Curriculum Vitae

Donald Y. Kobayashi

Title
Professor and Chair

Department of Plant Biology & Pathology
School of Environmental and Biological Sciences - Foran Hall
Rutgers, The State University of New Jersey
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New Brunswick, NJ 08901-8520

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Educational History
Ph.D. 1988, Plant Pathology; University of California, Riverside
B.S. 1983, Microbiology; University of Washington

Professional Appointments
Jul, 2016 - present: Chair, Department of Plant Biology & Pathology, School of Environmental and Biological Sciences, Rutgers University
2013-2016: Director, Undergraduate Program in Plant Biology, School of Environmental and Biological Sciences, Rutgers University
2014-2015: Director, Undergraduate Program in Biotechnology, School of Environmental and Biological Sciences, Rutgers University
2014-2015: Director, Undergraduate Program in Agriculture and Food Systems, School of Environmental and Biological Sciences, Rutgers University
2012-present: Executive Committee member, Department of Plant Biology & Pathology, School of Environmental and Biological Sciences, Rutgers University
2009-2014: Associate Director, Undergraduate Program in Biotechnology; School of Environmental and Biological Sciences, Rutgers University
2006-2008: Senior Editor, Phytopathology (International flagship journal of the American Phytopathological Society)
2000-2002: Associate Editor, Phytopathology
1991-Present: Faculty Member, Center for Turfgrass Science, Cook College, Rutgers University
2008-present: Professor, Department of Plant Biology & Pathology, Rutgers University
1996-2008: Associate Professor, Department of Plant Biology & Pathology, Rutgers University
1990-1996: Assistant Professor, Department of Plant Pathology, Rutgers University
1990 (Mar-Aug): Postdoctoral Research Scientist, Department of Molecular Biology, University of Wyoming, Laramie, WY (M.M. Stayton, advisor)
1988-1990: Associate Research Scientist, Division of Microbial Pesticides, DNA Plant Technology, Inc., Oakland, CA (T.V. Suslow, Division Leader)

SCHOLARLY ACTIVITES

Publications

Saraihom, S., Kobayashi, D.Y., Lotrakul, P., Prasongsuk, S., Eveleigh, D.E., and Punnapayak, H. 2016. First report of a tropical Lysobacter enzymogenes producing bifunctional endoglucanse activity towards carboxymethylcellulose and chitosan. Ann. Microbiol. 66:906-919 DOI: 10.1007/s13213-015-1170-6.

de Bruijn, I., Cheng, X., de Jager, V., Gomez Exposito, R., Watrous, J., Patel, J., Postma, J., Dorrestein, P.C., Kobayashi, D.Y., and Raaijmakers, R.M. 2015. Comparative genomics and metabolic profiling of the genus *Lysobacter*. BMC Genomics 16:991 DOI 10.1186/s12864-015-2191-z.

Mathioni, S.M., Patel, N., Riddick, B., Sweigard, J.A., Czymmek, K.J., Caplan, J.L., Kunjeti, S.G., Kunjeti, S., Raman, V., Hillman, B.I., Kobayashi, D.Y., Donofrio, N.M. 2013. Transcriptomics of the Rice Blast Fungus *Magnaporthe oryzae* in Response to the Bacterial Antagonist *Lysobacter enzymogenes* reveals candidate fungal defense response genes. PLos One 8:e76487.

Patel, N., Oudemans, P.V., Hillman, B.I., and Kobayashi, D.Y. 2013. Use of the tetrazolium salt MTT to measure cell viability effects of the bacterial antagonist *Lysobacter enzymogenes* on the filamentous fungus *Cryphonectria parasitica*. Ant. van Leeuwen. 103:1271-1280.

Kidarsa, T.A., Shaffer, B.T., Goebel, N.C., Roberts, D.P., Buyer, J.S., Johnson, A., Kobayashi, D.Y., Zabriskie, T.M., Paulsen, I., and Loper, J.E. 2013. Genes expressed by the biological control bacterium *Pseudomonas protegens* Pf-5 on seed surfaces under the control of the global regulators GacA and RpoS. Env. Microbiol. 15:716-735.

Loper, J.E., Hassan, K.A, Mavrodi, D.V., Davis, E.W., Lim, C.K, Shaffer, B.T., Elbourne, L.D.H., Stockwell, V.O., Hartney, S.L., Breakwell, K., Henkels, M.D., Tetu, S.G., Rangel, L.I., Kidarsa, T.A., Wilson, N.L., van de Mortel, J.E., Song, C., Blumhagen, R., Radune, D., Hostetler, J.B, Brinkac, L.M., Durkin, A.S., Kluepfel, D.A., Wechter, W.P., Anderson, A.J., Kim, Y.C., Pierson, L.S., Pierson, E.A., Lindow, S.E., Kobayashi, D.Y., Raaijmakers, J.M., Weller, D.M., Thomashow, L.S., Allen, A.E. and Paulsen, I.T. 2012. Comparative genomics of plant-associated *Pseudomonas* spp.: Insights into diversity and inheritance of traits involved in multitrophic interactions. PLos Genetics 8: e1002784.

Roberts, D.P. and Kobayashi, D.Y. 2011. Impact of spatial heterogeneity within spermosphere and rhizosphere environments on performance of bacterial biological control agents. Pp. 111- 130. In D.K. Maheshwari, Ed. Bacteria in Agrobiology: Crop Ecosystems. Springer, New York. 434 pp.

Kobayashi, D.Y., and Crouch, J.A. 2009. Bacterial-fungal interactions: from pathogens to mutualistic endosymbionts. Annu. Rev. Phytopathol. 47:63-82.

Roberts, D.P. Baker, C.J., McKenna, L., Liu, S., Buyer, J.S., and Kobayashi, D.Y. 2009. Influence of host seed on metabolic activity of *Enterobacter cloacae* in the spermosphere. Soil Biol. & Biochem. 41: 754-761.

Ma, J., Kobayashi, D.Y., and Yee, N. 2009. Role of menaquinone biosynthesis genes in selenate reduction by *Enterobacter cloacae* SLD1a-1 and *Escherichia coli* K12. Env. Microbiol. 11:149-158.

Pielach, C.A., Roberts, D.A. and Kobayashi, D.Y. 2008. Metabolic behavior of bacterial biological control agents in the soil and rhizosphere. Adv. Appl. Microbiol. 65:199-215.

Yee, N. and Kobayashi, D.Y. 2008. The molecular genetics of selenate reduction by *Enterobacter cloacae* SLD1a-1. Adv. Appl. Microbiol. 64:108-120.

Ma, J., Kobayashi, D.Y. and Yee, N. 2007. Chemical kinetic and molecular genetic study of selenium oxyanion reduction by *Enterobacter cloacae* SLD1a-1. Env. Sci. Tech. 41:7795-7801.

Yee, N., Ma, J., Dalia, A., Boonfueng, T. and Kobayashi, D.Y. 2007. Se(VI) reduction and the precipitation of Se(0) by the facultative bacterium *Enterobacter cloacae* SLD1a-1 is regulated by FNR. Appl. Environ. Microbiol. 73:1914-1920.

Kobayashi, DY. and Yuen, G.Y. 2007. The potential of *Lysobacter* spp. for biological control of plant diseases. CAB Reviews: Persp. Agr. Vet. Sci. Nutr. Nat. Res. 2: no. 007 11pp (on-line journal -- www.cababstractsplus.org/cabReviews/reviews.asp).

Loper, J.E., Kobayashi, D.Y. and Paulsen, I.T. 2007. The genomic sequence of *Pseudomonas fluorescens* Pf-5: Insights into biological control. Phytopathology 97:233-238.

Chen, J., Moore, W.H., Yuen, G.Y., Kobayashi, D. and Caswell-Chen, E.P. 2006. Influence of *Lysobacter enzymogenes* strain C3 on nematodes. J. Nematol. 38:233-239.

Kobayashi, D.Y., and Yuen, G.Y. 2005. The role of *clp*-regulated factors in antagonism against *Magnaporthe poae* and biological control of summer patch disease of Kentucky bluegrass by *Lysobacter enzymogenes* C3. Can. J. Microbiol. 51:719-723.

Paulsen, I.T., Press, C., Ravel, J., Kobayashi, D.Y., Myers, G.S.A., Mavrodi, D.V., DeBoy, R.T., Seshadri, R., Ren, Q., Madupu, R., Dodson, R.J., Durkin, A.S., Brinkac, L.M., Daugherty, S.C., Sullivan, S.A., Rosovitz, M.J., Gwinn, M.L., Zhou, L., Nelson, W.C., Weidman, J., Watkins, K., Tran, K., Khouri, H., Pierson, E.A., Pierson, L.S., III, Thomashow, L.S., and Loper, J.E. 2005. Complete genome sequence of the plant commensal *Pseudomonas fluorescens* Pf-5: insights into the biological control of plant disease. Nat. Biotech. 23:873-878.

Palumbo, J.D., Yuen, G.Y., Jochum, C.C., Tatum, K., and Kobayashi, D.Y. 2005. Mutagenesis of β-1,3-glucanase genes in *Lysobacter enzymogenes* strain C3 results in reduced biological control activity towards Bipolaris leaf spot of tall fescue and Pythium damping off of sugarbeet. Phytopathology 95: 701-707.

Kobayashi, D.Y., Reedy, R.M., Palumbo, J.D., Zhou, J.-M. and Yuen, G. 2005. A *clp* gene homologue belonging to the Crp gene family globally regulates lytic enzyme production, antimicrobial activity and biological control activity expressed by *Lysobacter enzymogenes* strain C3. Appl. Environ. Microbiol. 71: 261-269.

Kobayashi, D.Y. and Hillman, B.I. 2005. Fungi, Bacteria and Viruses as Pathogens of the Fungal Community. In The Fungal Community, J. Dighton, J. White and P. Oudemans, eds. CRC Press, Boca Raton. Pages 399-421.

Li, H.M., Sullivan, R., Moy, M., Kobayashi, D.Y., and Belanger, F.C. 2004. Expression of a novel chitinase by the fungal endophyte in *Poa ampla*. Mycologia 96: 526-536.

Fogg, M.L., Reedy, R., Kobayashi, D.Y., Johnston, S.A., Kline, W.L. 2004. Occurrence of bacterial blight of fenugreek in New Jersey caused by *Pseudomonas syringae* pv. *syringae* and isolation of the pathogen from infested seed. Can. J. Plant Pathol. 26:129-133.

Palumbo, J.D., Sullivan, R. and Kobayashi, D.Y. 2003. Molecular characterization and expression in *Escherichia coli* of three β-1,3-glucanase genes from *Lysobacter enzymogenes* strain N4-7. J. Bacteriol. 185:4362-4370.

Sullivan, R.F., Holtman, M.A., Zylstra, G.J., White, J.F. and Kobayashi, D.Y. 2003. Identification of two biological control agents for plant diseases as *Lysobacter enzymogenes* based on phylogenetic analysis of 16S rDNA, fatty acid composition and phenotypic characteristics. J. Appl. Microbiol. 94:1079-1086.

Lohrke, S.M., Dery, P.D., Reedy, R., Kobayashi, D., Roberts, D.P. 2002. Mutation in an *rpiA* homologue in *Enterobacter cloacae* decreases colonization and biocontrol of damping-off on cucumber caused by *Pythium ultimum*. Molec. Plant Microbe Interact. 15: 817-825.

Kobayashi, D.Y., Reedy, R.M., Bick, J.A., and Oudemans, P.V. 2002. Characterization of a chitinase gene from *Stenotrophomonas maltophilia* and its involvement in biological control. Appl. Environ. Microbiol. 68:1047-1054.

Braun, P.G., Hildebrand, P.D., Ells, T.C. and Kobayashi, D.Y. 2001. Evidence and characterization of a gene cluster required for the production of viscosin, a lipopeptide biosurfactant, by a strain of *Pseudomonas fluorescens*. Can. J. Microbiol. 47:294-301.

Sreedhar, L., Kobayashi, D.Y., Bunting, T.E., Hillman, B.I., and Belanger, F.C., 1999. Fungal proteinase expression in the interaction of a plant pathogen with its host. Gene 235:121-129.

Kobayashi, D.Y. and Palumbo, J.D. 2000. Bacterial endophytes and their effect and potential use in agriculture. In Microbial Endophytes of Plants. C.W. Bacon and J.F. White, eds., Marcel Dekker, New York. Pages 199-233.

Roberts, D.P. and Kobayashi, D.Y. 2000. Hyphal Lysis. In Encyclopedia of Plant Pathology. O.C. Maloy and T.D. Murray, eds. John Wiley and Sons, New York. Pages 558-559.

Kobayashi, D.Y., Palumbo, J.D. and Holtman, M.A. 2000. Potential for use of *Stenotrophomonas maltophilia* and a related bacterial species for the control of soil-borne turfgrass diseases. In Fate of Turfgrass Chemicals and Pest Management Approaches. American Chemical Society Books, M.J. Clark and M. Kenna, eds. Boston. Pages 353-362.

Roberts, D.P., Dery, P.D., Yucel, I., Buyer, J., Holtman, M.A. and Kobayashi, D.Y. 1999. Role of *pfkA* and general carbohydrate catabolism in seed colonization by *Enterobacter cloacae*. Appl. Environ. Microbiol: 65:2513-2519.

Roberts, D.P., Kobayashi, D.Y., Dery, P.D. and Short Jr., N.M. 1999. An image analysis method for determination of spatial colonization patterns of bacteria in plant rhizosphere. Appl. Microbiol. Biotech. 51:653-658.

Thompson, D.C., Kobayashi, D.Y., and Clarke, B.B. 1998. Isolation of rhizosphere competent bacteria for the suppression of suppression of summer patch disease on Kentucky bluegrass, and their establishment in field turfgrass. Soil Biol. Biochem. 30:257-263.

Hanekamp, T., Kobayashi, D., Hayes, S., and Stayton, M.M. 1997. Avirulence gene D of *Pseudomonas syringae* pv. *tomato* may have undergone horizontal gene transfer. FEBS Let. 415:40-44.

Holtman, M.A. and Kobayashi, D.Y. 1997. Identification of *Rhodococcus erythropolis* isolates capable of degrading the fungicide carbendazim. Appl. Microbiol. Biotech. 47:578-582.

Kobayashi, D.Y. and Holtman, M.A. 1997. Isolation of chitinolytic bacteria for biological control of plant diseases. In The Chitin Handbook. R. Muzzarelli and M.G. Peter, eds., Atec, Grottammare, Italy. Pages 297-303.

Roberts, D.P., and Kobayashi, D.Y. 1997. Behavior of biocontrol bacteria in the spermosphere and rhizosphere. In Recent Research Developments in Plant Pathology. Research Signpost Publ., Trivandrum. Pages 137-147.

Gould, A.B., Kobayashi, D.Y. and Bergen, M.S. 1996. Identification of bacteria for biological control of *Botrytis cinerea* on petunia using a petal disk assay. Plant Dis. 80:1029-1033.

Thompson, D.C., Clarke, B., and Kobayashi, D.Y. 1996. Evaluation of bacterial antagonists for the reduction of summer patch symptoms in Kentucky bluegrass. Plant Dis. 80:856-862.

Kobayashi, D.Y. and El-Barrad, N. 1996. Selection of bacterial antagonists using enrichment cultures for the control of summer patch disease of Kentucky bluegrass. Cur. Microbiol. 32:106-110.

Kobayashi, D.Y., Guglielmoni, M. and Clarke, B. 1995. Isolation of the chitinolytic bacteria *Xanthomonas maltophilia* and *Serratia marcescens* as biological control agents for summer patch disease of turfgrass. Soil Biol. Biochem. 27:1479-1487.

Kobayashi, D.Y., Stretch, A.W. and Oudemans, P.V. 1995. A bacterial leaf spot of highbush blueberry hardwood cuttings caused by *Pseudomonas andropogonis*. Plant Dis. 79:839-842.

Lorang, J.M., Shen, H., Kobayashi, D., Cooksey, D. and Keen, N.T. 1994. *avrA* and *avrE* in *Pseudomonas syringae* pv. *tomato* PT23 play a role in virulence on tomato plants. Molec. Plant Microbe Inter. 7:508-515.

Keen, N.T., Shen, H., Lorang, J. and Kobayashi, D.Y. 1992. Developments in the interaction of bacterial avirulence genes and plant resistance genes. Fallen Leaf Lake Conference on Molecular Biology of Bacterial Plant Pathogens.

Tamaki, S.J., Kobayashi, D.Y. and Keen, N.T. 1991. Sequence domains required for the activity of avirulence genes *avrB* and *avrC* from *Pseudomonas syringae* pv. glycinea. J. Bacteriol. 173:301-307.

Kobayashi, D.Y., Tamaki, S.J., and Keen, N.T. 1990. Molecular characterization of avirulence gene D from *Pseudomonas syringae* pv. *tomato*. Molec. Plant-Microbe Inter. 3:94-102.

Kobayashi, D.Y., Tamaki, S.J., Trollinger, D.J., Gold, S. 1990. A gene from *Pseudomonas syringae* pv. *glycinea* with homology to avirulence gene D from *P.s.* pv. *tomato* but devoid of the avirulence phenotype. Molec. Plant-Microbe Inter. 3:103-111.

Keen, N.T., Tamaki, S., Kobayashi, D., Gerhold, D., Stayton, M., Shen, H., Gold, S., Lorang, J., Thordal-Christensen, H., Dahlbeck, D., and Staskawicz, B. 1990. Bacteria expressing avirulence gene D produce a specific elicitor of the soybean hypersensitive reaction. Molec. Plant-Microbe Inter. 3:112-121.

Keen, N.T., Kobayashi, D, Tamaki, S., Shen, H., Stayton, M., Lawrence, D., Sharma, A., Midland, S., Smith, M.. and Sims, J. 1990. Avirulence gene D from *Pseudomonas syringae* pv. *tomato* and its interaction with resistance gene *Rpg4* in soybean. 5th International Symposium on the Molecular Genetics of Plant-Microbe Interactions.

Keen, N.T., Tamaki, S., Kobayashi, D., Stayton, M., Gerhold, D., Shen, H., Gold, S., Lorang, J. and Thordal-Christensen, H. 1989. Characterization and function of avirulence genes from *Pseudomonas syringae* pv. *tomato*. In Signal Molecules in Plants and Plant-Microbe Interactions. NATO ASI Series, Vol. H36. B.J.J. Lugtenberg, Ed. Springer-Verlag, Berlin. pp. 183-188.

Kobayashi, D.Y., Tamaki, S.J., and Keen, N.T. 1989. Cloned avirulence genes from the tomato pathogen *Pseudomonas syringae* pv. *tomato* confer cultivar specificity on soybean. Proc. Natl. Acad. Sci. USA 86:157-161.

Keen, N.T., Tamaki, S., Kobayashi, D., and Trollinger, D. 1988. Improved broad-host-range plasmids for DNA cloning in gram-negative bacteria. Gene 70:191-197.

Manulis, S., Kobayashi, D.Y., and Keen, N.T. 1988. Molecular cloning and sequencing of a pectate lyase gene from *Yersinia pseudotuberculosis*. J. Bacteriol. 170:1825-1830.

Brajtburg, J., Kobayashi, D., Medoff, G., and Kobayashi, G.S. 1982. Antifungal action of amphotericin B in combination with other polyene or imidazole antibiotics. J. Infect. Dis. 146:138-146.

Patents

Kobayashi, D.Y. Chitinase from *Stenotrophomonas maltophilia*. U.S. Patent No.: 6,399,858 (issued June 4, 2002).

Presentations (last 10 yrs)

Chulalongkorn University, Bangkok, Thailand. Population Genetics of *Xylella fastidiosa* subsp. *multiplex* infecting oak in the northeastern United States. (Apr. 20, 2016).

The Third Thai-American Symposium on Plant Biomass, Biotechnology and Agriculture, Chulalongkorn University, Bangkok, Thailand. Title: Bacterial leaf scorch of oak, a drought stress-enhanced disease cause by *Xylella fastidiosa* subsp. *multiplex*. (July 15, 2015) co-Keynote Speaker.

International Symposium on Plant Response to Stresses, China Agricultural University, Beijing, China. Title: Evaluating populations of *Xylella fastidiosa* subsp. *multiplex*, causative agent of bacterial leaf scorch of oak in northeastern United States. (Jun, 17, 2015)

Department of Botany, Chulalongkorn University, Bangkok, Thailand. Title: Genomic characterization of extracellular enzymes produced by *Lysobacter enzymogenes*. (Jan. 16, 2014)

2012 Rutgers University Microbiology Mini-Symposium. Title: Role of pathogenicity mechanisms during interactions between the bacterial biocontrol agent *Lysobacter enzymogenes* and fungal hosts (Feb. 3, 2012).

21st Annual Rutgers Turfgrass Symposium, School of Environmental and Biological Sciences. Title: Novel Strategies for Biorational Approaches to Turfgrass Disease Control – A Genomics Approach (Jan. 6, 2012).

SEBS/NJAES Symposium for Applied and Environmental Genomics. Title: The Genomics of Biological Control: Novel Approaches for Plant Disease Control (Dec. 9, 2011).

American Phytopathological Society/International Society for the Plant Protection Sciences 2011 Joint Annual Meeting Special Session Symposium: What else is there? New genes, metabolites and regulatory pathways involved in biocontrol by bacteria, Honolulu, HI. Seminar Title: Pathogenesis as a mechanism of biological control by *Lysobacter enzymogenes*. (Aug, 2011)

USDA/NIFA Microbial Biology and Microbial Functional Genomics Programs Awardee Meeting, Washington DC. Title: The role of contact dependent mechanisms in bacterial pathogenesis of fungal hosts (Jul. 27, 2011).

Department of Microbiology and Biochemistry, Rutgers University, New Brunswick, NJ. Title: Contact dependent mechanisms mediate pathogenesis of fungal hosts by *Lysobacter enzymogenes* (Apr. 29, 2011).

Department of Botany, Chulalongkorn University, Bangkok, Thailand. Title: *Lysobacter enzymogenes*: A model for bacterial pathogenesis of lower eukaryotes and biological control of plant diseases (Apr. 5, 2011).

Royal Golden Jubilee - Ph.D. Congress XII, Pattaya, Thailand. Title: The genome sequence of the soil bacterium *Lysobacter enzymogenes* reveals new insights into microbial antagonism and biological control of plant diseases (Apr. 2, 2011).

Northeast Division American Phytopathological Society 2010 Annual Meeting Special Session Symposium: Emerging Trends in Plant Management, Northampton, MA. Presentation title: Using genomic approaches to enhance the effectiveness of biocontrol products (Oct 29, 2010).

Nineteenth Annual Rutgers Turfgrass Symposium, School of Environmental and Biological Sciences. Title: the Atkins approach to Biological Control: Does the High Protein/Low Carbohydrate Diet of *Lysobacter enzymogenes* specify host preference? (Jan. 11, 2010).

8th International PGPR Workshop, Portland, OR. Presentation title: *Lysobacter enzymogenes*, a biocontrol agent that establishes pathogenic interactions with a broad range of lower eukaryotes (May 22, 2009).

Potomac Division American Phytopathological Society 2009 Annual Meeting Special Session Symposium: Biological Control of Soilborne Pathogens, Gettysburg, PA. Presentation title: Are Biocontrol Agents What They Eat? Nutrient Availability Effects on Expression of Biocontrol Traits in Rhizobacteria (Mar 26, 2009).

3rd Annual Rutgers University Microbiology Mini-Symposium: Microbiology at Rutgers University: Cultivating Traditions, Current Strength, and Future Frontiers, School of Environmental and Biological Sciences. Title: Genomic insights into pathogenicity mechanisms utilized by *Lysobacter enzymogenes*, an intracellular bacterial pathogen of lower eukaryotes (Jan. 30, 2009).

Eighteenth Annual Rutgers Turfgrass Symposium, School of Environmental and Biological Sciences. Title: From Field of Genes to Field of Dreams: How Genomic Approaches are Improving Biological Controls for Turfgrass Diseases (Jan. 12, 2009).

Department of Plant and Soil Sciences, University of Delaware, Newark, DE. Title: *Lysobacter enzymogenes*: A model for bacterial pathogenesis of lower eukaryotes and biological control of plant diseases (Apr. 25, 2008).

NSF/USDA Microbial Genome Sequencing Program Awardee Workshop 2008 Plant and Animal Genome Conference, San Deigo, CA. Seminar title: The genome sequence of *Lysobacter enzymogenes*: Insights into bacterial pathogenesis of lower eukaryotes (Jan. 12, 2008).

TEACHING

Appointments and Committees

Director, Undergraduate program in Plant Biology, Jul 2013-Jun 2016.

Director, Undergraduate program in Agriculture and Food Systems, Jul 2014-Jun 2015.

Director, Undergraduate program in Biotechnology, Jul 2014-Jun 2015.

Associate Director, Undergraduate program in Biotechnology, Jul. 2009-Jun. 2014; Jul. 2015-present.

Acting Undergraduate Program Director, Biotechnology, Jul. 2007-Dec. 2007.

Plant Pathology track coordinator, Plant Biology Graduate Program (1995-2001; 2011-2015)

Curriculum/Program Development

Veterans Administration Health Education Agreement with Horticultural Therapy Program, Rutgers University -- Horticultural Therapy Internship Agreement, 2014 (in collaboration with J. Flagler)

RU-Nanjing Agricultural University Program of Scholarly Exchange (2+2) in Plant Biology, 2014 (in collaboration with B. Huang)

China Agricultural University, Program of Scholarly Exchange (2+2) in Plant Biology, 2015 (in collaboration with B. Huang)
Undergraduate Program in Plant Biology, 2015 (new core curriculum; in collaboration with L. Struwe).

Undergraduate academic advising
Cook College/School of Environmental and Biological Sciences Freshman Advisor, 1995-96; 2008-09.
Curriculum advisor, Undergraduate Major Program in Agriculture and Food Systems, classes of 2015-17.
Curriculum advisor, Undergraduate Major Program in Plant Biology, 2014-present.
Curriculum advisor, Undergraduate Minor Program in Plant Science, 2014-2017.
Curriculum advisor, Undergraduate Program in Biotechnology, 1993-present.
Curriculum advisor, S-STEM Scholars for Biotechnology program (30 students), classes of 2012- 2014.
School of Environmental and Biological Sciences Transfer Student Advisor (Agriculture and Food Systems: 2013-2015; Biotechnology: 2009; 2010; 2013, 2014; Plant Biology: 2013-present).
International Student Advising (2+2 articulation agreements)
South China University of Technology (SCUT); Biotechnology (3 students)
Shanghai Jiao Tong University (SJTU); Plant Biology (2 students)
Nanjing Agricultural University (NAU); Plant Biology (4 students)
China Agricultural University (CAU); Plant Biology (1 student)
First Year Interest Group (FIG) Peer Instructor Mentor, 2015 (3 Peer Instructors).

Graduate student advising
Chair, Thesis Committees (11 students)
Plant Biology Graduate Program Thesis Committee Member (18 students)
External Graduate Program Thesis Committee Member (21 students)

Undergraduate course instruction:
Molecular Genetics Laboratory: Junior level, lecture/laboratory core curriculum requirement for Biotechnology majors. Spring, 1992-present.
Plant Science (Guest Lecturer): Introductory course in plant science, and core curriculum course for Plant Biology majors. Fall, Spring 2017-present.
Undergraduate Research/Internship Mentor

- *Undergraduate Independent Research:* (1991-present:100+ students).
- *George H. Cook Scholars Program* (*Undergraduate honors independent research thesis):*
  - *Advisor(20 students)*
  - *Reader/Reviewer (20 students)*
- *Faculty Sponsor/Advisor, Cooperative Education Internship Program/Student Profession Internship Network (60+ students)*
- *Faculty Sponsor/Advisor, Biotechnology Summer Research Intern Program (1 student/yr)* 1999, 2000, 2001, 2004, 2005, 2006, 2007, 2110, 2012

- *Faculty Sponsor/Advisor, Aresty Summer Science Research Program (1 student/yr)* 2007; 2010

Graduate course instruction:

Core Seminar in Plant Biology III -- Plant Pathology: Seminar discussion course and core curriculum requirement for Plant Biology Graduate Program students. Sp 2007; Sp 2009; Sp 2011; Sp 2013; Fa 2015; Fa 2017

Principles of Plant Pathology (Guest Lecturer): Introductory plant pathology graduate course and core curriculum requirement for Plant Biology Graduate Program students; Lecture topic responsibilities: genetics, biochemistry and evolution of host/parasite interactions, general bacterial diseases; identification and diagnosis of bacterial diseases.

Plant Disease Clinic (Guest Lecturer): Graduate elective lecture/laboratory course. Topic responsibilities: basis concepts in bacterial diseases; methods for isolation and identification of bacterial pathogens.