

JBEI Publications FY22

Core Publications:

1007. Silva T.N., Thomas J.B., Dahlberg J., Rhee S.Y., Mortimer J.C. (2021) "Progress and challenges in sorghum biotechnology, a multi-purpose feedstock for the bioeconomy." *J. Experimental Botany*. doi: [10.1093/jxb/erab450](https://doi.org/10.1093/jxb/erab450)
1008. Huang, J., Liu, Z., Bloomer, B.J. Clark D.S., Mukhopadhyay A., Keasling J.D., Hartwig J.S. (2021) "Unnatural biosynthesis by an engineered microorganism with heterologously expressed natural enzymes and an artificial metalloenzyme." *Nat. Chem.* doi: [10.1038/s41557-021-00801-3](https://doi.org/10.1038/s41557-021-00801-3)
1009. Achinivu E.C., Frank S., Baral N.R., Das L., Mohan M., Otoupal P., Shabir E., Utan S., Scown C.D., Simmons B.A., Gladden J. (2021) "Alkanolamines as Dual Functional Solvents for Biomass Deconstruction and Bioenergy Production." *Green Chemistry*. doi: [10.1039/D1GC02667D](https://doi.org/10.1039/D1GC02667D)
1010. Leggieri P.A., Kerdman-Andrade C., Lankiewicz T.S., Valentine M.T., O'Malley M.A. (2021) "Non-destructive quantification of anaerobic gut fungi and methanogens in co-culture reveals increased fungal growth rate and changes in metabolic flux relative to mono-culture." *Microbial Cell Factories*. doi: [10.1186/s12934-021-01684-2](https://doi.org/10.1186/s12934-021-01684-2)
1011. Pang B., Li J., Eiben C.B., Oksen E., Barcelos C., Chen R., Englund E., Sundstrom E., Keasling J.D. (2021) "Lepidopteran mevalonate pathway optimization in Escherichia coli efficiently produces isoprenol analogs for next-generation biofuels." *Metab Eng.* doi: [10.1016/j.ymben.2021.10.007](https://doi.org/10.1016/j.ymben.2021.10.007)
1012. Howe A., Bonito G., Chou M.Y., Cregger M., Fedders A., Field J.L., Martin H.G., Labbe J., Mechan M., Northern T., Shade A., Tschaplinski T. (2021) "Frontiers and opportunities in bioenergy crop microbiome research networks." *Phytobiomes J.* doi: [10.1094/PBIOMES-05-21-0033-MR](https://doi.org/10.1094/PBIOMES-05-21-0033-MR)
1013. Scavuzzo-Duggan T., Varoquaux N., Madera M., Vogel J.P., Dahlberg J., Hutmacher R., Belcher M., Ortega J., Coleman-Derr D., Lemaux P., Purdom E., Scheller H.V. (2021) "Cell Wall Compositions of Sorghum bicolor Leaves and Roots Remain Relatively Constant Under Drought Conditions." *Front Plant Sci.* doi: [10.3389/fpls.2021.747225](https://doi.org/10.3389/fpls.2021.747225)
1014. Tian Y., Lin C.Y., Park J.H., Wu C.Y., Kakumanu R., Pidatala V., Vuu K., Rodriguez A., Shih P., Baidoo E., Temple S., Simmons B.A., Gladden J., Scheller H.V., Eudes A.G. (2021) "Overexpression of the rice BAHD acyltransferase AT10 increases xylan-bound p-coumarate and reduces lignin in Sorghum bicolor." *Biotechnology for Biofuels*. doi: <https://doi.org/10.1186/s13068-021-02068-9>
1015. Perez-Pimienta J.A., Papa G., Sun J., Stavila V., Sanchez A., Gladden J., Simmons B.A. (2021) "One-pot ethanol production under optimized pretreatment conditions using agave bagasse at high solids loading with low-cost biocompatible protic ionic liquid." *Green Chemistry*. doi: [10.1039/D1GC03774A](https://doi.org/10.1039/D1GC03774A)
1016. Cole B., Bergmann D., Blaby-Haas C. E., Blaby I. K., Bouchard K. E., Brady S. M., Ciobanu D., Coleman-Derr D., Leiboff S., Mortimer J. C., Nobori T., Rhee S. Y., Schmutz J., Simmons B. A., Singh A. K., Sinha N., Vogel J. P., O'Malley R. C., Visel A. Dickel D. E.

- (2021) "Plant single-cell solutions for energy and the environment.," *Communications Biology*, 4(1), p. 962. [doi: 10.1038/s42003-021-02477-4](https://doi.org/10.1038/s42003-021-02477-4)
1017. Rahaman M.S., Tulaphol S., Hossain M.A., Jasinski J., Sun N., George A., Simmons B.A., Maihom T., Crocker M., Sathitsuksanoh N. (2021) "Cooperative Brønsted-Lewis acid sites created by phosphotungstic acid encapsulated metal-organic frameworks for selective glucose conversion to 5-hydroxymethylfurfural." *Fuel*. [doi: 10.1016/j.fuel.2021.122459](https://doi.org/10.1016/j.fuel.2021.122459)
1018. Carruthers D.N., Lee T.S. (2021) "Diversifying Isoprenoid Platforms via Atypical Carbon Substrates and Non-model Microorganisms." *Front. Microbiol.* [doi:10.3389/fmicb.2021.791089](https://doi.org/10.3389/fmicb.2021.791089)
1019. Kim Y.J., Jung J.Y., Mishra U. (2021) "Managing Soil Organic Carbon for Climate Change Mitigation and Food Security." In Rattan Lal (Ed) *Soil Organic Carbon and Feeding the Future: Basic Soil Processes, Advances in Soil Science*, Taylor and Francis, Boca Raton, FL, [doi: 10.1201/9781003243090-2](https://doi.org/10.1201/9781003243090-2)
1020. Zhao Y., Yu X.H., Liu C.J. (2021) "The Inducible Accumulation of Cell Wall-Bound p-Hydroxybenzoates Is Involved in the Regulation of Gravitropic Response of Poplar." *Front. Plant Sci.* 12:755576. [doi: 10.3389/fpls.2021.755576](https://doi.org/10.3389/fpls.2021.755576)
1021. Mohan M., Huang K., Pidatala V., Simmons B.A., Singh S., Sale K.L., Gladden J. (2021) "Prediction of Solubility Parameters of Lignin and Ionic Liquids Using Multi-resolution Simulation Approaches." *Green Chem.* [doi: 10.1039/D1GC03798F](https://doi.org/10.1039/D1GC03798F)
1022. Banerjee D., Eng T., Sasaki Y., Srinivasan A., Oka A., Herbert R.A., Trinh J., Singan V.R., Sun N., Putnam D., Scown C.D., Simmons B., Mukhopadhyay A. (2021) "Genomics Characterization of an Engineered *Corynebacterium glutamicum* in Bioreactor Cultivation Under Ionic Liquid Stress." *Front. Bioeng. Biotechnol.* [doi: 10.3389/fbioe.2021.766674](https://doi.org/10.3389/fbioe.2021.766674)
1023. Ferrara M., Gallo A., Cervini C., Gambacorta L., Solfrizzo M., Baker S. E., Perrone G. (2021) "Evidence of the Involvement of a Cyclase Gene in the Biosynthesis of Ochratoxin A in *Aspergillus carbonarius*." *Toxins*. [doi: 10.3390/toxins13120892](https://doi.org/10.3390/toxins13120892)
1024. Munson C., Gao Y., Mortimer J.C., Murray D.T. (2022) "Solid-State Nuclear Magnetic Resonance as a Tool to Probe the Impact of Mechanical Preprocessing on the Structure and Arrangement of Plant Cell Wall Polymers." *Frontiers in Plant Science*. [doi: 10.3389/fpls.2021.766506](https://doi.org/10.3389/fpls.2021.766506)
1025. Martinez D.V., Rodriguez A., Juarros M.A., Martinez E.J., Alam T.M., Simmons B.A., Sale K.L., Singer S.W., Kent M. (2022) "Depolymerization of lignin for biological conversion through sulfonation and a chelator-mediated Fenton reaction." *Green Chem.* [doi: 10.1039/D1GC03854K](https://doi.org/10.1039/D1GC03854K)
1026. Liu Z., Huang J., Gu Y., Clark D.S., Mukhopadhyay A., Keasling J.D., Hartwig J.F. (2022) "Assembly and Evolution of Artificial Metalloenzymes within *E. coli* Nissle 1917 for Enantioselective and Site-Selective Functionalization of C—H and C=C Bonds." *J American Chemical Society*. [doi: 10.1021/jacs.1c10975](https://doi.org/10.1021/jacs.1c10975)
1027. Chen Y., Kaplan Lease N., Gin J.W., Ogorzalek T.L., Adams P.D., Hillson N.J., Petzold C.J. (2022) "Modular automated bottom-up proteomic sample preparation for high-throughput applications." *PLoS One*. [doi: 10.1371/journal.pone.0264467](https://doi.org/10.1371/journal.pone.0264467)
1028. York L. M., Cumming J. R., Trusiak A., Bonito G., von Haden A. C., Kalluri U. C., Tiemann L. K., Andeer P. F., Blanc-Betes E., Diab J. H., Favela A., Germon A., Gomez-Casanovas N., Hyde C. A., Kent A. D., Ko D. K., Lamb A., Missaoui A., Northern T. R., Pu Y., Ragauskas A. J., Raglin S., Scheller H. V., Ware A., Washington L., Yang W. H.

- (2022) "Bioenergy Underground: challenges and opportunities for phenotyping roots and the microbiome for sustainable bioenergy crop production." *The Plant Phenome Journal*. doi: [10.1002/ppj2.20028](https://doi.org/10.1002/ppj2.20028)
1029. Scown C.D., Keasling J.D. (2022) "Sustainable manufacturing with synthetic biology." *Nat Biotechnol*. doi: [10.1038/s41587-022-01248-8](https://doi.org/10.1038/s41587-022-01248-8)
1030. Papa G., Simmons B.A., Sun N. (2022) "Scale-Up of the Ionic Liquid-Based Biomass Conversion Processes." In: Zhang S. (eds) *Encyclopedia of Ionic Liquids*. Springer, Singapore. doi: [10.1007/978-981-10-6739-6_49-1](https://doi.org/10.1007/978-981-10-6739-6_49-1)
1031. Yunus I.S., Lee, T.S. (2022) "Applications of targeted proteomics in metabolic engineering: advances and opportunities." *Current Opinion in Biotechnology*. doi: [10.1016/j.copbio.2022.102709](https://doi.org/10.1016/j.copbio.2022.102709)
1032. Iwai, K., Wehrs, M., Garber, M., Sustarich J., Washburn L., Costello Z., Kim P.W., Ando D., Gaillard W.R., Hillson N.J., Adams P.D., Mukhopadhyay A., Garcia Martin H., Singh A.K. (2022) "Scalable and automated CRISPR-based strain engineering using droplet microfluidics." *Microsyst Nanoeng*. Doi: [10.1038/s41378-022-00357-3](https://doi.org/10.1038/s41378-022-00357-3)
1033. Gautam S., Mishra U., Scown C. D., Wills S. A., Adhikari K., Drewniak B. A. (2022) "Continental United States may lose 1.8 petagrams of soil organic carbon under climate change by 2100." *Global Ecology and Biogeography*. doi: doi.org/10.1111/geb.13489
1034. Liu C.J., Eudes A. (2022) "Lignin synthesis and bioengineering approaches toward lignin modification." Book Chapter in *Advances in Botanical Research, Lignin and hydroxycinnamic acids: biosynthesis and the buildup of the cell wall*. doi: [10.1016/bs.abr.2022.02.002](https://doi.org/10.1016/bs.abr.2022.02.002)
1035. Schmidt M., Pearson A.N., Incha M.R., Thompson M.G., Baidoo E.E.K., Kakumanu R., Mukhopadhyay A., Shih P.M., Deutschbauer A.M., Blank L., Keasling J.D. (2022) "Nitrogen metabolism in *Pseudomonas putida*: functional analysis using random barcode transposon sequencing." *Applied and Environmental Microbiology*. doi: [10.1101/2021.12.09.472016](https://doi.org/10.1101/2021.12.09.472016)
1036. Choudhary H., Simmons B.A., Gladden J. (2022) "Comparative Study on the Pretreatment of Aspen and Maple With 1-Ethyl-3-methylimidazolium Acetate and Cholinium Lysinate." *Front. Energy Res*. doi: [10.3389/fenrg.2022.868181](https://doi.org/10.3389/fenrg.2022.868181)
1037. Park M.R., Fong B., Tofaha T., Simmons B.A., Singer S. (2022) "Complete genome sequences of five isolated *Pseudomonas* spp. that catabolize pentose sugars and aromatic compounds obtained from lignocellulosic biomass." *Microbiol Res Announc*. doi: [10.1128/mra.00987-21](https://doi.org/10.1128/mra.00987-21)
1038. Unda F., Mottiar Y., Mahon E., Karlen S., Kim K.H., Loqué D., Eudes A., Ralph, J., Mansfield S. (2022) "A new approach to zip-lignin: 3,4-Dihydroxybenzoate is compatible with lignification." *New Phytologist*. doi: [10.1111/nph.18136](https://doi.org/10.1111/nph.18136)
1039. Placido D., Dong N., Amer B., Dong C., Ponciano G., Kahlon T., Whalen M., Baidoo E., McMahan C. (2022) "Downregulation of Squalene Synthase Broadly Impacts Isoprenoid Biosynthesis in Guayule." *Metabolites*. doi: [10.3390/metabo12040303](https://doi.org/10.3390/metabo12040303)
1040. Lim H.G., Rychel K., Sastry A.V., Bently G.J., Mueller J., Schindel H.S., Larsen P.E., Liable P.D., Guss A.M., Niu W., Johnson C.W., Beckham G.T., Feist A.M., Palsson B.O. (2022) "Machine-learning from *Pseudomonas putida* KT2440 transcriptomes reveals its transcriptional regulatory network." *Metab Eng*. doi: [10.1016/j.ymben.2022.04.004](https://doi.org/10.1016/j.ymben.2022.04.004)

1041. Eslami M., Adler A., Caceres R.S., Dunn J.G., Kelley-Loughnane N., Varaljay V.A., Garcia Martin H. (2022) "Artificial intelligence for synthetic biology." *Communications of the ACM*. doi: [10.1145/3500922](https://doi.org/10.1145/3500922)
1042. Mohan M., Keasling J.D., Simmons B.A., Singh S. (2022) "In silico COSMO-RS predictive screening of ionic liquids for the dissolution of plastic." *Green Chemistry*. doi: [10.1039/D1GC03464B](https://doi.org/10.1039/D1GC03464B)
1043. Sirirungruang S., Markel K., Shih P. M. (2022) "Plant-based engineering for production of high-valued natural products." *Natural product reports*. doi: [10.1039/d2np00017b](https://doi.org/10.1039/d2np00017b)
1044. Cruz-Morales P., Yin K., Landera A., Cort J.R., Young R.P., Kyle J.E., Bertrand R., Iavarone A.T., Acharya S., Cowan A., Chen Y., Gin J.W., Scown C.D., Petzold C.J., Araujo-Barcelos C., Sundstrom E., George A., Liu Y., Klass S., Nava A.A., Keasling J.D. (2022) "Biosynthesis of polycyclopropanated high energy biofuels." *Joule*. doi: [10.1016/j.joule.2022.05.011](https://doi.org/10.1016/j.joule.2022.05.011).
1045. Lankiewicz T.S., Lillington S.P., O'Malley M.A. (2022) "Enzyme Discovery in Anaerobic Fungi (Neocallimastigomycetes) Enables Lignocellulosic Biorefinery Innovation." *Applied and Industrial Microbiology*. doi: [10.1128/membr.00041-22](https://doi.org/10.1128/membr.00041-22)
1046. Mohan M., Kumar N., Goud V.V., Simmons B.A., Sale K.L., Gladden J.M., Singh S., Banerjee T. (2022) "Effect of cosolvent on the solubility of glucose in ionic liquids: Experimental and molecular dynamics simulations." *Fluid Phase Equilibria*. doi: [10.1016/j.fluid.2022.113559](https://doi.org/10.1016/j.fluid.2022.113559)
1047. Pham L.T.M., Choudhary H., Gauttam R., Singer S.W., Gladden J.M., Simmons B.A., Singh S., Sale K.L. (2022) Revisiting Theoretical Tools and Approaches for the Valorization of Recalcitrant Lignocellulosic Biomass to Value-Added Chemicals. *Front. Energy Res*. doi: [10.3389/fenrg.2022.863153](https://doi.org/10.3389/fenrg.2022.863153)
1048. Yang M., Liu D., Baral N.R., Lin C.Y., Simmons B.A., Gladden J.M., Eudes A., Scown C.D. (2022) "Comparing in planta accumulation with microbial routes to set targets for a cost-competitive bioeconomy." *PNAS*. doi: [10.1073/pnas.2122309119](https://doi.org/10.1073/pnas.2122309119)
1049. Demarteau J., Epstein A. R., Christensen P. R., Abubekrov M., Wang H., Teat S. J., Seguin T. J., Chan C. W., Scown C. D., Russell T. P., Keasling J. D., Persson K. A., Helms B. A. (2022) "Circularity in mixed-plastic chemical recycling enabled by variable rates of polydiketoenamine hydrolysis." *Science advances*. doi: [10.1126/sciadv.abp8823](https://doi.org/10.1126/sciadv.abp8823)
1050. Lin H.-H., Chen, Y., Huo J., Shanks B.H. (2022) "Selective Ammonolysis of Bio-derived Esters for Biobased Amide Synthesis." *ACS Omega*. doi: [10.1021/acsomega.1c04750](https://doi.org/10.1021/acsomega.1c04750)
1051. Alamos S., Shih P. (2022) "Synthetic gene circuits take root." *Science*. doi: [10.1126/science.add6805](https://doi.org/10.1126/science.add6805)
1052. Mohan M., Sale K.L., Kalb R., Simmons B.A., Gladden J., Singh S. (2022) "Multiscale Molecular Simulations Strategies for Understanding the Delignification Mechanism of Biomass in Cyrene." *ACS Sustainable Chemistry & Engineering*. doi: [10.1021/acssuschemeng.2c03373](https://doi.org/10.1021/acssuschemeng.2c03373)
1053. Liu A.K., Pereira J.H., Kehl A.J., Rosenberg D.J., Orr D.J., Chu S.K.S., Banda D.M., Hammel M., Adams P.D., Siegel J.B., Shih P.M. (2022) "Structural plasticity enables evolution and innovation of rubisco assemblies." *Science Advances*. doi: [10.1126/sciadv.adc9440](https://doi.org/10.1126/sciadv.adc9440)

1054. Zhang X., Zhang J., Yang H., He C., Ke Y., Singh S., Cheng G. (2022) "Determination of the Structures of Lignin Subunits and Nanoparticles in Solution by Small-Angle Neutron Scattering: Towards Improving Lignin Valorization." *ChemSusChem*. doi: [10.1002/cssc.202201230](https://doi.org/10.1002/cssc.202201230)
1055. Carruthers D.N., Lee T.S. (2022) "Translating advances in microbial bioproduction to sustainable biotechnology." *Front. Bioeng. Biotechnol.* doi: [10.3389/fbioe.2022.968437](https://doi.org/10.3389/fbioe.2022.968437)
1056. Ferreira S.S., Goeminne G., Simões M.S., de Almeida Pina A.V., de Lima L.G.A., Pezard J., Gutiérrez A., Rencoret J., Mortimer J.C., Del Río J.C., Boerjan W., Cesarino I. (2022) "Transcriptional and metabolic reprogramming associated with internode development and reduced cinnamyl alcohol dehydrogenase activity in sorghum." *J Ex Bot.* doi: [10.1093/jxb/erac300](https://doi.org/10.1093/jxb/erac300)
1057. Baral N.R., Mishra S.K., George A., Gautam S., Mishra U., Scown C.D. (2022) "Multifunctional landscapes for dedicated bioenergy crops lead to low-carbon market-competitive biofuels." *Renewable and Sustainable Energy Reviews*. doi: [10.1016/j.rser.2022.112857](https://doi.org/10.1016/j.rser.2022.112857)
1058. Tian Y., Yang M., Lin C.Y., Park J.H., Wu C.Y., Kakumanu R., De Ben C., Dalton J., Vuu K., Shih P., Baidoo E., Temple S., Putnam D., Scheller H., Scown C., Eudes A. (2022) "Expression of Dehydroshikimate Dehydratase in Sorghum Improves Biomass Yield, Accumulation of Protocatechuate, and Biorefinery Economics." *ACS Sustainable Chemistry & Engineering*. doi: [10.1021/acssuschemeng.2c01160](https://doi.org/10.1021/acssuschemeng.2c01160)
1059. Pham L.T.M., Deng K., Northen T., Singer S., Adams P., Simmons B., Sale K. (2022) "Heterologous expression, characterization, and comparison of laccases from the white rot causing basidiomycete *Cerrena unicolor*." *Catalysis Research*. Doi: [10.21926/cr.2203028](https://doi.org/10.21926/cr.2203028)
1060. Perlo V., Furtado A., Botha F.C., Margarido G.R.A., Hodgson-Kratky K., Choudhary H., Gladden J., Simmons B., Henry R.J. (2022) "Transcriptome and metabolome integration in sugarcane through culm development." *Food Energy Security*. doi: [10.1002/fes3.421](https://doi.org/10.1002/fes3.421)
1061. Choudhary H., Pidatala V.R., Mohan M., Simmons B.A., Gladden J.M., Singh S. (2022) "Renewable Schiff-Base Ionic Liquids for Lignocellulosic Biomass Pretreatment." *Molecules*. doi: [10.3390/molecules27196278](https://doi.org/10.3390/molecules27196278)
1062. Czajka J.J., Banerjee D., Eng T., Menasalvas J., Yan C., Munoz Munoz N., Poirier B.C., Kim Y.M., Baker S.E., Tang Y.J., Mukhopadhyay A. (2022) "Tuning a high performing multiplexed-CRISPRi *Pseudomonas putida* strain to further enhance indigoidine production." *Metabolic Engineering Communications*. doi: [10.1016/j.mec.2022.e00206](https://doi.org/10.1016/j.mec.2022.e00206)
1063. Lin C.-Y., Tian Y., Nelson-Vasilchik K., Hague J., Kakumanu R., Lee M.Y., Pidatala V.R., Trinh J., De Ben C.M., Dalton J., Northen T.R., Baidoo E.E.K., Simmons B.A., Gladden J.M., Scown C.D., Putnam D.H., Kausch A.P., Scheller H.V., Eudes A. (2022) "Engineering sorghum for higher 4-hydroxybenzoic acid content". *Metabolic Engineering Communications*. doi: [10.1016/j.mec.2022.e00207](https://doi.org/10.1016/j.mec.2022.e00207)
1064. Achinivu E.C., Cabrera M., Umar A., Yang M., Baral N.R., Scown C.D., Simmons B.A., Gladden J.M. (2022) "In Situ Synthesis of Protic Ionic Liquids for Biomass Pretreatment." *ACS Sustainable Chem. Eng.* doi: [10.1021/acssuschemeng.2c01211](https://doi.org/10.1021/acssuschemeng.2c01211)

JBEI-Enabled Publications:

10. Cole M.E., Ceja-Navarro J.A., Mikaelyan A. (2021) "The power of poop: Defecation behaviors and social hygiene in insects." *PLoS Pathog.* [doi: 10.1371/journal.ppat.1009964](https://doi.org/10.1371/journal.ppat.1009964)
11. Orner K.D., Smith S.J., Breunig H.M., Scown C.D., Nelson K.L. (2021) "Fertilizer demand and potential supply through nutrient recovery from organic waste digestate in California." *Water Res.* [doi: 10.1016/j.watres.2021.117717](https://doi.org/10.1016/j.watres.2021.117717)
12. Jhu M.Y., Farhi M., Wang L., Philbrook R.N., Belcher M.S., Nakayama H., Zumstein K.S., Rowland S.D., Ron M., Shih P.M., Sinha N.R. (2022) "Heinz resistant tomato cultivars exhibit a lignin-based resistance to field dodder (*Cuscuta campestris*) parasitism." *Plant Physiology.* [doi: 10.1093/plphys/kiac024](https://doi.org/10.1093/plphys/kiac024)
13. Mackelprang R., Adamala K.P., Aurand E.R., Diggans J.C., Ellington A.D., Evans S.W., Fortman J.L.C., Hillson N.J., Hinman A.W., Isaacs F.J., Medford J.I., Mamaghani S., Moon T.S., Palmer M.J., Peccoud J., Vitalis E.A., Hook-Barnard I., Friedman D.C. (2022) "Making Security Viral: Shifting Engineering Biology Culture and Publishing." *ACS Synthetic Biology* [doi: 10.1021/acssynbio.1c00324](https://doi.org/10.1021/acssynbio.1c00324)
14. Breunig H., Smith S., Rao L., Robinson A., Kinson J., Thornton R., Scown C.D., Rapp V. (2022) "Economic and greenhouse gas analysis of regional bioenergy-powered district energy systems in California." *Resources, Conservation and Recycling.* [doi: 10.1016/j.resconrec.2022.106187](https://doi.org/10.1016/j.resconrec.2022.106187).
15. Demarteau J., Vora N., Keasling J.D., Helms B.A., Scown C.D. (2022) "Lower-Cost, Lower-Carbon Production of Circular Polydiketoenamine Plastics." *ACS Sustainable Chem. Eng.* 10, 8, 2740–2749. [doi: 10.1021/acssuschemeng.1c07851](https://doi.org/10.1021/acssuschemeng.1c07851)
16. Ullah I., Chen Z., Xie Y., Khan S.S., Singh S., Yu C., Cheng G. (2022) "Recent advances in biological activities of lignin and emerging biomedical applications: A short review." *International J Biol Macromolecules.* [doi: 10.1016/j.ijbiomac.2022.03.182](https://doi.org/10.1016/j.ijbiomac.2022.03.182)
17. Mhatre A., Shinde S., Jha A. K., Rodriguez A., Wardak Z., Jansen A., Gladden J. M., George A., Davis R. W., Varman A. M. (2022) "Corynebacterium glutamicum as an Efficient Omnivorous Microbial Host for the Bioconversion of Lignocellulosic Biomass." *Frontiers in bioengineering and biotechnology.* [doi: 10.3389/fbioe.2022.827386](https://doi.org/10.3389/fbioe.2022.827386)
18. Barnum C. R., Endelman B. J., Ornelas I. J., Pignolet R. M., Shih P. M. (2022) "Optimization of Heterologous Glucoraphanin Production In Planta." *ACS synthetic biology.* [doi: 10.1021/acssynbio.2c00030](https://doi.org/10.1021/acssynbio.2c00030)
19. Macdonald S. S., Pereira J. H., Liu F., Tegl G., DeGiovanni A., Wardman J. F., Deutsch S., Yoshikuni Y., Adams P. D., Withers S. G. (2022) "A Synthetic Gene Library Yields a Previously Unknown Glycoside Phosphorylase That Degrades and Assembles Poly- β -1,3-GlcNAc, Completing the Suite of β -Linked GlcNAc Polysaccharides." *ACS central science.* [doi: 10.1021/acscentsci.1c01570](https://doi.org/10.1021/acscentsci.1c01570)
20. Sirirungruang S., Ad O., Privalsky T. M., Ramesh S., Sax J. L., Dong H., Baidoo E., Amer B., Khosla C., Chang M. (2022) "Engineering site-selective incorporation of fluorine into polyketides." *Nature chemical biology.* [doi: 10.1038/s41589-022-01070-y](https://doi.org/10.1038/s41589-022-01070-y)
21. Zhang J., Zou D., Zhai S., Yan Y., Yang H., He C., Ke Y., Singh S., Cheng G. (2022) "Enhancing the interaction between cellulose and dilute aqueous ionic liquid solutions

- and its implication to ionic liquid recycling and reuse.” *Carbohydrate Polymers*. doi: [10.1016/j.carbpol.2021.118848](https://doi.org/10.1016/j.carbpol.2021.118848)
22. Blay V., Radivojevic T., Allen J. E., Hudson C. M., Garcia Martin H. (2022) “MACAW: An Accessible Tool for Molecular Embedding and Inverse Molecular Design.” *Journal of chemical information and modeling*. doi: [10.1021/acs.jcim.2c00229](https://doi.org/10.1021/acs.jcim.2c00229)
 23. Leggieri P.A., Valentine M.T., O'Malley M.A. (2022) “Biofilm disruption enhances growth rate and carbohydrate-active enzyme production in anaerobic fungi.” *Bioresour Technol*. doi: [10.1016/j.biortech.2022.127361](https://doi.org/10.1016/j.biortech.2022.127361)
 24. Zhang J., Hansen L.G., Gudich O., Viehrig K., Lassen L.M.M., Schrübbers L., Adhikari K.B., Rubaszka P., Carrasquer-Alvarez E., Chen L., D'Ambrosio V., Lehka B., Haidar A.K., Nallapareddy S., Giannakou K., Laloux M., Arsovska D., Jørgensen M.A.K., Chan L.J.G., Kristensen M., Christensen H.B., Sudarsan S., Stander E.A., Baidoo E., Petzold C.J., Wulff T., O'Connor S.E., Courdavault V., Jensen M.K., Keasling J.D. (2022) “A microbial supply chain for production of the anti-cancer drug vinblastine.” *Nature*. doi: [10.1038/s41586-022-05157-3](https://doi.org/10.1038/s41586-022-05157-3)
 25. Otoupal, P. B., Cress, B. F., Doudna, J. A., & Schoeniger, J. S. (2022). CRISPR-RNAa: targeted activation of translation using dCas13 fusions to translation initiation factors. *Nucleic acids research*, 50(15), 8986–8998. Advance online publication. <https://doi.org/10.1093/nar/gkac680>
 26. Pomraning K.R., Dai Z., Munoz N., Kim Y.M., Gao Y., Deng S., Lemmon T., Swita M.S., Zucker J.D., Kim J., Mondo S.J., Panisko E., Burnet M.C., Webb-Robertson B.M., Hofstad B., Baker S.E., Burnum-Johnson K.E., Magnuson J.K. (2022) “Itaconic acid production is regulated by LaeA in *Aspergillus pseudoterreus*.” *Metab Eng Commun*. doi: [10.1016/j.mec.2022.e00203](https://doi.org/10.1016/j.mec.2022.e00203)
 27. Turumtay H. (2022) “Whole-genome sequencing-based characteristics of *Escherichia coli* Rize-53 isolate from Turkey.” *Adv Clin Exp Med*. doi: [10.17219/acem/152704](https://doi.org/10.17219/acem/152704)
 28. Rosi M., Russell B., Kristensen L.G., Farquhar E.R., Jain R., Abel D., Sullivan M., Costello S.M., Agustina D.M., Chen Y., Marqusee S., Petzold C.J., Kerfeld C.A., DePonte D.P., Farahmand F., Gupta S., Ralston C.Y. (2022) “An automated liquid jet for fluorescence dosimetry and microsecond radiolytic labeling of proteins.” *Commun Biol*. doi: [10.1038/s42003-022-03775-1](https://doi.org/10.1038/s42003-022-03775-1)