Natural Resources (IL-DNR) PI: John Kelly. Title: Assessment of Soil Microbial Communities in Surface Applied River Sediment. Funds Awarded: $5,000
9/17/2003-8/31/2004	National Science Foundation (NSF) PI: Nancy Tuchman (Loyola University Chicago). John Kelly (Co-PI on Supplemental Funding Request) Title: Elevated Atmospheric CO_2 Alters Plant Detritus Nutritional Quality: Effects on Microbial and Detritivore Food Webs in Aquatic Ecosystems. Supplemental Funds Awarded (Kelly): $27,000
12/1/2002-11/30/2003	Defense Advanced Research Projects Agency (DARPA) PI: Darrell Chandler (Argonne National Lab). Co-PI: John Kelly. Title: Design and Development of Oligonucleotide Probes and PCR Primers for Toxin genes. Funds Awarded (Kelly): $75,000
1/1/2002-11/30/2003	Defense Advanced Research Projects Agency (DARPA) PI: Joany Jackman (Johns Hopkins Univ.). Co-PI: John Kelly. Title: Iterative Testing and Development of Field Portable Biochip Assay. Funds Awarded (Kelly): $125,000

7/1/2001-6/30/2002 Defense Advanced Research Projects Agency (DARPA)
PI: Darrell Chandler (Argonne National Lab). Co-PI: John Kelly.
Project Title: MAGIChip Biosensor Program: Bacterial chip expansion.
Funds Awarded (Kelly): $100,000

PRESENTATIONS

Invited Oral Presentations

- Microbial Interactions with Microplastics in Freshwater Environments. Oral presentation given at School of Freshwater Sciences, **University of Wisconsin Milwaukee**, Milwaukee, WI, March 4, 2024.
- Identifying Sources of Microplastic Contamination in Lake Michigan. Oral presentation given at **Great Lakes Sea Grant** Chemicals of Emerging Concern Research Workshop. April 20, 2022.
- Microbial Interactions with Microplastics in Freshwater Environments. Oral presentation given for the Program on Plastics, Ecosystems, and Public Health, **Northwestern University**. November 16, 2021.
- Microbial Colonization of Microplastics in Wastewater Treatment. Oral presentation given at **Water Environment Federation Technical Exhibition & Conference**, Chicago, IL, October 17, 2021.
- Microbial Interactions with Microplastic in Rivers. Oral presentation given as part of the Emerging Contaminants Short Course hosted by **Marquette University**, Opus College of Engineering, Milwaukee, WI, October 23, 2019.
- Effects of Emerging Contaminants on Microbial Communities in Urban Freshwater Ecosystems. Oral presentation given at **DePaul University,** Department of Biology, Chicago, IL, January 11, 2019.
- Microplastic Microbiomes in Freshwater Ecosystems. Oral presentation given at workshop hosted by Program on Plastics, Ecosystems, and Public Health, **Northwestern University**. October 29, 2018.
- Effects of Emerging Contaminants on Microbial Communities in Urban Freshwater Ecosystems. Oral presentation given at School of Freshwater Sciences, **University of Wisconsin Milwaukee**, Milwaukee, WI, January 10, 2018.
- Benthic Microbial Communities in Urban Streams are Impacted by Anthropogenic Contaminants Linked to Sewage Infrastructure. Oral presentation given at **Navigating the Future of Water Conference***,* Milwaukee, WI, October 19, 2017.
- Effects of Emerging Contaminants on Microbial Communities in Urban Freshwater Ecosystems. Oral presentation given at **Marquette University**, Department of Civil, Construction & Environmental Engineering, Milwaukee, WI, March 22, 2017.
- Microbial Interactions With Emerging Contaminants In Urban Streams. Oral presentation given for the online **MicroSeminar** (microseminar.wordpress.com), October 28, 2016.
- Microplastic Particles Are A Novel and Mobile Habitat For Microorganisms in Freshwater Ecosystems. Oral presentation given at the **University of Michigan**, Department of Civil and Environmental Engineering, Ann Arbor, MI, April 8, 2016.

- Microplastic Particles Are A Novel and Mobile Habitat For Microorganisms in Freshwater Ecosystems. Oral presentation given at the **Great Lakes Environmental Research Laboratory**, Ann Arbor, MI, April 7, 2016.
- Assessing Effects of Nano-Titanium Dioxide on Freshwater Microbial Communities. Oral presentation given at **Duke University**, Center for the Environmental Implications of NanoTechnology, Durham, NC, February 24, 2016.
- Effects of Pharmaceuticals on Benthic Microbial Communities within the Baltimore Ecosystem Study. Oral presentation given at the **Annual Meeting of the Baltimore Ecosystem Study**, Baltimore, MD, October 22-23, 2014.
- Effects of Emerging Contaminants on Microbial Communities in Urban Freshwater Ecosystems. Oral presentation given in the Department of Civil and Environmental Engineering at **Northwestern University** on October 17, 2014.
- Effects of Emerging Contaminants on Microbial Communities in Urban Freshwater Ecosystems. Oral presentation given at **Illinois-Indiana Sea Grant Staff Retreat**, August 27, 2014.
- Effects of Urbanization on Microbial Communities in Lotic Ecosystems. Oral presentation given at **Michigan State Univesity**, Kellogg Biological Station, November 8, 2013.
- Effects of Urbanization on Microbial Communities in Lotic Ecosystems. Oral presentation given in the Department of Biology, **Northeastern Illinois University**, September 12, 2013.
- Assessing Effects of a Widely-Used Nanomaterial, Nano-Titanium Dioxide, on Freshwater Microbial Communities. Oral presentation given at the **International Association for Great Lakes Research Annual Conference**, June 6, 2013, Purdue University.
- Ecotoxicology of Antimicrobial Pharmaceutical and Personal Care Products in Illinois Rivers and Streams. Oral presentation given at the **Illinois Sustainable Technology Center**, March 14, 2013.
- Effects of Urbanization on Microbial Communities in Lotic Ecosystems. Oral presentation given in the Department of Biology, **Western Michigan University**, February 15, 2013.
- Anthropogenic Effects on the Microbial Ecology of Urban Streams. Oral presentation given at the **Cary Institute of Ecosystem Studies**, September 27, 2012.
- Elevated Atmospheric Carbon Dioxide Alters Aquatic and Terrestrial Microbial Communities in a Temperate Forest. Oral presentation given for the Associated Colleges of the Chicago Area Seminar Series held at **Benedictine University**, October 26, 2010.
- Elevated Atmospheric Carbon Dioxide Alters Aquatic and Terrestrial Microbial Communities in a Temperate Forest. Oral presentation given in the Department of Biology, **Western Michigan University**, October 22, 2010.
- Elevated Atmospheric Carbon Dioxide Alters Aquatic and Terrestrial Microbial Communities in a Temperate Forest. Oral presentation given in the Department of Microbiology, **Southern Illinois University**, Oct 15, 2010.
- Ecological Impacts of Pharmaceutical and Personal Care Products in Illinois Rivers and Streams. Oral presentation given at the **Illinois Sustainable Technology Center**, September 29, 2010.

- Elevated Atmospheric Carbon Dioxide Alters Terrestrial and Aquatic Microbial Communities in a Temperate Forest. Oral presentation given for "Challenges in Environmental Molecular Microbiology" workshop held at **Argonne National Lab** April 26-27, 2010.
- Elevated Atmospheric Carbon Dioxide Alters Terrestrial and Aquatic Microbial Communities in a Temperate Forest. Oral presentation given in the Department of Environmental Sciences at **Rutgers University** on May 1, 2009.
- Elevated Atmospheric Carbon Dioxide Alters Terrestrial and Aquatic Microbial Communities in a Northern Michigan Watershed. Oral presentation given at the **General Meeting of the American Society for Microbiology** in Boston, MA on June 3, 2008. My presentation was part of a Colloquium titled: Understanding the Microbiological Aspects of Global Change.
- Ecological Impacts of Pharmaceutical and Personal Care Products in Illinois Rivers and Streams. Oral presentation given at the Symposium on PPCPs in the Illinois Environment hosted by the **Illinois Waste Management and Research Center** on April 25, 2008.
- Assessment of Soil Microbial Communities in Surface Applied Illinois River Sediments. Oral presentation given at the Illinois River Sediment Conference, hosted by **Illinois Waste Management and Research Center**, March 1, 2007.
- Development of DNA Microarray Technology for Detection of Bacteria in Environmental Samples. Oral presentation given at the **Stritch School of Medicine**, Loyola University Medical Center, on May 16, 2006.
- Development of DNA Microarrays for the Detection of Nitrifying Bacteria in Wastewater Treatment Systems. Oral presentation given at the Annual Symposium sponsored by the **University of Illinois' Center of Advanced Materials** for Purification of Water with Systems in Atlanta, GA, on April 14, 2005.
- Impacts of Ecosystem Change Processes on Microbial Communities. Oral presentation given in the Department of Civil and Environmental Engineering at **Northwestern University** on April 20, 2005.
- Impacts of Heavy Metal Contamination on Soil Microbial Communities. Oral presentation given at the **Annual Meeting of the Soil Science Society of America** in Seattle, WA, on November 2, 2004.
- Development of DNA Microarray Technology for the Detection of Bacteria in Environmental Samples. Seminar given at the Chemistry Department at **Loyola University Chicago** on October 21, 2004.
- Impacts of Elevated CO_2 on Soil Microbial Communities. Seminar given at the **University of Michigan Biological Station**, Pellston, MI. July 29, 2004.
- Development of DNA Microarray Technology for the Detection of Bacteria in Environmental Samples. Seminar given at the Department of Molecular and Cellular Biochemistry, **Stritch School of Medicine**, Maywood, IL. November 3, 2003.
- Use of DNA Microarrays for the Detection of Bacteria in Environmental Samples. Seminar given at the "Frontiers in Assessment Methods for the Environment" symposium which was held at the **University of Minnesota**, Minneapolis, MN. August 10-13 2003.
- Development of DNA Microarray Technology for the Detection of Nitrifying Bacteria. Seminar given at the Department of Biology, **DePaul University**, Chicago, IL. March 21, 2001.

- Development of DNA Microarrays for the Detection of Nitrifying Bacteria. Seminar given at the Department of Civil and Environmental Engineering, **Northwestern University**, Evanston, IL, October 25, 2000.
- Comparison of DNA Microarrays and Membrane Hybridization as Platforms for the Application of Oligonucleotide Probes Targeting Nitrifying Bacteria. Seminar given at the Midwest Molecular Microbial Ecology Conference. **Northern Illinois University**, DeKalb, IL. July 17, 2000.
- Development of DNA Microarrays for Microbial Monitoring. Seminar given at the Advanced Environmental Monitoring and Control Project Meeting. **Jet Propulsion Laboratory**, Arcadia, CA. April 24-26, 2000.
- Soil Heavy Metal Contamination and Methods for Characterization of Microbial Communities. Seminar given at the Department of Plant and Soil Science, **University of Delaware**, Newark, DE. April 13, 2000.
- Development of DNA Microarrays for the Analysis of Microbial Communities. Seminar given at the **DOE NABIR Workshop** on Applications of Genomic Technology to Bioremediation. Arlington, VA. December 5–7, 1999.
- Development of DNA Microarrays for the Analysis of Microbial Communities. Seminar given at the Department of Civil and Environmental Engineering, **Northwestern University**, Evanston, IL. December 1, 1999.
- Effects of Sludge Applied Heavy Metals on Soil Microbial Communities. Seminar given at the Department of Soil and Water Engineering, **Cornell University**, Ithaca, NY. March 25, 1997.
- Effects of Metal Contamination and Remediation on Soil Microbial Communities. Seminar given at the Department of Environmental Sciences, **Rutgers University**, New Brunswick, NJ. October 11, 1996.

Submitted Oral Presentations

- **Kelly, JJ.** Adsorption of Pharmaceuticals to Microplastics Impacts Microbial Colonization in Aquatic Ecosystems. Presented at Emerging Contaminants in the Environment Conference, April 18-19, 2023, Urbana-Champaign, IL.
- **Kelly, JJ.** Adsorption of Pharmaceuticals Impacts Microbial Colonization of Microplastics in Freshwater Ecosystems. Presented at Joint Aquatic Sciences Meeting, May 14-20, 2022, Grand Rapids, MI.
- **Kelly, JJ.** Wastewater Associated Contaminants Alter the Composition and Activity of Benthic Microbial Communities. Presented at Society of Freshwater Science 2021- Virtual Meeting, May 23 – 27, 2021.
- **Kelly JJ**, TJ Hoellein. Wastewater treatment alters microbial colonization of microplastics released to the environment. Presented at Emerging Contaminants in the Environment Conference, April 27-28, 2021.
- **Kelly JJ**, EJ Rosi. A multi-scale approach to assessing the effects of emerging contaminants on microbial communities in lotic ecosystems. Presented at Society for Freshwater Science Annual Meeting, May 19-23, 2019, Salt Lake City, UT.
- **Kelly JJ**, EJ Rosi. Benthic microbial communities as indicators of ecological disruption by pharmaceuticals and personal care products. Presented at Society for Freshwater Science Annual Meeting, May 20-24, 2018, Detroit, MI.
- **Kelly JJ**, M Rojas, HA Bechtold, D Snow, EJ Rosi. Benthic microbial community composition and activity in urban streams with varied pharmaceutical

concentrations. Presented at Society for Freshwater Science Annual Meeting, June 4-8, 2017, Durham, NC.

- **Kelly JJ**, TJ Hoellein, SA Mason, A McCormick, M London, JW Scott. Sources, fate and microbial interactions of microplastic particles in urban rivers. Presented at Society for Environmental Toxicology and Chemistry World Congress, November 6-10, 2016, Orlando, FL.
- **Kelly JJ**, KA Gray, J-F Gaillard, CG Peterson, CTT Binh, T Tong, A Ozaki. A common engineered nanomaterial, nano-titanium dioxide, is a potential emerging threat to river ecosystems. Presented at Society for Freshwater Science Annual Meeting, May 21-26, 2016, Sacramento, CA.
- **Kelly JJ,** TJ Hoellein, SA Mason, A McCormick, M London. Microplastic particles are a novel and mobile habitat for microorganisms in freshwater ecosystems. Presented at Society for Freshwater Science Annual Meeting, May 17-21, 2015, Milwaukee, WI.
- **Kelly JJ**, and EJ Rosi-Marshall. A microbial perspective on urban stream syndrome. Presented at 3rd Symposium on Urbanization and Stream Ecology, May 15-17, 2014, Portland, OR.
- **Kelly JJ**, Binh CTT, T Tong, J-F Gaillard, and KA Gray. High-throughput screening and next-generation sequencing can be used to assess the acute effects of engineered nanomaterials on aquatic bacterial communities. Presented at Joint Aquatic Sciences Meeting, May 18-23, 2014, Portland, OR.