

**Joanna S.G. Slusky**  
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## Appointments

### **University of Kansas**

Associate Professor of Molecular Biosciences	2020 – present
Associate Professor of Computational Biology	2020 – present
Docking Family Scholar	2017 – 2022
Assistant Professor of Molecular Biosciences	2014 – 2020
Assistant Professor of Computational Biology	2014 – 2020

### Academic training

Postdoctoral Fellow Advisor: Roland L. Dunbrack Jr. Fox Chase Cancer Center: Institute for Cancer Research NIH postdoctoral research training grant	2012 – 2014
Postdoctoral Fellow Advisor: Gunnar von Heijne Stockholm University: Biochemistry and Biophysics Human Frontier Science Program postdoctoral fellow	2008 – 2012
Ph.D. in Biochemistry and Molecular Biophysics University of Pennsylvania Advisor: William F. DeGrado NSF Graduate Research Fellow	Dec. 2007
A.B. in Chemistry Princeton University <i>Magna Cum Laude</i> Advisor: Robert J. Cava Minor in Material Science and Engineering.	May 2001

### Peer-Reviewed Publications

1. D. Montezano, R. Bernstein, M.M. Copeland, **J.S.G Slusky**. “Is It a Barrel? General Features of Transmembrane Beta Barrels from a Large Database”. *Proceedings of the National Academy of Sciences* 120:19, 2023 [[PNAS](#)]
2. V. Nanda, K.N. McGuinness, N. Fehon, R. Feehan, M. Miller, A. Mutter, J. Nam, J.E. AbuSalim, J.T. Atkinson, H. Heidari, N. Losada, J.D Kim, R.L. Koder, Y. Lu, J. Silberg, **J.S.G. Slusky**, P. Falkowski. “The energetics and evolution of oxidoreductases in deep time”. [[Authorea](#)] accepted at *Proteins: Structure, Function, Bioinformatics* 2023

3. R.M. Crean, **J.S.G. Slusky** P.M. Kasson, S.C.L. Kamerlin, “KIF – Key Interactions Finder: A Program to Identify the Key Molecular Interactions that Regulate Protein Conformational Changes”. *Journal of Chemical Physics* 158: 144114, 2023 [[JoCP](#)]
4. R. Feehan, M.M. Copeland, M.W. Franklin, **J.S.G. Slusky**. “MAHOMES II: A webserver for predicting if a metal binding site is enzymatic”. *Protein Science* 32:4 (2023) [[ProtSci](#)]
5. A.P. Ikujuni\*, S.J. Budiardjo\*, R. Dhar, **J.S.G. Slusky**. “Detergent headgroups control TolC folding in vitro”. *Biophysical Journal* 122:185 (2023) [\*co-first authors] [[BiophysJ](#)]
6. S.J. Budiardjo, J. Stevens, A. Caulkins, A.P. Ikujuni, V. Wimalasena, E. Firlar, D.A. Case, J.S. Biteen, J.T. Kaelber, **J.S.G. Slusky**, “Colicin E1 opens its hinge to plug TolC”. *eLife* 11:e73297 (2022) [[eLife](#)]
7. R. Feehan\* M.W. Franklin\*, **J.S.G. Slusky**. “Machine Learning Differentiates Enzymatic and Non-Enzymatic Metals in Proteins”. *Nature Communications* 12:1 3712 (2021) [\*co-first authors] [[Nature Communications](#)] [[very good by F1000](#)]
8. R. Feehan\*, D. Montezano\*, **J.S.G Slusky**. “Machine Learning for Enzyme Engineering, Selection, and Design”. *Protein Engineering Design and Selection* 34 (2021) [\*co-first authors] [[PEDS](#)]
9. R. Dhar, R. Feehan, **J.S.G. Slusky**. “Membrane Barrels Are Taller, Fatter, Inside-Out Soluble Barrels”. *Journal of Physical Chemistry B* 125:14, 3622 (2021) [[JoPCB](#)]
10. S.J. Budiardjo, A.I. Ikujuni, E. Firlar, A. Cordova, J.T. Kaelber, **J.S.G. Slusky**, “High Yield Preparation of Outer-Membrane Protein Efflux Pumps by *In Vitro* Refolding is Concentration Dependent”. *Journal of Membrane Biology*, Festschrift for Steven White (2021) [[JMBi](#)]
11. R. Dhar, **J.S.G. Slusky**. “Outer Membrane Protein Evolution”. *Current Opinion in Structural Biology* (2021) [[CurOpStructBio](#)]
12. Tan, S.K., Fong, K.P., Polizzi, N.F., Sternisha, A., **Slusky, J.S.G.**, Yoon, K., Degrado, W.F., Bennett, J.S. “Modulating Integrin  $\alpha$ IIb $\beta$ 3 Activity through Mutagenesis of Allosterically Regulated Inter-subunit Contacts”. *Biochemistry* 58, 3251–3259 (2019) [[Biochemistry](#)]
13. M.W. Franklin, S. N. Nepomnyachiy, R. Feehan, N. Ben-Tal, R. Kolodny, **J.S.G. Slusky**. “Evolutionary pathways of repeat protein topology in bacterial outer membrane proteins”. *eLife* 7:e40308 (2018) [[eLife](#)] [[eLife Insight](#)]
14. M.W. Franklin, S. N. Nepomnyachiy, R. Feehan, N. Ben-Tal, R. Kolodny, **J.S.G. Slusky**. “Efflux Pumps Represent Possible Evolutionary Convergence onto the Beta Barrel Fold”. *Structure* 26(9):1266-74 (2018) [[Structure](#)] [[very good by F1000](#)] [[cover image Sept 2018](#)]
15. M.W. Franklin, **J.S.G. Slusky**. “Tight Turns of Outer Membrane Beta-Barrels: An Analysis of Sequence, Structure, and Hydrogen Bonding”. *Journal of Molecular Biology* 430(18B):3251-65 (2018) [[JMB](#)]
16. **Slusky, J.S.G.** “Outer membrane protein design”. *Current Opinion in Structural Biology* 54:45-52 (2017) [[CurrOpStructBio](#)]
17. Kim, S., Patel, D.S., Park, S., **Slusky, J.S.G.**, Klauda, J.B., Widmalm, G., & Im, W. “Bilayer Properties of Lipid A from Various Gram-Negative Bacteria”. *Biophysical Journal* 111(8):1750-60 (2016) [[BJ](#)]
18. **J.S.G. Slusky\*** and R.L. Dunbrack. “Charge asymmetry in proteins of the outer membrane”. *Bioinformatics* 29(17):2122-8 (2013) \***corresponding author** [[Bioinformatics](#)]
19. P. Lloris-Garcerá, S. Seppälä, **J.S.G. Slusky**, M. Rapp, G. von Heijne. “Why Have Small Multidrug Resistance Proteins Not Evolved into Fused, Internally Duplicated Structures?”. *Journal of Molecular Biology* 426(11):2246-54 (2014) [[JMB](#)]

20. P. Lloris-Garcerá, **J.S.G. Slusky**, S. Seppälä, M. Prieß, L. V. Schäfer, G.von Heijne. “In vivo Trp-scanning of the Small Multidrug Resistance protein EmrE confirms anti-parallel 3D structure models”. *Journal of Molecular Biology* 425(22):4642-51 (2013) [[JMB](#)]
21. P. Lloris-Garcerá, F. Bianchi, **J.S.G. Slusky**, S. Seppälä, D.O. Daley, G.von Heijne. “Antiparallel dimers of the small multidrug-resistance protein EmrE are more stable than parallel dimers”. *Journal of Biological Chemistry* 287(31):26052-9 (2012) [[JBC](#)]
22. S.E. Dutton, E.D. Hanson, C.L. Broholm, **J.S. Slusky**, R.J Cava. “Magnetic properties of hole-doped SCGO, SrCr(8)Ga(4-x)M(x)O(19) (M=Zn, Mg, Cu)”. *Journal of physics-- Condensed matter*, 23(38):386001, (2011) [[JoP:CM](#)]
23. S. Seppälä, **J.S. Slusky**, P. Lloris-Garcerá, M. Rapp, G.von Heijne. “Control of membrane protein topology by a single C-terminal residue”. *Science* 328(5986):1698-700, (2010). [[Science](#)]
24. **J.S. Slusky**, H. Yin, W.F. DeGrado “Understanding membrane proteins: How to design inhibitors of transmembrane protein-protein interactions”. *Protein Engineering* (C. Köhler, U.L. RajBhandary; Ed.), Springer Verlag, 22, 315-338 (2009). [[Springer](#)]
25. H. Yin\*, **J.S. Slusky\***, B.W. Berger, R.S. Walters, G. Vilaire, R.I. Litvinov, J. D. Lear, G.A. Caputo, J.S. Bennett, W.F. DeGrado. “Computational Design of Peptides that Target Transmembrane Helices”. *Science* 315(5820):1817 (2007) \*co-first authors [[Science](#)]
26. J. Snyder, B.G Ueland, **J.S. Slusky**, H. Karunadasa, R.J.Cava, P. Schiffer. “Low-temperature spin freezing in the Dy<sub>2</sub>Ti<sub>2</sub>O<sub>7</sub> spin ice”. *Physical Review B: Condensed Matter and Materials Physics* 69(6):064414, (2004) [[PRB](#)]
27. J. Snyder, B.G. Ueland, A. Mizel, **J.S. Slusky**, H. Karunadasa, R.J. Cava, P. Schiffer. “Quantum and thermal spin relaxation in the diluted spin ice Dy<sub>2-x</sub>M<sub>x</sub>Ti<sub>2</sub>O<sub>7</sub> (M=Lu,Y)”. *Physical Review B: Condensed Matter and Materials Physics* 70(18):184431, (2004). [[PRB](#)]
28. T.W. Heitmann, S.D. Bu, D.H. Kim., J.H. Choi, J. Giencke, C.B. Eom, K.A. Regan, N. Rogado, M.A. Hayward, T. He, **J.S. Slusky**, P. Khalifah, M. Haas, R.J. Cava, D.C. Larbalestier, M.S. Rzchowski. “MgB<sub>2</sub> energy gap determination by scanning tunnelling spectroscopy”. *Superconductor Science & Technology: Suppl S.* 17(2):237, (2004). [[SS&T](#)]
29. J. Snyder, B.G. Ueland, **J.S. Slusky**, H. Karunadasa, R.J.Cava, A. Mizel, P. Schiffer, “Quantum-classical reentrant relaxation crossover in Dy<sub>2</sub>Ti<sub>2</sub>O<sub>7</sub> spin ice”. *Physical Review Letters* 91(10):107201, (2003). [[PRL](#)]
30. J. Snyder, **J.S. Slusky**, R.J. Cava, P.Schiffer, “Dirty spin ice: The effect of dilution on spin freezing in Dy<sub>2</sub>Ti<sub>2</sub>O<sub>7</sub>”. *Physical Review B: Condensed Matter and Materials Physics* 66(6):064432, (2002). [[PRB](#)]
31. **J. S. Slusky**, N. Rogado, K. A. Regan, M. A. Hayward, P. Khalifah, T. He, Inumaru, S. M. Loureiro, M. K. Haas, H. W. Zandbergen, R. J. Cava. “Loss of superconductivity with the addition of Al to MgB<sub>2</sub> and a structural transition in Mg<sub>1-x</sub>Al<sub>x</sub>B<sub>2</sub>”. *Nature* 410(4826):343-5, (2001). [[Nature](#)]
32. J. Snyder, **J.S. Slusky**, R.J. Cava, P. Schiffer. “How ‘spin ice’ freezes”. *Nature* 413(6851):48-51, (2001). [[Nature](#)]
33. D.C. Larbalestier, L.D. Coolye, M.O. Rikel, A.A. Polyanskii, J. Jiang, S. Patnaik, X.Y. Cai, D.M. Feldmann, A Gurevich, AA Squirieri, M.T. Naus, C. B. Eom, E.E. Hellstrom, R. J. Cava, K. A. Regan, N. Rogado, M.A. Hayward, T. He, **J.S. Slusky**, P. Khalifah, K. Inumaru, M. Haas. “Strongly linked current flow in polycrystalline forms of the superconductor MgB<sub>2</sub>”. *Nature* 410(6825):186-9, (2001). [[Nature](#)]

34. C.B. Eom, M.K. Lee, J.H. Choi, L. Belenky, X. Song, L.D. Cooley, M.T. Naus, S. Patnaik, J. Jiang, M. Rikel, A. Polyanskii, A. Gurevich, X.Y. Cai, S.D. Bu, S.E. Babcock, E.E. Hellstrom, D.C. Larbalestier, N. Rogado, K.A. Regan, M.A. Hayward, T. He, **J.S. Slusky**, K. Inumaru, M.K. Haas, R.J. Cava. “High critical current density and enhanced irreversibility field in superconducting MgB2 thin films”. *Nature* 411(6837):558-60, (2001). [[Nature](#)]
35. T. He, Q. Huang, A.P. Ramirez, Y. Wang, K.A. Regan, N. Rogado, M.A. Hayward, M.K. Haas, **J.S. Slusky**, K. Inumara, H.W. Zandbergen, N.P. Ong, and R.J. Cava. “Superconductivity in the non-oxide perovskite MgCNi3”. *Nature* 411(6833):54-6 (2001). [[Nature](#)]
36. T. Yildirim, O. Gulseren, J.W. Lynn, C.M. Brown, T.J. Udovic, Q. Huang, N. Rogado, K.A. Regan, M.A. Hayward, **J.S. Slusky**, T. He, M.K. Haas, P. Kalifah, K. Inumaru, and R.J. Cava. “Giant anharmonicity and nonlinear electron-phonon coupling in MgB2: a combined first-principles calculation and neutron scattering study”. *Physical Review Letters* 87(3):037001, (2001). [[PRL](#)]

### **Preprints**

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37. R. Dhar, A.M. Bowman, B.J. Hatungimana, **J.S.G. Slusky**. “Evolutionary engineering a larger porin using a loop-to-hairpin mechanism” 2023 [[BioRxiv](#)]
38. M.W. Franklin, J.J. Stevens, J. Krise, **J.S.G. Slusky**, “The Extracellular Loops of OmpA Control the Slow Rate of *In Vitro* Folding”. 2020 [[BioRxiv](#)]

### **Patents and patents under review**

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1. **J.S. Slusky**, H. Yin, W.F. DeGrado. “Polypeptides That Bind Membrane Proteins”. United States Patent. US 2010-0120695-A1 (2010). [[GooglePatents](#)]
2. **J.S.G. Slusky** “Targeting the formation of Beta Barrels”. United States Patent Application 1549605. Filing date: 4/27/2017

### **Awards**

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- Johnson and Johnson STEM2D Scholars Award, Finalist (2019)
- Sigma Xi Student Invited Outstanding Scientist Award, Kansas State University (2018)
- NIH Director’s New Innovator Award (2017)
- Moore Inventor Fellowship (2016)
- F1000 Outstanding Presentation Prize 3Dsig (2016)
- University of Pennsylvania: Biomedical Graduate Studies Director’s Award (2002)
- Princeton University: Malcolm H. Chisholm prize for student who displayed the most excellence in inorganic chemistry in the class of 2001
- Semifinalist Westinghouse Science Talent Search (1997)

## External Funding

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### *Active awards*

Source: NIH R01GM148583-01A1  
Project: Plugging & Pulling-in: tuning peptides for ToIC to overcome antibiotic resistance  
Role: PI  
Direct Costs: \$ 825,648  
Total Costs: \$ 1,244,968  
Award period: August 5, 2023 – July 31 31, 2027

Source: NSF 2226804  
Project: MFB: NSF-BSF: Data-Adaptive and Metamorphosis Machine Learning Architectures for Generative Protein Design of Metal Biosensors  
Role: PI  
Direct Costs: \$ 1,017,047  
Total Costs: \$ 1,500,000  
Award period: September 1, 2022 – August 30, 2025

### *Completed awards*

Source: NIH P20GM113117  
Project: Plugging Antibiotic Efflux with KlebC Fragments to Make Resistant Bacteria Vulnerable to Antibiotics  
Role: Pilot Project PI (subaward)  
Direct Costs: \$ 120,000  
Award period: October 2, 2022 – August 04, 2023

Source: NIH P20GM103418  
Project: Machine Learning to Accelerate *De Novo* Enzyme Design  
Role: Project PI (subaward)  
Slusky Lab Direct Costs: \$ 40,000  
Award period: May 1, 2022 – October 1, 2022

Source: Scandinavian American Society  
Project: Sabbatical research in Stockholm  
Role: PI  
Slusky Lab Direct costs: \$ 23,000  
Award Period: August 15, 2021 – August 14, 2022

Source: NIH DP2 GM128201  
Project: Designed Beta-Strands for Inhibiting Efflux Pumps and Disabling Antibiotic Resistance  
Role: PI  
Slusky Lab Direct Costs: \$ 1,500,000  
Total Costs: \$ 2,272,500  
Award period: September 30, 2017 – September 1, 2022

Source: Gordon and Betty Moore Foundation, Moore Inventor Fellowship  
Project: Peptides That Bind to Outer Membrane Beta Barrels  
Role: PI  
Slusky Lab Direct Costs: \$ 750,000 + \$150,000 matching contribution from KU  
Award period: November 1, 2017 – December 31, 2019

Source: NIH P20GM113117  
Project: Targeting TolC oligomerization to potentiate antibiotics  
Role: Project PI (subaward)  
Slusky Lab Direct Costs: \$ 140,000  
Award period: August 28, 2016 – May 1, 2017

Source: NIH P20GM103418  
Project: Targeting TolC oligomerization to potentiate antibiotics  
Role: PI  
Slusky Lab Direct Costs: \$ 75,000  
Award period: May 2, 2016 – August 27, 2016

**—Funded during training—**

- NIH postdoctoral research training grant (2012-2014)
- HFSP (Human Frontier Science Program) Long Term Research Fellow (2008-2011)
- NIH Structural Biology Training Grant (2005-2007)
- NSF Graduate Research Fellowship (2002-2005)
- New Jersey Commission on Cancer Research, Summer Fellow (1997)

**Internal support**

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Source: University of Kansas General Research Fund (NFGRF)  
Project: Developing preliminary data for future proposals  
Role: PI  
Slusky Lab Direct costs: \$ 8,000  
Award period: May 2015 – May 2016

Source: University of Kansas New Faculty General Research Fund (NFGRF)

Project: Developing preliminary data for future proposals  
Role: PI  
Slusky Lab Direct costs: \$ 8,000  
Award period: May 2022 – May 2023

## Presentations

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### *External talks and invited seminars:*

- Invited Speaker: Modeling Protein Interactions Conference, Lawrence, Kansas (May 2023)
- Invited Speaker: Keystone Symposium, Computational Design and Modeling of Biomolecules, Banff, Canada (March 2023)
- Invited Seminar: Center for Advancement of Bio-Medicine, Rutgers University, Piscataway, New Jersey (March 2023)
- Invited Speaker: Biophysical Society Annual Meeting, San Diego, CA (February 2023)
- Invited Seminar: Chemistry Department, Wichita State University, Wichita, KS (January 2023)
- Invited Seminar: Department of Biology, University of Missouri, Kansas City, Kansas City, Missouri (December 2022)
- Invited Seminar: Department of Biochemistry and Molecular Biology, Tel Aviv University, Tel Aviv, Israel (November 2022)
- Invited Seminar: Bioclub seminar in computational biology, Hebrew University, Jerusalem, Israel (November 2022)
- Invited Speaker: Advances in Protein Design Workshop, Kfar Blum, Israel (October 2022)
- Invited Speaker: BPS thematic meeting: Physical and Quantitative Approaches to Overcome Antibiotic Resistance, Stockholm, Sweden (August 2022)
- Invited Speaker: BPS: Molecular Biophysics of Membranes Meeting, Tahoe, CA (June 2022)
- Invited Speaker: Protein Society Webinar: Membrane Protein Design (May 2022)
- Invited Speaker: European RosettaCon, Warsaw, Poland (May 2022)
- Invited Speaker: Advances in Protein Folding, Evolution, and Design, Bayeruth, Germany (April 2022)
- Invited Seminar: Department of Chemistry, Uppsala University, Uppsala, Sweden (March 2022)
- Invited Seminar: University of Kansas Cancer Center, Kansas City, KS via Zoom (June 2021)
- Invited Seminar: Chemistry Department, Lehigh University, Lehigh, PA via Zoom (April 2021)
- Invited Speaker: Bacterial Cell Envelopes: Structure, Dynamics, and Function, Southampton, UK via Zoom (March 2021)
- PEDS: Protein Engineering Design and Selection Webinar series (September 2020) [[youtube 7:00-32:00](#)]
- Translocation Transfer Seminar Series, Bremen, Germany via Zoom (August 2020)
- Accepted presentation: International Society for Computational Biology (ISCB) international meeting 3DSig (structural biology track) Zoom (July 2020)
- Invited Seminar: Center for Advancement of Bio-Medicine, Rutgers University Piscataway, New Jersey (February 2020)
- Invited Seminar: NIH NIDDK, Bethesda, Maryland (January 2020)

- Invited Speaker: Midwest Regional Meeting of American Chemical Society, Wichita, Kansas (October 2019)
- Invited Seminar: Rutgers University Chemistry Department, Piscataway, New Jersey (September 2019)
- Selected Speaker: RosettaCON, Levenworth, Washington (August 2019)
- Invited Speaker: GRC Membrane Protein Folding, Easton, Massachusetts (July 2019)
- Invited Seminar: NIH membrane interest group, Bethesda, Maryland (March 2019)
- Invited Seminar: University of Wisconsin Madison, Biochemistry Colloquium, Madison, Wisconsin (February 2019)
- Keynote Speaker: How did proteins emerge and continue to evolve meeting, Haifa, Israel (February 2019)
- Invited Seminar: Physics Seminar Series, University of Missouri, Columbia, Missouri (February 2019)
- Invited Speaker: Modeling of Protein Interactions Conference, Lawrence, KS (November 2018)
- Invited Seminar: Chemical and Structural Biology and Biophysics Research Series, The Ohio State University, Columbus, Ohio (October 2018)
- Invited Speaker: Protein Design and Engineering conference, Frankfurt, Germany (October 2018)
- Invited Seminar: Vanderbilt Structural Biology symposium, Nashville, Tennessee (September 2018)
- Invited Speaker: EMBO workshop mPEPC1 Hamburg, Germany (September 2018)
- Selected Speaker: Protein Society Annual Symposium, Boston, Massachusetts (July 2018)
- Student Invited Speaker: Sigma Xi, Scientific Research Society, Manhattan, Kansas (April 2018)
- Invited Speaker: Eclipse Symposium on Membrane Proteins, Manhattan, Kansas (August 2017)
- Invited Speaker: Workshop: Structural biology Stockholm, Sweden (January 2017)
- Invited Speaker: Modeling of Protein Interactions Conference, Lawrence, Kansas (October 2016)
- Selected Speaker: FASEB: Molecular Biophysics of Membranes, Snowmass, Colorado (July 2016)
- Invited Seminar: Rutgers University, Piscataway, New Jersey (June 2016)
- Invited Seminar: University of Missouri, Kansas City, Kansas City, Missouri (November 2015)
- Invited Speaker: GRC Membrane Protein Folding, Waltham, Massachusetts (June 2015)
- Invited Seminar: Stockholm University, Stockholm, Sweden (June 2015)
- Invited Seminar: University of Kansas Medical Center, Kansas City, Kansas (December 2014)
- Invited Seminar: Kansas State, Manhattan, Kansas (November 2014)
- Invited Speaker: Modeling of Protein Interactions Conference, Lawrence, KS (October 2014)

*JSG Slusky poster presentations*

1. Daniel Montezano, Rebecca Bernstein, Matthew Copeland, & Joanna SG Slusky, “Features of Outer Membrane Proteins”. The Protein Society Annual Meeting, Boston, MA. July 13, 2023
2. Meghan W. Franklin, Sergey Nepomnyachiy, Ryan Feehan, Nir Ben-Tal, Rachel Kolodny, & Joanna SG Slusky. “Evolution of Environmentally-Enforced, Repeat Protein Topology in the Outer Membrane”. FASEB Scientific Research Conference, Molecular Biophysics of Membranes, Olean, NY. June 2018
3. Meghan W. Franklin, Sergey Nepomnyachiy, Ryan Feehan, Nir Ben-Tal, Rachel Kolodny, & Joanna SG Slusky. “Evolution of Environmentally-Enforced, Repeat Protein Topology in the Outer Membrane”. NIH High Risk High Reward Symposium, Bethesda, MD. June 2018



4. Meghan W. Franklin, Sergey Nepomnyachiy, Ryan Feehan, Nir Ben-Tal, Rachel Kolodny, & Joanna SG Slusky. "Evolution of Environmentally-Enforced, Repeat Protein Topology in the Outer Membrane". Biophysical Society Meeting, San Francisco, CA. February 2018
5. Meghan W. Franklin, Sergey Nepomnyachiy, Ryan Feehan, Nir Ben-Tal, Rachel Kolodny, & Joanna SG Slusky. "Evolution of Environmentally-Enforced, Repeat Protein Topology in the Outer Membrane". Gordon Research Conference, Protein Transport Across Cell Membranes, Galveston, TX. March 2018.
6. Meghan W. Franklin, Ryan Feehan, & Joanna SG Slusky "*Structural characteristics of membrane  $\beta$ -barrels— polymeric, monomeric, oligomeric*". 3Dsig, Orlando, Fl. July 9, 2016, **Awarded F1000 Outstanding Presentation Prize**
7. Joanna SG Slusky. "*Charge asymmetry of outer membrane proteins*". Biophysical Society National Meeting, Baltimore, MD. 2015, February 9, 2015
8. Joanna SG Slusky. "Charge asymmetry in proteins of the outer membrane". American Chemical Society annual meeting/ Frontiers in Biophysics and chemical biology a symposium in honor of Bill DeGrado, San Francisco, CA. August 2014

*Oral and poster presentations from my laboratory*

2023

1. Rik Dhar, Alex M. Bowman, Brunojoel Hatungimana, & Joanna S.G. Slusky. "Engineering Larger Pore Proteins: A Study on Loop-to-Hairpin Evolution in Beta-Barrel Outer Membrane Proteins", The 37th Annual Symposium of The Protein Society, Boston, MA. July 13, 2023 (poster)
2. Daniel Montezano "Exploring uncharted regions of protein space in the design of *de novo* barrels". K-INBRE 2023, Overland Park, KS. January 13, 2023 (oral)
3. BrunoJoel Hatungimana, Rik Dhar, Meghan W. Franklin, & Joanna SG Slusky "Design of a fluorescent outer-membrane protein". K-INBRE 2023, Overland Park, KS. January 14, 2023 (poster)
4. Emily Proctor, Daniel Montezano, Rebecca Bernstein, Joanna S. G. Slusky "Computational Prediction of Chloroplast Outer Envelope  $\beta$ -barrel Proteins". K-INBRE 2023, Overland Park, KS. January 14, 2023 (poster)
5. Ayotunde P. Ikujuni, S. Jimmy Budiardjo, Emre Firlar, Jason T. Kaelber, & Joanna S.G. Slusky. "Biophysical and biochemical characterization of TolC biogenesis reveals the formation of folded periplasmic intermediates". K-INBRE 2023, Overland Park, KS. January 14, 2023 (poster)
6. Rik Dhar & Joanna SG Slusky. "Chimeric PorB of Neisseria gonorrhoeae Provides Evidence for Outer Membrane Protein Evolution Through Loop to Beta-Hairpin Transition". K-INBRE 2023, Overland Park, KS. January 14, 2023 (poster)
7. Ryan Feehan & Joanna S.G. Slusky. "Can we identify enzyme active sites without experimentation"?
8. Daniel Montezano, Rebecca Bernstein, Matthew M. Copeland, & Joanna SG Slusky. "Distribution and Features of Beta-Barrels in Bacteria". Modeling Protein Interactions Conference, Lawrence, KS. May 25, 2023 (poster)

9. S. Jimmy Budiardjo, Emre Firlar, Andrew Daufel, Alex Bowman, Jason T. Kaelber, & Joanna Slusky. “Structures of TolC Bound to Bacteriocins”. Modeling Protein Interactions Conference, Lawrence, KS. May 25, 2023 (poster)
10. Rik Dhar, Alexander M. Bowman, Brunojoel Hatungimana, & Joanna S.G. Slusky, “Adapting loop-to-hairpin evolutionary mechanism to engineer larger pores in beta-barrel proteins”. Modeling Protein Interactions Conference, Lawrence, KS. May 25, 2023 (poster)
11. Emily Proctor, Daniel Montezano, & Joanna S.G. Slusky. “Computational Prediction of Chloroplast Outer Envelope  $\beta$ -Barrel Proteins”. Modeling Protein Interactions Conference, Lawrence, KS. May 25, 2023 (poster)
12. Ryan Feehan, Emily Procter, Barth D. Grant, & Joanna S.G. Slusky. “Using AlphaFold2 for predicting RME-8 self-oligomerization.” Modeling Protein Interactions Conference, Lawrence, KS. May 25, 2023 (poster)
13. Alex Bowman, Jacqueline Stevens, Joanna Krise, Meghan W. Franklin, and Joanna S.G. Slusky. “OmpA Folding is Complex and Robust”. Modeling Protein Interactions Conference, Lawrence, KS. May 25, 2023 (poster)
14. Samuel Lim & Joanna SG Slusky. “Natural Language Processing for Protein Data Curation”. Modeling Protein Interactions Conference, Lawrence, KS. May 25, 2023 (poster)
15. Daniel Montezano, Rebecca Bernstein, Matthew M. Copeland, & Joanna SG Slusky. “Distribution and Features of Beta-Barrels in Bacteria”. Gordon Research Conference on Membrane Protein Folding, Castelldefels, Spain, June 25 – 29, 2023 (poster)
16. Rik Dhar, Alex M. Bowman, Brunojoel Hatungimana, & Joanna S.G. Slusky. “Engineering Larger Pore Proteins: A Study on Loop-to-Hairpin Evolution in Beta-Barrel Outer Membrane Proteins”, The 37th Annual Symposium of The Protein Society, Boston, MA. July 13, 2023 (poster)

2022

17. Daniel Montezano, Rebecca Bernstein, Joanna SG Slusky, “Transmembrane Beta-Barrel Prediction Across Bacterial Phyla”. WinterRosettaCON 2022 (hosted online), February 8, 2022 (poster)
18. Ayotunde P. Ikujuni, S. Jimmy Budiardjo, Emre Firlar, Andres Cordova, Jason T. Kaelber, Joanna SG Slusky, “Characterization of folding pathway of TolC, an outer membrane component of antibiotic efflux pumps”, Biophysical Society Annual Meeting, San Francisco, California, February 11, 2022 (poster)
19. S. Jimmy Budiardjo, Jacqueline J. Stevens, Anna Calkins, Ayotunde P. Ikujuni, Virangika Wimalasena, Emre Firlar, David Case, Julie S. Biteen, Jason T. Kaelber, Joanna SG Slusky, “Colicin E1 binds to TolC as an open hinge to penetrate the outer-

- membrane“, Biophysical Society Annual Meeting, San Francisco, California, February 11, 2022 (poster)
20. Meghan W. Franklin, Jacqueline J. Stevens, Joanna Krise, & Joanna SG Slusky, “The extracellular loops of OmpA control the slow rate of in vitro folding”, Biophysical Society Annual Meeting, San Francisco, California, February 11, 2022 (poster)
  21. Ryan Feehan, Meghan W. Franklin, & Joanna SG Slusky. “An ML tool for predicting enzyme active sites” Nexus KC, Kansas City, Kansas, April 7, 2022 (oral)
  22. Rik Dhar. “Outer membrane protein evolution: Past, present and future”. Philip and Marjorie Newmark Award Finalist Seminar, Lawrence, KS. April 11, 2022 (oral)
  23. Sarah Noga, Ayotunde P. Ayotunde, & Joanna SG Slusky, “Determining Structural Characteristics of Antibiotic Efflux Pump Protein Folding Intermediates”, Protein Engineering Canada, Montreal, Canada, June 22, 2022 (poster)
  24. Sarah Noga, Ayotunde P. Ayotunde, & Joanna SG Slusky, “Determining Structural Characteristics of Antibiotic Efflux Pump Protein Folding Intermediates”, Beckman Symposium, Champaign, Illinois August 2, 2022 (poster)
  25. Daniel Montezano, Rebecca Bernstein, & Joanna SG Slusky, “Bacterial Outer Membrane Proteins”, Innovation Festival's Mechanisms of Disease Research & Recruitment Conference, August 4, 2022, Kansas City, Kansas (oral)
  26. Ryan Feehan & Joanna S. G. Slusky. “An ML tool for predicting enzyme active sites.” RosettaCon 2022, Leavenworth, WA. August 11, 2022 (oral)
  27. Ryan Feehan & Joanna S.G. Slusky. “ML for enzyme or non-enzyme predictions of protein bound metal ions.” Molecular Biosciences Graduate Student Symposium, Lawrence, KS. August 19, 2022 (poster)
  28. Rik Dhar & Joanna SG Slusky. “Outer membrane protein evolution: Strand number accretion through loop to hairpin transition” KU Molecular Biosciences Graduate Student Symposium, Lawrence, KS. August 19, 2022 (poster)
  29. Ryan Feehan & J.S.G. Slusky. “Can We Identify Active Sites Without Experimentation”? KU Chemical Biology Symposium, Lawrence, KS, October 22, 2022. (poster)
  30. Ayotunde P. Ikujuni “Biophysical and Biochemical characterization of TolC as a potential target of efflux pump inhibition”, Philip and Marjorie Newmark Award Finalist Seminar, Lawrence, KS, November 14, 2022. (oral)
  31. Ryan Feehan “Can We Identify Enzyme Active Sites Without Experimentation” Philip and Marjorie Newmark Award Finalist Seminar, Lawrence, KS. November 14, 2022. (oral) **Newmark Award Winner!**
  32. Brunojoel Hatungimana, Rik Dhar, & Joanna SG Slusky, “Design of a Fluorescent Outer-Membrane Protein”, Annual Biomedical Research Conference for Minority Students (ABRCMS), Anaheim, CA, Nov 2022 (poster)
  33. Brunojoel Hatungimana, Rik Dhar, & Joanna SG Slusky, “Design of a Fluorescent Outer-Membrane Protein”, Heartland Undergraduate Biochemistry Research Forum, Kansas City, KS, Nov 2022 (poster) **Best poster winner!**

2021

34. Ayotunde Paul Ikujuni, Jimmy Budiardjo, Emre Firlar, Andres Cordova, Jason Kaelber and Joanna Slusky, “Characterization of Folding Stages of TolC; an Outer-Membrane component of Antibiotic Efflux”. The Protein Society Symposium (hosted online), July 9, 2021 (poster)
35. Ayotunde Paul Ikujuni, Jimmy Budiardjo, Emre Firlar, Andres Cordova, Jason Kaelber and Joanna Slusky “Characterization of Folding Stages of TolC; an Outer-Membrane component of Antibiotic Efflux”. IDeA Central Region Conference (hosted online), July 26, 2021 (poster)
36. Ayotunde Paul Ikujuni, Jimmy Budiardjo, Emre Firlar, Andres Cordova, Jason Kaelber and Joanna Slusky “Characterizing the Folding Stages of TolC, an Outer-Membrane component of Antibiotic Efflux Pumps”. KUMB Graduate Student Symposium. Lawrence, KS. August 20, 2021 (oral)
37. Ayotunde Paul Ikujuni, Jimmy Budiardjo, Emre Firlar, Andres Cordova, Jason Kaelber and Joanna Slusky. “Characterizing the Folding Pathway of TolC, an Outer-Membrane component of Antibiotic Efflux Pumps”. Biomedical Science Symposium. Lawrence, KS. October 8, 2021 (oral and poster)
38. Daniel Montezano, Rebecca Bernstein, & Joanna S.G Slusky. “Is It A Barrel? In Search of Outer Membrane Beta-Barrels”, ELIXIR 3D Bioinfo Annual Meeting, (hosted online), November 2, 2021. (poster)
39. Daniel Montezano, Rebecca Bernstein, & Joanna S.G Slusky. “Is It A Barrel? In Search of OMBBs”, ELIXIR 3D Bioinfo Annual Meeting, (hosted online), November 2, 2021. (oral) Rik Dhar, Meghan Franklin, & Joanna S. G. Slusky. "Making repeat protein topology with non-repeating genetic material". 18th Annual K-INBRE Symposium, Wichita, KS. January 18-19, 2021 (poster)
40. Rik Dhar, Ryan Feehan, & Joanna S.G. Slusky. "Membrane Barrels Are Taller, Fatter, Inside-Out Soluble Barrels", ELIXIR 3D Bioinfo Annual Meeting, (hosted online), November 2, 2021 (poster)

2020

41. Daniel Montezano, Rachel Kolodny, Joanna S. G. Slusky. “Synthetic Beta-barrel Protein Sequences for Bionanosensor Applications”. 18th Annual K-INBRE Symposium, Wichita, KS. January 18-19, 2020 (poster)
42. Jaden Anderson, and Joanna S. G. Slusky. “Understanding OMP Insertion using Sequence Coevolution”. K-INBRE, Wichita, KS. January 18-19, 2020. (poster)
43. Rik Dhar, Meghan Franklin, & Joanna S. G. Slusky. "Making repeat protein topology with non-repeating genetic material". 18th Annual K-INBRE Symposium, Wichita, KS. January 18-19, 2020 (poster)

44. Jaden Anderson, and Joanna S. G. Slusky. “Understanding OMP Insertion using Sequence Coevolution”. Winter RosettaCon, New York, NY. February 9-11, 2020 (poster)
45. Ryan Feehan, Meghan W. Franklin, and Joanna S. G. Slusky.. “Metal Activity Homology Expanded Set”. WinterRosettaCon 2020, New York City, NY. February 9-11, 2020 (poster)
46. Daniel Montezano, Joanna S. G. Slusky. “Development of a Functional Assay to Test OMBB Folding”. Winter RosettaCon 2020, New York City, NY. February 9-11, 2020 (poster)
48. Justin Lerma, Ryan Feehan and Joanna Slusky, “Membrane  $\beta$ -Barrel Enzyme Design” Using Rosetta, RosettaCon, Seattle (virtually) August 2020 (poster)
49. Ayotunde Paul Ikujuni, Jimmy Budiardjo, Emre Firlar, Andres Cordova, Jason Kaelber and Joanna Slusky, “In vitro Folding and Characterization of Folding Pathway of Outer-Membrane Protein Efflux Pumps”. Biomedical Sciences Symposium, Lawrence, KS (hosted online), November 2020 (poster)
50. Andres Cordova, Jimmy Budiardjo and Joanna Slusky “Determining the Specificity of Colicins to Outer Membrane Efflux Pumps”. Biomedical Sciences Symposium, Lawrence, KS (virtually), November 2020 (poster)

2019

51. Gustavo Murillo-Espinoza, Jakki Deay, and Joanna S. G. Slusky. “Research Cycle”. Emerging Scholars Poster Session, Lawrence, KS. April 19, 2019. (poster)
52. Dennis O. Pérez-López, Cyril Cook, & Joanna S.G. Slusky, “Structural Deconstruction of the Outer Membrane Beta Barrel TolC in Order to Inhibit Antibiotic Resistance in *E. coli*” Haskell Research Symposium, Lawrence, KS. April 2019. (poster)
53. Ryan Feehan, Meghan W. Franklin, and Joanna S. G. Slusky. “Metal Activity Homology Expanded Set”. RosettaCon 2019, Leavenworth, WA. August 8, 2019. (poster)

2018

54. Virangika K. Wimalasena, Jimmy Budiardjo, Cyril B.R. Cook, Joanna S.G. Slusky “Determining the Specificity of Designed Peptide that Inhibits Antibiotic Resistance”. Biophysical Society Meeting, San Francisco, CA. February 21, 2018 (poster)
55. Meghan W. Franklin and Joanna J.S.G. Slusky, “Loop structures of outer membrane beta barrels”. Biomedical Sciences Symposium, Lawrence, KS. April 12, 2018 (poster)
56. Meghan W. Franklin and Joanna S.G. Slusky. “Loop structures of outer membrane beta barrels”. Biomedical Sciences Symposium, Lawrence, KS. April 12, 2018 (oral)
57. Aldo I. Salazar-Morales, Cyril B.R. Cook, & Joanna S.G. Slusky. “Sequence Dependence of Outer Membrane Protein Folding” Poster presented at KU Graduate Research Symposium, Lawrence, KS. April 2018 (poster)
58. Meghan W. Franklin and Joanna S.G. Slusky. “Tight Turns of Outer Membrane Proteins: An Analysis of Sequence, Structure, and Hydrogen Bonding”. Protein Society 32nd Annual Symposium, Boston, MA. July 10, 2018 (poster)
59. Rik Dhar, Meghan W. Franklin, & Joanna SG Slusky “Design and evolution of fluorescent outer membrane protein”. KU Molecular Biosciences Graduate Student

Symposium, Lawrence, KS. August 17, 2018 (poster)

60. Pinakin Sukthankar, Cyril Cook, & Joanna S.G. Slusky. "Antibiotic potentiation with a designed  $\beta$ -stranded inhibitor" Department of Chemistry Seminar Series, Fort Hays State University. Hays, KS. September 10, 2018 (Oral, Invited Seminar)
61. Jaden Anderson., & Joanna SG Slusky, "Sequence Coevolution Illustrates Two New Stages in OMP Membrane Insertion". Modeling Protein Interactions Symposium, Lawrence, KS. November 1, 2018 (poster)

2017

62. Meghan W. Franklin, Sergey Nepomnyachiy, Ryan Feehan, Nir Ben-Tal, Rachel Kolodny, & Joanna SG Slusky. "A reclassification of outer membrane beta barrels". HBC Science Talks, Lawrence, KS. February 17, 2017 (poster)
63. Jacqueline J. Deay, HuiSun, Pinakin Sukthankar, & Joanna SG Slusky. "Computationally designed peptide binds LPS". HBC Science Talks, Lawrence, KS. February 17, 2017 (poster)
64. Jacqueline J. Deay, HuiSun Lee, Pinakin Sukthankar, & Joanna SG Slusky. "Computationally designed peptide binds LPS". Chemical Biology Graduate Training Program Annual Symposium, Lawrence, KS. March 30, 2017 (poster)
65. Meghan W. Franklin, Sergey Nepomnyachiy, Ryan Feehan, Nir Ben-Tal, Rachel Kolodny, & Joanna SG Slusky. "A reclassification of outer membrane beta barrels". KU Graduate Research Competition, Lawrence, KS. April 6, 2017 (poster)
66. Virangika Wimalasena, S. Jimmy Budiardjo, Cyril Cook, & Joanna SG Slusky "Determining the specificity of designed peptide that inhibits antibiotic resistance". KU Undergraduate Research Poster Session, Lawrence, KS. July 28, 2017 (poster)
67. Rik Dhar, Meghan W. Franklin, & Joanna S.G. Slusky. "Design and evolution of a fluorescent outer membrane proteins". Molecular Biosciences Symposium, Lawrence, KS. August 18, 2017 (poster)
68. Meghan W. Franklin, Sergey Nepomnyachiy, Ryan Feehan, Nir Ben-Tal, Rachel Kolodny, & Joanna SG Slusky. "Structural convergence and a strand-based evolutionary pathway for outer membrane proteins". Eclipse Membrane Biophysics Symposium, Manhattan, KS. August 20, 2017 (poster)
69. Pinakin Sukthankar, Cyril Cook, & Joanna SG Slusky. "Designing a  $\beta$ -stranded antibiotic efflux inhibitor". Great Plains Infectious Disease Meeting, Lawrence, KS. November 11, 2017 (poster)
70. Meghan Franklin, & Joanna SG Slusky, "Loop structures of outer membrane beta barrels". Department of Pharmaceutical Chemistry Fall Retreat, Lawrence, KS. October 17, 2017 (poster)

2016

71. Pinakin Sukthankar, & Joanna SG Slusky. "Developing a minimalist model of  $\beta$ -barrel ligands". K-INBRE 2016 Symposium, Overland Park, KS. January 15, 2016 (poster)
72. Paul Goodman, III, Cyril Cook, & Joanna SG Slusky. "Adding Strands to VDAC-1 to Increase its Pore Size for Facilitating the Release of Cytochrome C". K-INBRE 2016 Symposium, Overland Park, KS. January 16, 2016 (poster)

73. Pinakin Sukthankar, Cyril Cook, Amritangshu Chakravarty, & Joanna SG Slusky. “Development of  $\beta$ -barrel ligands for antibiotic potentiation”. K-INBRE Symposium, Overland Park, KS. January 16, 2016 (poster)
74. Cedric Clark, II, Cyril Cook, & Joana SG Slusky. “Determining the Effect His-Tags Have on Outer Membrane  $\beta$ -Barrel Protein Insertion into Vesicles”. Haskell Student Research Symposium, Haskell Indian Nations University, Lawrence, KS. April 12, 2016 (poster)
75. Pinakin Sukthankar, Cyril Cook, & Joanna SG Slusky. “Designing a  $\beta$ -stranded ligand for antibiotic potentiation”. FASEB: Molecular Biophysics of Membranes, Snowmass, CO. July 16, 2016 (poster)
76. Cedric Clark, II, Cyril Cook, Pinakin Sukthankar, & Joanna SG Slusky. “Determining the Effect of Certain Interface Amino Acid Interactions have on the Folding of Outer Membrane Proteins”. KU Summer Undergraduate Research Poster Session, Lawrence, KS. July 29, 2016 (poster)
77. Cedric Clark, II, & Joanna SG Slusky. “Targeting  $\beta$ -barrel Outer Membrane Proteins in the Fight Against Antibiotic Resistance”. Annual Biomedical Research Conference for Minority Students (ABRCMS), Tampa, FL. November 10, 2016 (poster)
78. Karen P. Fong, Joanna SG Slusky, K. Yoon, Alex Sternisha, & Joel S. Bennett. “Identification of Interacting Hot Spots in the alphaIIb Extracellular Stalk by Computational Alanine Scanning”. 39th Annual Philadelphia Workshop on Hemostasis, Thrombosis and Atherosclerosis, Philadelphia, PA. November 18, 2016 (poster)
79. Karen P. Fong, Joanna SG Slusky, K. Yoon, Alex Sternisha, & Joel S. Bennett. “Identification of Interacting Hot Spots in the alphaIIb Extracellular Stalk by Computational Alanine Scanning”. American Society of Hematology National Meeting, Atlanta, GA. December 2016 (poster)

2015

80. Cyril Cook, Ryan Feehan, Shannon James, & Joanna SG Slusky, “Alternating Hydrophobicity in Residues of Outer Membrane Proteins”. KU Molecular Biosciences Symposium, Lawrence, KS. August 14, 2015 (poster)

## **Teaching**

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*Instructor evaluation 2015 – 2020 is the average of nine metrics (content, goals, fair, challenging, clear, encouraging, available, respected, knowledge acquired). Instructor evaluations 2021 – present is the average of ten metrics, four clarity metrics (expectations, purpose, deadlines, and grading), two encouragement metrics (success and participation), feedback, class environment, respect, and applications.*

### ***Undergraduate teaching***

Spring 2023	BIOL 638 – Biochemistry II (metabolism) (55 students, 4 credits, 50% effort, instructor evaluation = 89.9 / 100)
Fall 2020	BIOL 636 – Biochemistry I (macromolecules)

(102 students, 4 credits, 25% effort, instructor evaluation = 4.23 / 5)

Fall 2019 BIOL 636 – Biochemistry I (macromolecules)  
(97 students, 4 credits, 25% effort, instructor evaluation = 4.28 / 5)

Fall 2018 BIOL 636 – Biochemistry I (macromolecules)  
(108 students, 4 credits, 25% effort, instructor evaluation = 4.17 / 5)

Fall 2017 BIOL 636 – Biochemistry I (macromolecules)  
(87 students, 4 credits, 25% effort, instructor evaluation = 4.63 / 5)

Fall 2016 BIOL 636 – Biochemistry I (macromolecules)  
(94 students, 4 credits, 25% effort, instructor evaluation = 4.38 / 5)

Fall 2015 BIOL 636 – Biochemistry I (macromolecules)  
(107 students, 4 credits, 25% effort, instructor evaluation = 3.33 / 5)

***Graduate teaching:***

Spring 2023 BINF 702 – Computational Biology II  
(4 students, 5 credits, 33% effort, instructor evaluation = 97 / 100, pooled with 709 to meet response threshold)

BINF 709 – Topics in Bioinformatics  
(5 students, 1 credit, 33% effort, instructor evaluation = 97 / 100, pooled with 701 to meet response threshold)

BIOL 750 – Advanced Biochemistry  
(6 students, 3 credits, 30% effort, instructor evaluation = 93 / 100)

Fall 2022 BINF 701 – Computational Biology I  
(4 students, 5 credits, 33% effort, instructor evaluation = 100 / 100, pooled with 709 to meet response threshold)

BINF 709 – Topics in Bioinformatics  
(5 students, 1 credit, 33% effort, instructor evaluation = 100 / 100, pooled with 701 to meet response threshold)

BIOL 952 – Introduction to Molecular Modeling  
(1 students, 3 credits, 33% effort, enrolment did not meet threshold)

Spring 2021 BINF 702 – Computational Biology II  
(2 students, 5 credits, 33% effort, instructor evaluation = 100 / 100, pooled with 709 to meet response threshold)

BINF 709 – Topics in Bioinformatics



	(3 students, 1 credit, 33% effort, instructor evaluation = 100 / 100, pooled with 701 to meet response threshold)
	BIOL 750 – Advanced Biochemistry (5 students, 3 credits, 30% effort, instructor evaluation = 90 / 100)
Fall 2020	BINF 701 – Computational Biology I (2 students, 5 credits, 33% effort, enrolment did not meet threshold)
	BIOL 952 – Introduction to Molecular Modeling (3 students, 3 credits, 33% effort, enrolment did not meet threshold)
	BINF 709 – Topics in Bioinformatics (7 students, 1 credit, 33% effort, instructor evaluation = 4.13 / 5)
Spring 2020	<i>No instructor evaluation in Spring 2020 because of the pandemic</i> BINF 702 – Computational Biology II (5 students, 5 credits, 25% effort)
	BINF 709 – Topics in Bioinformatics (4 students, 1 credit, 33% effort)
Fall 2019	BIOL 701– Computational Biology I (4 students, 5 credits, 25% effort, instructor evaluation = 4.75 / 5)
	BIOL 952 – Introduction to Molecular Modeling (2 students, 3 credits, 33% effort, instructor evaluation = 4.75 / 5)
	BINF 709 – Topics in Bioinformatics (9 students, 1 credit, 33% effort, instructor evaluation = 5 / 5)
Spring 2019	BINF 702 – Computational Biology II (3 students, 5 credits, 25% effort, instructor evaluation = 5 / 5)
	BINF 709 – Topics in Bioinformatics (6 students, 1 credit, 33% effort, instructor evaluation = 4.50 / 5)
	BIOL 750 – Advanced Biochemistry (5 students, 3 credits, 12.5% effort, instructor evaluation = 5 / 5)
Fall 2018	BINF 701 – Computational Biology I (4 students, 5 credits, 20% effort, instructor evaluation = 4.97 / 5)
	BIOL 952 – Introduction to Molecular Modeling (1 students, 3 credits, 25% effort, enrollment threshold not met)

	BINF 709 – Topics in Bioinformatics (9 students, 1 credit, 25% effort, instructor evaluation = 4.92 / 5)
Spring 2018	BINF 709 – Topics in Bioinformatics (9 students, 1 credit, 33% effort, instructor evaluation = 5 / 5)
Fall 2017	BINF 701 – Computational Biology I (3 students, 5 credits, 23% effort, instructor evaluation = 4.93 / 5)
	BIOL 952 – Introduction to Molecular Modeling (6 students, 3 credits, 25% effort, instructor evaluation = 4.18 / 5)
	BINF 709 – Topics in Bioinformatics (9 students, 1 credit, 33% effort, instructor evaluation = 4.66 / 5)
Spring 2017	BINF 702 – Computational Biology II (2 students, 5 credits, 23% effort, instructor evaluation = 4.28 / 5)
	BINF 704 – Advanced Computational Biology II (3 students, 5 credits, 33% effort, instructor evaluation = 4.70 / 5)
	BINF 709 – Topics in Bioinformatics (6 students, 1 credit, 33% effort, instructor evaluation = 4.94 / 5)
	BIOL 750 – Advanced Biochemistry (10 students, 3 credits, 12.5% effort, instructor evaluation = 4.33 / 5)
Fall 2016	BINF 701 – Computational Biology I (2 students, 5 credits, 23% effort, instructor evaluation = 4.94 / 5)
	BINF 703 – Advanced Computational Biology I (3 students, 5 credits, 33% effort, instructor evaluation = 4.78 / 5)
	BINF 709 – Topics in Bioinformatics (6 students, 1 credit, 33% effort, instructor evaluation = 5 / 5)
Spring 2016	BINF 704 – Advanced Computational Biology II (3 students, 5 credits, 33% effort, instructor evaluation = 5 / 5)
Fall 2015	BINF 703 – Advanced Computational Biology I (4 students, 5 credits, 33% effort, instructor evaluation = 5 / 5)

**Laboratory Teaching**

*BIOL 424 allows undergraduates to take part in a mentored research experience while gaining college credit. BIOL 985/999/899 are research hours courses for graduate students.*

Summer 2023	BINF 999 – Doctoral Dissertation (1 student) BIOL 985 – Doctoral Dissertation (1 student)
Spring 2023	BINF 999 – Doctoral Dissertation (2 students) BIOL 424 – Independent Study (1 student)
Fall 2022	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (2 students)
Summer 2022	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (1 students)
Spring 2022	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (2 students) BIOL 985 – Advanced Study (1 student)
Fall 2021	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (2 students)
Summer 2021	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (2 students)
Spring 2021	BINF 999 – Doctoral Dissertation (1 students) BIOL 999 – Doctoral Dissertation (2 students) BIOL 899 – Master’s Thesis (1 student)
Fall 2020	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (2 students) BIOL 424 – Independent Study (1 student)
Summer 2020	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (1 students) BIOK 985 – Advanced Study (1 student)
Spring 2020	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (1 students) BIOK 985 – Advanced Study (1 student)
Fall 2019	BINF 999 – Doctoral Dissertation (2 students) BIOL 999 – Doctoral Dissertation (1 student) BIOL 985 – Advanced Study (1 student)
Summer 2019	BINF 999 – Doctoral Dissertation (3 students) BIOL 999 – Doctoral Dissertation (1 students) BIOL 985 – Advanced Study (1 student)

Spring 2019	BINF 999 – Doctoral Dissertation (3 students) BIOL 999 – Doctoral Dissertation (1 student) BIOL 985 – Advanced Study (2 student)
Fall 2018	BINF 999 – Doctoral Dissertation (3 students)
Summer 2018	BINF 999 – Doctoral Dissertation (3 students) BIOL 985 – Advanced Study (1 student)
Spring 2018	BINF 999 – Doctoral Dissertation (1 student) BIOL 985 – Advanced Study (2 student) BIOL 424 – Independent Study (1 student)
Fall 2017	BINF 999 – Doctoral Dissertation (1 students) BIOL 424 – Independent Study (1 student)
Summer 2017	BINF 999 – Doctoral Dissertation (3 students) BIOL 985 – Advanced Study (1 student)
Spring 2017	BINF 999 – Doctoral Dissertation (1 student) BIOL 424 – Independent Study (1 student) BIOL 985 – Advanced Study (2 students)
Summer 2016	BINF 999 – Doctoral Dissertation (1 students)
Spring 2016	BIOL 985 – Advanced Study (1 student)
Spring 2015	BIOL 985 – Advanced Study (2 students)

### **Mentorship**

*Mentee awards and fellowships listed in the right column. The Newmark Award is an annual university-wide award for the best graduate student biochemist.*

### **Postdoctoral Fellows:**

Huisun Lee	2016 – 2017	
Pinakin Sukthankar	2015 – 2019	K-INBRE Postdoctoral Award
Daniel Montezano	2019 – present	K-INBRE Postdoctoral Award
Jimmy Budiardjo	2019 – 2022	K-INBRE Postdoctoral Award IRACDA Postdoctoral Award
Rik Dhar	2022 – present	

### **Graduate Students:**

Meghan Franklin	2015 – 2019	KU Newmark Award Finalist T32 Biotechnology Fellowship Awardee
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Jaden Anderson	2016 – 2021	
Rik Dhar	2016 – 2022	KU Newmark Award Finalist
S. Jimmy Budiardjo	2017 – 2019	KU Newmark Award Winner T32 Biotechnology Fellowship Awardee
Paul Ikujuni	2019 – 2023	KU Newmark Award Finalist KU MB Twomey Award Winner CLAS Grad. Scholarly Development Awardee KU People’s Choice Award for the 3MT Protein Society Diversity Award in 2021
Ryan Feehan	2019 – present	KU Newmark Award Winner
Samuel Lim	2021 – present	Self Fellow
Andrew Daufel	2023 – present	

**Post Baccalaureate Students:**

Aldo Salazar Morales	2017 – 2018	PREP Scholar
Dennis Perez-Lopez	2018 – 2019	PREP Scholar

**Undergraduate Students:**

Shannon James	2014 – 2016	
Ryan Feehan	2015 – 2017	
Cedric Clark	2015 – 2017	IMSD Awardee
Aleksander Downs	2015 – 2018	
Paul Goodman III	Summer 2015	
Riel Latimer	2016 – 2017	
Virangika Wimalasena	2017 – 2018	Biophysical Society Travel Award Recipient
Brooke Wietharn	2018 – 2019	
Gustavo Murillo-Espinoza	2018 – 2020	
Jenna Gardener	2019 – 2020	
Andres Cordova	2020 – 2021	
Justin Lerma	Summer 2020	
Sarah Noga	2020 – 2022	Beckman Scholar Goldwater Scholar
Gabrielle Martell	Summer 2021	
Brunojoel Hatungimana	2021– present	Heartland UG Biochemistry Poster Award KU UG Outstanding Presentation Award United Nations Millennium Fellowship K-INBRE Scholar K-INBRE Scholar
Emily Proctor	2022 – present	
Tejaswi Nimmagadda	2023 – present	

**High School Students:**

Arrihant Kanna	Summer 2017
Rebecca Bernstein	2020 – 2021

## Graduate Committees:

### *Past:*

1. Xi Cheng	Computational Biology	2015
2. Ragul Gowthaman	Computational Biology	2015
3. Varsha Badal	Computational Biology	2015 – 2018
4. Saveliy Belkin	Computational Biology	2015 – 2019
5. Shipra Malhotra	Computational Biology	2015 – 2019
6. Jittasak Khowsathit	Computational Biology	2015 – 2019
7. Jiaqin Li	Molecular Biosciences	2016
8. Jumin Lee	Computational Biology	2016 – 2017
9. Elizabeth Grotemeyer	Molecular Biosciences	2016 – 2018
10. Sijin Ren	Chemistry	2017
11. Shoichi Tachiyama	Molecular Biosciences	2018 – 2019
12. Nikola Kenjic	Molecular Biosciences	2015 – 2019
13. Nan Bai	Molecular Biosciences,	2015 – 2019
14. Victor Vasquez Montes	Biochem. and Molecular Biol. at KUMC	2015 – 2020
15. Dwight Deay	Molecular Biosciences	2015 – 2021
16. Pallavi Guha Biswas	Molecular Biosciences	2016 – 2021
17. Anupama Kante	Molecular Biosciences	2016 – 2021
18. Pushpa Itagi	Computational Biology	2016 – 2021
19. Huijing Wang	Computational Biology	2016 – 2020
20. GW McElfresh	Computational Biology	2017 – 2020
21. Alexander Bowman	Molecular Biosciences	2017 – 2021
22. Amritangshu Chakravarty	Molecular Biosciences	2017 – 2021
23. Apurba Bhattarai	Computational Biology	2020 – 2022
24. Anna Clompen	Ecology and Evolutionary Biology	2018 – 2022
25. Hung Do Nguyen	Computational Biology	2021 – 2022
26. Shristi Pawnikar	Computational Biology	2021 – 2023
27. Matheus Oliveira De Souza	Pharmaceutical Chemistry	2023

### *Current:*

1. Nathan Jenkins	Computational Biology	2017 – present
2. Ian Kotthoff	Computational Biology	2019 – present
3. Sana Akheter	Computational Biology	2020 – present
4. Amar Kumar	Computational Biology	2020 – present
5. Keeley Collins	Computational Biology	2021 – present
6. Shaun Kelsey	Chemistry	2022 – present
7. Joseph Karnes	Chemistry	2021 – present
8. Naviya Schuster-Little	Chemistry	2022 – present
9. Tristan Sprague	Molecular Biosciences	2022 – present
10. Keya Joshi	Computational Biology	2023 – present

### **Rotation students:**

*32 Students are listed as Computational Biology Program (CB) or Molecular Biosciences Department (MB) along with which rotation (1 – 4), and the academic year (e.g. 20 – 21)*

Andrew Daufel (MB 1 22 – 23), Saeideh Nasri (MB 3 22 – 23), Keya Joshi (CB 1 20 – 21), Samuel Lim (CB 3 20 – 21), Sana Akhter (CB 1 19 – 20), Hung Do Nguyen (CB 2 19 – 20), Amar Kumar (CB 3 19 – 20), Vaishnavi Kulkarni (MB 3 19 – 20), Adam Podgorny (CB 1 18 – 19), Ryan Feehan (CB 1 18 – 19), Ayotunde Paul Ikuji (MB 2 18 – 19), Shristi Pawnikar (CB 3 18 – 19), Parker Sperstad (MB 3 18 – 19), Shamus Cooley (CB 1 17 – 18), Joseph Panushka (MB 2 17 -18), Sarah Mullinax (MB 1 16 – 17), Jaden Anderson (CB 1 16 – 17), Ian Kotthoff (CB 2 16 – 17), David Ingham (MB 3 16 – 17), Erica Keffeler (MB 3 16 – 17), Rik Dhar (MB 4 16 – 17), Meghan Franklin (CB 2 15 – 16), Amritangshu Chakravarty (MB 2 15 – 16), Christopher Kropiewnicki (CB 3 15 – 16), Seonghoon Kim (CB 1 14 – 15) Pallavi Biswas (CB 1 14 – 15), Anupama Kante (MB 2 14 – 15), Cali Thomas (CB 2 14 – 15), Yusuf Adeshina (CB 3 14 – 15), Nootan Pandey (MB 3 14 – 15), Pushpa Itagi (CB 3 14 – 15)

## Service

### *Service to the field*

- Associate Editor:
 

<i>PLoS Computational Biology</i>	<i>2021 – present</i>
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- Editorial Board:
 

<i>Journal of Membrane Biology</i>	<i>2019 – present</i>
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- Editorial Advisory Board:
 

<i>PEDS: Protein, Engineering, Design, and Selection</i>	<i>2020 – present</i>
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- The Protein Society
 

<i>Executive Council:</i>	<i>2022 – 2025</i>
<i>Co-chair Nominating Committee:</i>	<i>2022</i>
<i>Nominating Committee Member:</i>	<i>2019 – 2022</i>
- Co-chair Biophysical Society Thematic Meeting “Physical and Quantitative Approaches to Overcome Antibiotic Resistance” Stockholm, Sweden (Aug. 2022)
- Rosetta membership committee member
- Journal Reviewer for:
 

<i>BBA-biomembranes</i>	<i>Journal of Comp Chem</i>	<i>PLoS Comp Biology</i>
<i>Biochemistry</i>	<i>Journal of Mol. Biology</i>	<i>PLoS Biology</i>
<i>Biochimie</i>	<i>Molecular BioSystems</i>	<i>PNAS</i>
<i>Biophysical Journal</i>	<i>Molecular</i>	<i>Proteins</i>
<i>BMC Struct. Biology</i>	<i>Microbiology</i>	<i>Scientific Reports</i>
<i>Chemical Reviews</i>	<i>Nature Chem. Biology</i>	<i>Trends in Biotech</i>
<i>Environment. Microbio</i>	<i>Oncotarget</i>	
- Ad hoc grant reviewer: NSF, BBSRC (UK), National Science Centre in Poland, KUCR preproposals

### *University Service*

- Director of Graduate Admissions for Computational Biology Program 2016 – 2021, 2023
- University of Kansas Provost Search Committee 2019 – 2020
- College Sabbatical Committee 2017 – 2020
- Chair of College Sabbatical Committee 2019 – 2020
- Faculty Search Committee, Department of Molecular Biosciences 2022 – 2023
- Faculty Search Committee, Department of Molecular Biosciences 2020 – 2021
- Promotion committee for the Computational Biology Program 2021 and 2022
- Graduate Awards Committee for the Department of Molecular Biosciences 2017 – present
- Faculty Search Committee Computational Biology Program Fall 2017
- Faculty Search Committee Computational Biology Program 2016 – 2017

### *Promoting Science in High Schools*

- Chemistry Demonstration for K-12 STEM fair Overland Park, KS March 2019 and 2023
- Presentation: “How to Become a Scientist” to 9<sup>th</sup> graders in Overland Park, KS, April 2018
- Consultant: Students Modeling A Research Topic (SMART) team, Olathe North, KS, 2017
- Consultant: Olathe North, KS high school for the Science Olympiad, winter 2015

### *Community outreach*

1. “[I Am Striving: Joanna Slusky – YouTube](#)” (February 23, 2023)
2. “Overcoming Drug Resistant Super-Bugs” *New Generation Society*, Lawrence, KS (October 20, 2020)
3. Speaker for Campus Community Event: “Disabling Antibiotic Resistance”, *Red Hot Research*, Lawrence, KS (August 31, 2018)
4. Speaker for Campus Community Event: “Overcoming Drug Resistant Super Bugs”, *Ecumenical Campus Ministries*, Lawrence, KS (August 23, 2017)
5. “Making the antibiotics we already have work like new”. Women United in Healthcare Philanthropy, Lawrence, KS. January 20, 2017. *Keynote speaker*
6. “KCUR Central Standard Panel on Hidden Figures”. Kansas City, MO. January 4, 2017.
7. “Conversation with Dr. Joanna Slusky, inaugural recipient of the Moore Inventor Fellowship”. The Association for Women in Mathematics University of Kansas Student Chapter. November 15, 2016.
8. “How and Why to Go to Science Grad School”. College of the Ozarks, Chemistry Club, Point Lookout, MO. November 9, 2015. Recruitment talk for KU Computational Biology Program
9. “How and Why to Go to Science Grad School”. John Brown University, Department of Chemistry, Siloam Springs, AR. November 9, 2015. Recruitment talk for KU Computational Biology Program

### *News references to my work*



1. ‘Deep fake’ protein designed with artificial intelligence will target water pollutants” [ScienMag](#) (October 2022)
2. “New machine-learning approach is better at spotting enzymatic metals in proteins phys.org” [Phys.org](#) (September 2021)
3. “Antibiotic resistance is a dangerous consequence of our tendency to overuse drugs” [Business Insider](#) (May 7, 2020)
4. “The Protein in the Freezer (Cover Story!)” [KU Alumni Magazine](#), No. 5. (September 2017)
5. “Up to Date: Fighting Superbugs with Science” [KCUR Up to Date with Steve Kraske](#). (November 9, 2017)
3. “The War on Super Bug // And The Jewish Woman at The Forefront of The Battle” [Ami Magazine](#). (October 18, 2017)
4. “NIH Recognizes KU Professor's Innovative Antibiotics Research with Major Award” [Kansas City Jewish Chronicle](#). (October 12, 2017)
5. “KU Scientist Snags Another Big Award For Work On Antibiotic Resistance” [KCUR](#). (October 5, 2017)
6. “Dr. Joanna Slusky, protein designer!” [DiscovHer by Loreal showcasing women making science happen](#) (April 20, 2017)
7. “This Jewish Woman’s Research May Save Millions of Lives” [Jewish Telegraphic Agency](#). (December 8, 2016)
8. “KU’s Slusky Chosen as Moore Inventor Fellow” [Kansas City Jewish Chronicle](#). (November 10, 2016)
9. “5 Inventors You've Never Heard of Might Change the World with Moore Foundation's Help” [Silicon Valley Business Journal](#). (November 2, 2016)
10. “KU researcher studying antibiotic-resistance wins inaugural inventor award” [Lawrence Journal World](#). (November 2, 2016)
11. “KU Scientist’s Work on Antibiotic Resistance Wins Prestigious Award” [KUCR](#) (November 2, 2016)