

2020 Biochemistry and Biophysics publications

From the *Barbar* group

Jespersen N, **Barbar E.J.** (2020). [Emerging Features of Linear Motif-Binding Hub Proteins](#). *Cell* Feb 20. <https://doi.org/10.1016/j.tibs.2020.01.004>

Reardon PN, Jara KA, Rolland AD, Smith DA, Hoang HTM, Prell JS, **Barbar EJ.** [The dynein light chain 8 \(LC8\) binds predominantly "in-register" to a multivalent intrinsically disordered partner](#). *J Biol Chem.* 2020 Apr 10;295(15):4912-4922. doi: 10.1074/jbc.RA119.011653. Epub 2020 Mar 5. PMID: 32139510; PMCID: PMC7152752.

Loening NM, Saravanan S, Jespersen NE, Jara K, **Barbar E.** [Interplay of Disorder and Sequence Specificity in the Formation of Stable Dynein-Dynaactin Complexes](#). *Biophys J.* 2020 Sep 1;119(5):950-965. doi: 10.1016/j.bpj.2020.07.023. Epub 2020 Aug 5. PMID: 32814057; PMCID: PMC7474177.

From the *Barbar* and *Qiu* group

Tseng KF, Mickolajczyk KJ, Feng G, Feng Q, Kwok ES, Howe J, **Barbar EJ,** Dawson SC, Hancock WO, **Qiu W.** [The Tail of Kinesin-14a in Giardia Is a Dual Regulator of Motility](#). *Curr Biol.* 2020 Sep 21;30(18):3664-3671.e4. doi: 10.1016/j.cub.2020.06.090. Epub 2020 Jul 30. PMID: 32735815; PMCID: PMC7511442.

From the *Beckman* group

Vimer S, Ben-Nissan G, Morgenstern D, Kumar-Deshmukh F, Polkinghorn C, Quintyn RS, Vasil'ev YV, **Beckman JS,** Elad N, Wysocki VH, Sharon M. [Comparative Structural Analysis of 20S Proteasome Ortholog Protein Complexes by Native Mass Spectrometry](#). *ACS Cent Sci.* 2020 Apr 22;6(4):573-588. doi: 10.1021/acscentsci.0c00080. Epub 2020 Apr 10. PMID: 32342007; PMCID: PMC7181328.

Williams JP, Morrison LJ, Brown JM, **Beckman JS,** Voinov VG, Lermyte F. [Top-Down Characterization of Denatured Proteins and Native Protein Complexes Using Electron Capture Dissociation Implemented within a Modified Ion Mobility-Mass Spectrometer](#). *Anal Chem.* 2020 Mar 3;92(5):3674-3681. doi: 10.1021/acs.analchem.9b04763. Epub 2020 Feb 11. PMID: 31999103; PMCID: PMC7847745.

From the *Cooley* group

Tugaeva KV, Remeeva A, Gushchin I, **Cooley RB,** Sluchanko NN. [Design, expression, purification and crystallization of human 14-3-3 \$\zeta\$ protein chimera with phosphopeptide from](#)

[proapoptotic protein BAD](#). Protein Expr Purif. 2020 Nov;175:105707. doi: 10.1016/j.pep.2020.105707. Epub 2020 Jul 16. PMID: 32682909.

From the *Freitag* group

Feurtey A, Lorrain C, Croll D, Eschenbrenner C, **Freitag M**, Habig M, Haueisen J, Möller M, Schotanus K, Stukenbrock EH. [Genome compartmentalization predates species divergence in the plant pathogen genus *Zymoseptoria*](#). BMC Genomics. 2020 Aug 26;21(1):588. doi: 10.1186/s12864-020-06871-w. PMID: 32842972; PMCID: PMC7448473.

Ridenour JB, Möller M, **Freitag M**. [Polycomb Repression without Bristles: Facultative Heterochromatin and Genome Stability in Fungi](#). Genes (Basel). 2020 Jun 9;11(6):638. doi: 10.3390/genes11060638. PMID: 32527036; PMCID: PMC7348808.

Geiser DM . . . , **Freitag M** . . . , Zhang X. [Phylogenomic Analysis of a 55.1-kb 19-Gene Dataset Resolves a Monophyletic *Fusarium* that Includes the *Fusarium solani* Species Complex](#). Phytopathology. 2021 Sep 9:PHYTO08200330LE. doi: 10.1094/PHYTO-08-20-0330-LE. Epub ahead of print. PMID: 33200960.

Feurtey A, Lorrain C, Croll D, Eschenbrenner C, Freitag M, Habig M, Haueisen J, Möller M, Schotanus K, Stukenbrock EH. (2020) Genome compartmentalization predates species divergence in the plant pathogen genus *Zymoseptoria*. BMC Genomics. 2020 21: 588. doi: 10.1186/s12864-020-06871-w. PMC7448473.

Ridenour JB, Möller M, Freitag M (2020) Polycomb Repression without Bristles: Facultative Heterochromatin and Genome Stability in Fungi. Genes 11: 638. doi: 10.3390/genes11060638. PMC7348808.

From the *Gombart* group

Calder PC, Carr AC, **Gombart AF**, Eggersdorfer M. [Reply to "Overstated Claims of Efficacy and Safety. Comment On: Optimal Nutritional Status for a Well-Functioning Immune System Is an Important Factor to Protect against Viral Infections. *Nutrients* 2020, 12, 1181"](#). Nutrients. 2020 Sep 3;12(9):2696. doi: 10.3390/nu12092696. PMID: 32899398; PMCID: PMC7551403.

Calder PC, Carr AC, **Gombart AF**, Eggersdorfer M. [Reply to "Comment on: Optimal Nutritional Status for a Well-Functioning Immune System Is an Important Factor to Protect against Viral Infections. *Nutrients* 2020, 12, 1181"](#). Nutrients. 2020 Aug 3;12(8):2326. doi: 10.3390/nu12082326. PMID: 32756516; PMCID: PMC7469053.

Fantacone ML, Lowry MB, Uesugi SL, Michels AJ, Choi J, Leonard SW, Gombart SK, Gombart JS, Bobe G, **Gombart AF**. [The Effect of a Multivitamin and Mineral Supplement on Immune Function in Healthy Older Adults: A Double-Blind, Randomized, Controlled Trial](#). Nutrients. 2020 Aug 14;12(8):2447. doi: 10.3390/nu12082447. PMID: 32823974; PMCID: PMC7468989.

Calder PC, Carr AC, **Gombart AF**, Eggersdorfer M. [Reply to "Comment on: Optimal Nutritional Status for a Well-Functioning Immune System Is an Important Factor to Protect against Viral Infections. *Nutrients* 2020, 12, 1181"](#). *Nutrients*. 2020 Aug 3;12(8):2326. doi: 10.3390/nu12082326. PMID: 32756516; PMCID: PMC7469053.

Paraiso IL, Revel JS, Choi J, Miranda CL, Lak P, Kioussi C, Bobe G, **Gombart AF**, Raber J, Maier CS, Stevens JF. [Targeting the Liver-Brain Axis with Hop-Derived Flavonoids Improves Lipid Metabolism and Cognitive Performance in Mice](#). *Mol Nutr Food Res*. 2020 Aug;64(15):e2000341. doi: 10.1002/mnfr.202000341. Epub 2020 Jul 6. PMID: 32627931.

Logan IE, Bobe G, Miranda CL, Vasquez-Perez S, Choi J, Lowry MB, Sharpton TJ, Morgun A, Maier CS, Stevens JF, Shulzhenko N, **Gombart AF**. [Germ-Free Swiss Webster Mice on a High-Fat Diet Develop Obesity, Hyperglycemia, and Dyslipidemia](#). *Microorganisms*. 2020 Apr 5;8(4):520. doi: 10.3390/microorganisms8040520. PMID: 32260528; PMCID: PMC7232377.

Calder PC, Carr AC, **Gombart AF**, Eggersdorfer M. [Optimal Nutritional Status for a Well-Functioning Immune System Is an Important Factor to Protect against Viral Infections](#). *Nutrients*. 2020 Apr 23;12(4):1181. doi: 10.3390/nu12041181. PMID: 32340216; PMCID: PMC7230749.

Gombart AF, Pierre A, Maggini S. [A Review of Micronutrients and the Immune System-Working in Harmony to Reduce the Risk of Infection](#). *Nutrients*. 2020 Jan 16;12(1):236. doi: 10.3390/nu12010236. PMID: 31963293; PMCID: PMC7019735.

Lowry MB, Guo C, Zhang Y, Fantacone ML, Logan IE, Campbell Y, Zhang W, Le M, Indra AK, Ganguli-Indra G, Xie J, Gallo RL, Koeffler HP, **Gombart AF**. [A mouse model for vitamin D-induced human cathelicidin antimicrobial peptide gene expression](#). *J Steroid Biochem Mol Biol*. 2020 Apr;198:105552. doi: 10.1016/j.jsbmb.2019.105552. PMID: 31783153; PMCID: PMC7089838.

Zhang Y, Bobe G, Revel JS, Rodrigues RR, Sharpton TJ, Fantacone ML, Raslan K, Miranda CL, Lowry MB, Blakemore PR, Morgun A, Shulzhenko N, Maier CS, Stevens JF, **Gombart AF**. [Improvements in Metabolic Syndrome by Xanthohumol Derivatives Are Linked to Altered Gut Microbiota and Bile Acid Metabolism](#). *Mol Nutr Food Res*. 2020 Jan;64(1):e1900789. doi: 10.1002/mnfr.201900789. PMID: 31755244; PMCID: PMC7029812.

Kulkarni NN, Takahashi T, Sanford JA, Tong Y, **Gombart AF**, Hinds B, Cheng JY, Gallo RL. [Innate Immune Dysfunction in Rosacea Promotes Photosensitivity and Vascular Adhesion Molecule Expression](#). *J Invest Dermatol*. 2020 Mar;140(3):645-655.e6. doi: 10.1016/j.jid.2019.08.436. PMID: 31472105.

From the *Hagen* group

Bobe G, Michels AJ, Zhang WJ, Purnell JQ, Woffendin C, Pereira C, Vita JA, Thomas NO, Traber MG, Frei B, **Hagen TM**. [A Randomized Controlled Trial of Long-Term \(R\)- \$\alpha\$ -Lipoic Acid Supplementation Promotes Weight Loss in Overweight or Obese Adults without Altering Baseline Elevated Plasma Triglyceride Concentrations](#). *J Nutr*. 2020 Sep 1;150(9):2336-2345. doi: 10.1093/jn/nxaa203. PMID: 32692358; PMCID: PMC7540064.

From the *Hendrix* group

Long DM, Frame AK, Reardon PN, Cumming RC, Hendrix DA, Kretzschmar D, Giebultowicz JM. [Lactate dehydrogenase expression modulates longevity and neurodegeneration in *Drosophila melanogaster*](#). *Aging* (Albany NY). 2020 Jun 2;12(11):10041-10058. doi: 10.18632/aging.103373. Epub 2020 Jun 2. PMID: 32484787; PMCID: PMC7346061.

Kashyap A, Rhodes A, Kronmiller B, Berger J, Champagne A, Davis EW, Finnegan MV, Geniza M, **Hendrix DA**, Löhr CV, Petro VM, Sharpton TJ, Wells J, Epps CW, Jaiswal P, Tyler BM, Ramsey SA. [Pan-tissue transcriptome analysis of long noncoding RNAs in the American beaver *Castor canadensis*](#). *BMC Genomics*. 2020 Feb 12;21(1):153. doi: 10.1186/s12864-019-6432-4. PMID: 32050897; PMCID: PMC7014947.

Zhang Z, Garzotto M, Davis EW 2nd, Mori M, Stoller WA, Farris PE, Wong CP, Beaver LM, Thomas GV, Williams DE, Dashwood RH, **Hendrix DA**, Ho E, Shannon J. [Sulforaphane Bioavailability and Chemopreventive Activity in Men Presenting for Biopsy of the Prostate Gland: A Randomized Controlled Trial](#). *Nutr Cancer*. 2020;72(1):74-87. doi: 10.1080/01635581.2019.1619783. Epub 2019 Jun 1. PMID: 31155953; PMCID: PMC8244813.

From the *Johnson* group

Golbek TW, Otto SC, Roeters SJ, Weidner T, **Johnson CP**, Baio JE. [Direct Evidence That Mutations within Dysferlin's C2A Domain Inhibit Lipid Clustering](#). *J Phys Chem B*. 2021 Jan 14;125(1):148-157. doi: 10.1021/acs.jpcc.0c07143. Epub 2020 Dec 23. PMID: 33355462.

From the *Mehl* group

Yang B, Kwon K, Jana S, Kim S, Avila-Crump S, Tae G, **Mehl RA**, Kwon I. [Temporal Control of Efficient *In Vivo* Bioconjugation Using a Genetically Encoded Tetrazine-Mediated Inverse-Electron-Demand Diels-Alder Reaction](#). *Bioconjug Chem*. 2020 Oct 21;31(10):2456-2464. doi: 10.1021/acs.bioconjchem.0c00497. Epub 2020 Oct 9. PMID: 33034448.

Oscar BG, Zhu L, Wolfendeen H, Rozanov ND, Chang A, Stout KT, Sandwisch JW, Porter JJ, **Mehl RA**, Fang C. [Dissecting Optical Response and Molecular Structure of Fluorescent Proteins With Non-canonical Chromophores](#). *Front Mol Biosci*. 2020 Jul 7;7:131. doi: 10.3389/fmolb.2020.00131. PMID: 32733917; PMCID: PMC7358599.

Beyer JN, Hosseinzadeh P, Gottfried-Lee I, Van Fossen EM, Zhu P, Bednar RM, Karplus PA, **Mehl RA**, Cooley RB. [Overcoming Near-Cognate Suppression in a Release Factor 1-Deficient Host with an Improved Nitro-Tyrosine tRNA Synthetase](#). *J Mol Biol*. 2020 Jul 24;432(16):4690-4704. doi: 10.1016/j.jmb.2020.06.014. Epub 2020 Jun 19. PMID: 32569745; PMCID: PMC7665880.

Jang HS, Jana S, Blizzard RJ, Meeuwsen JC, **Mehl RA**. [Access to Faster Eukaryotic Cell Labeling with Encoded Tetrazine Amino Acids](#). *J Am Chem Soc*. 2020 Apr 22;142(16):7245-7249. doi: 10.1021/jacs.9b11520. Epub 2020 Apr 10. PMID: 32251579; PMCID: PMC7771912.

Jang HS, Gu X, Cooley RB, Porter JJ, Henson RL, Willi T, DiDonato JA, Hazen SL, **Mehl RA**. [Efficient Site-Specific Prokaryotic and Eukaryotic Incorporation of Halotyrosine Amino Acids into Proteins](#). ACS Chem Biol. 2020 Feb 21;15(2):562-574. doi: 10.1021/acscchembio.9b01026. Epub 2020 Feb 10. Erratum in: ACS Chem Biol. 2021 Jan 15;16(1):236. PMID: 31994864; PMCID: PMC7207724.

From the *Mehl* and *Cooley* group

Beyer JN, Hosseinzadeh P, Gottfried-Lee I, Van Fossen EM, Zhu P, Bednar RM, Karplus PA, **Mehl RA**, **Cooley RB**. [Overcoming Near-Cognate Suppression in a Release Factor 1-Deficient Host with an Improved Nitro-Tyrosine tRNA Synthetase](#). J Mol Biol. 2020 Jul 24;432(16):4690-4704. doi: 10.1016/j.jmb.2020.06.014. Epub 2020 Jun 19. PMID: 32569745; PMCID: PMC7665880.

Jang HS, Gu X, **Cooley RB**, Porter JJ, Henson RL, Willi T, DiDonato JA, Hazen SL, **Mehl RA**. [Efficient Site-Specific Prokaryotic and Eukaryotic Incorporation of Halotyrosine Amino Acids into Proteins](#). ACS Chem Biol. 2020 Feb 21;15(2):562-574. doi: 10.1021/acscchembio.9b01026. Epub 2020 Feb 10. Erratum in: ACS Chem Biol. 2021 Jan 15;16(1):236. PMID: 31994864; PMCID: PMC7207724.

From the *Merrill* group

Breyse DH, Boone RM, Long CM, Merrill ME, Schaupp CM, White CC, Kavanagh TJ, Schmidt EE, **Merrill GF**. [Carbonyl Reductase 1 Plays a Significant Role in Converting Doxorubicin to Cardiotoxic Doxorubicinol in Mouse Liver, but the Majority of the Doxorubicinol-Forming Activity Remains Unidentified](#). Drug Metab Dispos. 2020 Mar;48(3):187-197. doi: 10.1124/dmd.119.089326. Epub 2020 Jan 18. PMID: 31955137; PMCID: PMC7011114.

From the *N/A* group

Moriarty NW, Liebschner D, Tronrud DE, Adams PD. [Arginine off-kilter: guanidinium is not as planar as restraints denote](#). Acta Crystallogr D Struct Biol. 2020 Dec 1;76(Pt 12):1159-1166. doi: 10.1107/S2059798320013534. Epub 2020 Nov 24. PMID: 33263321; PMCID: PMC7709202.

From the *Nyarko* group

Baker K, Kwok E, Reardon P, Rodriguez DJ, Rolland AD, Wilson JW, Prell JS, **Nyarko A**. [Yorkie-Warts Complexes are an Ensemble of Interconverting Conformers Formed by](#)

[Multivalent Interactions](#). J Mol Biol. 2021 Feb 19;433(4):166776. doi: 10.1016/j.jmb.2020.166776. Epub 2020 Dec 28. PMID: 33383033.

From the *Perez* group

Sunchu B, Riordan RT, Yu Z, Almog I, Dimas-Munoz J, Drake AC, **Perez VI**. [Aggresome-Like Formation Promotes Resistance to Proteotoxicity in Cells from Long-Lived Species](#). J Gerontol A Biol Sci Med Sci. 2020 Jul 13;75(8):1439-1447. doi: 10.1093/gerona/glaa069. PMID: 32515471; PMCID: PMC7357592.

Díaz-Valdivia NI, Díaz J, Contreras P, Campos A, Rojas-Celis V, Burgos-Ravanal RA, Lobos-González L, Torres VA, **Perez VI**, Frei B, Leyton L, Quest AFG. [The non-receptor tyrosine phosphatase type 14 blocks caveolin-1-enhanced cancer cell metastasis](#). Oncogene. 2020 Apr;39(18):3693-3709. doi: 10.1038/s41388-020-1242-3. Epub 2020 Mar 9. PMID: 32152405; PMCID: PMC7190567.

From the *Qiu* group

Xian Y, Xie Y, Silva SM, Karki CB, **Qiu W**, Li L. [StructureMan: A Structure Manipulation Tool to Study Large Scale Biomolecular Interactions](#). Front Mol Biosci. 2021 Jan 11;7:627087. doi: 10.3389/fmolb.2020.627087. PMID: 33505991; PMCID: PMC7831659.

Swentowsky KW, Gent JJ, Lowry EG, Schubert V, Ran X, Tseng KF, Harkess AE, **Qiu W**, Dawe RK. [Distinct kinesin motors drive two types of maize neocentromeres](#). Genes Dev. 2020 Sep 1;34(17-18):1239-1251. doi: 10.1101/gad.340679.120. Epub 2020 Aug 20. PMID: 32820038; PMCID: PMC7462060.