**Joseph D. Yesselman**

***Curriculum Vitae***

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**Education**

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| **2008** – **2013** | Ph.D., Biophysics; University of Michigan, MI |
| **2003** – **2008** | B.S., Physics; University of Rochester, NY |

**Professional**

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| **2019** **– present** | Assistant Professor, Department of Chemistry, University of Nebraska-Lincoln |
| **2013** **– 2019** | NIH NRSA postdoctoral fellow (with R. Das, Stanford University)  |

**Honors and Awards**

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| **2015 – 2017** | NIH Ruth L. Kirschstein National Research Service Award Postdoctoral Fellowship, Stanford University |
| **2014 – 2015** | Dean’s Fellowship, Stanford University  |
| **2014** | Best Poster at RosettaCon |
| **2012** | Rackham Travel Grant to attend American Chemical Society, University of Michigan  |
| **2011** | Rackham Travel Grant to attend Biophysical Society, University of Michigan  |
| **2008 – 2009** | Biophysics Fellowship, University of Michigan |
| **2007 – 2008**  | Take Five Scholarship to Study Artificial Intelligence, University of Rochester |
| **2007** | Research Experiences for Undergraduates in Physics, University of Rochester |

**Publications**

\*Contributed equally

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| 17. | \*Kappel K, \*Zhang K, Su Z, Kladwang W, Li S, Pintilie G, Topkar VV, Rangan R, Zheludev IN, Watkins AM, **Yesselman JD**, Chiu W, Das R “Ribosolve: Rapid determination of three-dimensional RNA-only structures”, *submitted*, *Science*. Preprint: https://www.biorxiv.org/content/10.1101/717801v1 |
| 16. | \***Yesselman JD**, \*Denny SK, Bisaria N, Herschlag D, Greenleaf WJ, Das R (2019) “RNA tertiary structure energetics predicted by an ensemble model of the RNA double helix”, *in press**, epub available, Proceedings of the National Academy of Sciences U.S.A.*  |
| 15. | **Yesselman JD**, Eiler D, Carlson ED, Gotrik MR, d'Aquino AE, Ooms AN, Kladwang W, Shi X, Costantino D, Lucks JB, Herschlag D, Jewett MC, Kieft JS, Das R (2019) “Computational Design of Asymmetric Three-dimensional RNA Structures and Function”, *in press, epub available*, *Nature Nanotechnology.* |
| 14. | \*Denny SK, \*BisariaN, **Yesselman JD**, Das R, Herschlag D, Greenleaf WJ, (2018) “High-throughput investigation of diverse junction elements in RNA tertiary folding”, *Cell* 174, 1–14 |
| 13. | \***Yesselman JD**, \*Tian S, Lui X, Shi L, Li JB, Das R (2017) "Updates to the RNA Mapping Database (RMDB), Version 2", *Nucleic Acids Research* 46 (D1): D375 - D379 |
| 12. | \*Cheng CY, \*Kladwang W, **Yesselman JD**, Das R, (2017) “Serendipitous high-resolution RNA structural information overlooked in dimethyl sulfate mapping experiments”, *Proceedings of the National Academy of Sciences U.S.A.* 114 (37) 9876-9881 |
| 11. | Wang Y, **Yesselman JD**, Zhang, Q, Kang M, Feigon J (2016) “Structural conservation in the template/pseudoknot domain of vertebrate telomerase RNA from teleost fish to human”, *Proceedings of the National Academy of Sciences U.S.A.*113(35): 5125–5134 |
| 10. | Sengupta RN, Van Schie SNS, Giambasu G, Dai Q, **Yesselman JD**, York D, Piccirilli JA, Herschlag D (2016) “An active site rearrangement within the Tetrahymena group I ribozyme releases nonproductive interactions”, *RNA* 22: 32–48 |
| 9. | **Yesselman JD** and Das R (2016)“Modeling small non-canonical RNA motifs with the Rosetta FARFAR server”, *Methods in Molecular Biology, RNA modeling* 1490: 187 - 98 |
| 8. | **Yesselman JD** and Das R (2015) “RNA-Redesign: A web server for fixed-backbone 3D design of RNA”, *Nucleic Acids Research* 43(W1): W498 - W501  |
| 7. | Tian, S, **Yesselman JD**, Cordero, P and Das, R(2015) “Primerize: automated primer assembly for transcribing non-coding RNA domains”, *Nucleic Acids Research* 43(W1): W522 – W526  |
| 6. | **\*Yesselman JD**, \*Horowitz S, Brooks CL III, Trievel RC (2015) “Frequent side chain methyl carbon-oxygen hydrogen bonding in proteins revealed by computational and stereochemical analysis of neutron structures”, *Proteins* 83(3):403-10 |
| 5. | Horowitz S, Dirk LM, **Yesselman JD**, Nimtz JS, Adhikari U, Mehl RA, Scheiner S, Houtz RL, Al-Hashimi HM, Trievel RC (2013) “Conservation and functional importance of carbon-oxygen hydrogen bonding in AdoMet-dependent methyltransferases”, *Journal of the American Chemical Society* 135(41):15536-48 |
| 4. | \*Knight, JL, \***Yesselman, JD**, Brooks, C. L. III (2013) “Assessing the Quality of Absolute Hydration Free Energies Among CHARMM-Compatible Ligand Parameterization Schemes”, *Journal of Computational Chemistry* 34: 983-903  |
| 3. | **Yesselman, JD**, Price, DJ, Knight, JL and Brooks, CL III (2012) “MATCH: An Atom-Typing Toolset for Molecular Mechanics Force Fields”, *Journal of Computational Chemistry* 33: 189–202 |
| 2. | Arthur EJ, **Yesselman, JD**, Brooks CL III (2011) “Predicting extreme pKa shifts in staphylococcal nuclease mutants with constant pH molecular dynamics”, *Proteins: Structure, Function and Bioinformatics* 79(12): 3276–3286 |
| 1. | Horowitz S, **Yesselman JD**, Al-Hashimi HM, Trievel RC (2011) “Direct evidence for methyl group coordination by carbon-oxygen hydrogen bonds in the lysine methyltransferase SET7/9”, *Journal of Biological Chemistry* 27: 18658-63 |

**Selected Conference Presentations**

See website for full list (http://josephyesselman.com/pagecv)

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| 10. | **YesselmanJD**, EilerD, Ooms AN, Kladwang W, Shi X, Costantino D, Herschlag D, Kieft JS, Das R (2017) **INVITED** “Automated Design of Three-Dimensional Asymmetric RNA Structures at Near-Atomic Accuracy” invited to give an oral presentation at Foundations of Nanoscience: Self-assembled Architectures and Devices, Snowbird, UT. |
| 9. | **YesselmanJD**, EilerD, Ooms AN, Kladwang W, Shi X, Costantino D, Herschlag D, Kieft JS, Das R (2017) “Automated Design of Three-Dimensional Asymmetric RNA Structures at Near-Atomic Accuracy”, selected to present a poster at Gordon Research Conference: RNA Nanotechnology, Ventura, CA. |
| 8. | **YesselmanJD**, Denny SK, Bisaria N, Herschlag D, Greenleaf WJ, Das R (2016) “Surprisingly Accurate Energetic Modeling Deconvolves Big Data on RNA 3D Folding”, selected to give an oral presentation at the RNA Society, Kyoto, Japan.  |
| 7. | **YesselmanJD**, EilerD, Ooms AN, Kladwang W, Shi X, Costantino D, Herschlag D, Kieft JS, Das R (2016) “Automated Design of Three-Dimensional Asymmetric RNA Structures at Near-Atomic Accuracy”, selected to present an oral presentation at Biochemistry Research Conference, Santa Cruz, CA. |
| 6. | **YesselmanJD**, Denny SK, Bisaria N, Herschlag D, Greenleaf WJ, Das R (2016) “Towards Accurate Energetic Modeling of RNA 3D Folding: Testing Simple Models with Lots of Data”, selected to present a poster at RosettaCon, Leavenworth, WA. |
| 5. | **YesselmanJD**, Denny SK, Bisaria N, Herschlag D, Greenleaf WJ, Das R (2015) “A Massively Parallel Approach to RNA Folding and Dynamics”, selected to present an oral presentation at Biochemistry Research Conference, Santa Cruz, CA. |
| 4. | **Yesselman JD**, Kladwang W, Das R (2015) “RNAMake: An Automated Design Toolkit for RNA 3D Structure”, selected to present a poster at the RNA Society, Madison, WA. |
| 3. | **Yesselman JD**, Das R (2014) “Toward Automated Design of RNA 3D Structure”, selected to present a poster at RosettaCon, Leavenworth, WA. **Selected for Best Poster**. |
| 2. | **Yesselman JD**, Das R (2014) “Toward Automated Design of RNA 3D Structure”, selected to present a poster at the UCSC symposium RNA Biology/RNA Therapeutics, San Francisco, CA. |
| 1. | **Yesselman JD**, Knight, JL, Al-Hashimi, HM, Brooks CL III (2012) “An Atom-Typing Toolset forCHARMM”,selected to present an oral presentation at the American Chemical Society meeting, San Diego, CA. |