

Curriculum Vitae  
**Elan Zohar Eisenmesser, Ph.D.**

**Personal information**

Elan Z. Eisenmesser, Ph.D.  
Assistant Professor  
Department of Biochemistry and Molecular Genetics  
University of Colorado Denver  
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**Education**

1987-1991 State University of New York at Stony Brook, Stony Brook, NY  
B.Sc. in Physics  
1992-1998 Purdue University, West Lafayette, IN  
Ph.D. in Biology with Dr. Carol Post  
1998-2000 National Cancer Institute, Frederick, MD  
Postdoctoral research/training with Dr. R. Andrew Byrd  
2000-2006 Brandeis University, Waltham, MA  
Postdoctoral research/training with Dr. Dorothee Kern

**Academic appointments**

1989-1991 Undergraduate Research Assistant with Dr. Peter Paul Department of  
Physics, State University of New York at Stony Brook, Stony Brook, NY  
1989-1991 Undergraduate Research Assistant with Dr. Michal Simon Department of  
Astronomy & Planetary Sciences, State University of New York at Stony Brook,  
Stony Brook, NY  
1992-1998 Graduate Research with Dr. Carol Post, Purdue University, West Lafayette, IN  
1998-2000 Postdoctoral associate for Dr. R. Andrew Byrd, National Cancer Institute,  
Frederick, MD  
2000-2006 Postdoctoral associate for Dr. Dorothee Kern, Brandeis University, Waltham, MA  
2006-2012 Assistant Professor, Department of Biochemistry and Molecular Genetics,  
  
University of Colorado Denver, Aurora, CO  
Second appointment, Department of Pharmacology  
2012-present Associate Professor, Department of Biochemistry and Molecular Genetics,  
University of Colorado Denver, Aurora, CO  
Second appointment, Department of Pharmacology

Faculty member, Biomedical Science Program  
Faculty member, Molecular Oncology Program, UC Cancer Center (UCCC)  
Faculty member, Biomolecular Structure Program  
Faculty member, Molecular Biology Program

## **Honors and Awards**

1991 SPS Physics Honor Society  
1992-1993 NIH Biophysics Training Grant  
1995-1996 NIH Biophysics Training Grant  
2007-2008 American Cancer Society Institutional Research Grant, UCCC  
2014 Mentor of the Year Award, University of Colorado, SOM

## **Major committee and service responsibilities**

### Departmental

2006-2008 Graduate Recruitment and Admission Committee  
2009-2010 Faculty Recruitment Committee

### University

2008-2012 Speaker & mentor in the Link to Advancement in Biomedical Research Career Opportunity And Training Section (LAB COATS) undergraduate minority program, Director Sonia Flores.  
2008 Organizer, UC Cancer Center symposium on “Structural Biology in Cancer Drug Design” (held on March 21, 2008)  
2008-2009 Biomolecular Structure Program Seminar Committee (One of two members).  
2009-2012 Mentor in the Strides Toward Encouraging Professionals in Science (STEPS) undergraduate minority program. Director Sue Lovato, Metropolitan State College of Denver  
2012-2014 Biomolecular Structure and Biochemistry Program Seminar Committee  
2012-2017 Biomolecular Structure and Biochemistry Program Student Admissions Committee.  
2019 Mentor Graduate Education for Minorities (GEMS), Directors Adela Cota-Gomez and Sonia Flores.  
2019-present Mentor for undergraduates through Karsh STEM Scholars Program, Howard University, Director Ronald Smith.

## **Review and referee work**

2008-present Ad hoc reviewer for Biomolecular Systems Cluster, National Science Foundation  
2007-present Ad hoc reviewer for Protein Science  
2007-present Ad hoc reviewer for National Science Foundation (CLP and MCB)  
2011 Ad hoc reviewer for the Journal of Chemical Theory and Computation  
2011 Ad hoc reviewer for Molecular Biology of the Cell  
2019-present Ad hoc reviewer for Nature Chemical Biology  
2019-present Ad hoc reviewer for Nature Communications

## **Selected invited lectures and presentations**

2008 "The CD147 interaction with its enzyme ligands", UC Cancer Center symposium, Aurora, CO

2009 "Cyclophilins and their receptor: Everybody's moving", Denver University

2009 "Cyclophilins and their receptor: Everybody's moving", Protein Gordon Conference, Holderness, NH

2011 "Cyclophilin-A and EMMPRIN: moonlighting outside of the cell", International Exosome Conference, Colorado State University, Fort Collins, CO

2011 "Cyclophilins and their receptor: Everybody's moving", Denver University

2014 "Cyclophilins and their receptor: Everybody's moving", Denver University "The untold truth of protein motions & function as revealed by NMR", University of Montana.

2013 "The ugly truth of enzyme dynamics motions: coupled chaos", American Physics Society, Four Corners Section Meeting, Denver, CO.

2013 "From intramolecular motions to moving between cells: new cyclophilin discoveries", Arizona State University.

2014 "The dynamics of allostery", Department of Pharmacology, UCD.

2017 "Networks of dynamic allostery control function". 2<sup>nd</sup> Annual Protein Engineering Conference. Toronto, CA

2018 "Protein dynamics drives redox regulation". Great Plains Regional Annual Symposium, Kansas, MO.

2020 "The structure and crazy dynamics of proteins: redox regulators to giant bacterial proteases". University of Texas, San Antonio, TX.

2021 "The dynamics and interactions of the SARS-CoV-2 Nucleocapsid." (Zoom) International Covid19 NMR Project, Goethe University Frankfurt.

## **Teaching**

### Medical School

2007-2018 Digestive, Endocrine and Metabolism Block (IDPT 6002), 4 hrs

### Graduate School

2007-present Proteins (PHSC/BMST 7350), 3 hrs

2008-present Biochemistry Core Course I-Ligand binding (IDPT7811), 4 hrs

2012-present Course Director, Proteins (PHSC/BMST 7350), 6 hrs

2015-present Basic Science Program Journal Club, 1 hr

2017-present Biochemistry Core Course I-Ligand binding/Kinetics (IDPT7811), 4 hrs

2017-present Biochemistry Core Course II-Methods (BSBT6072/IDPT7806), 2 hrs

### Trainee

Postdoctoral trainee:

Eunjeong Lee, Ph.D., 2021-present

Chi-Ying Chi, Ph.D., 2014-2017

Karim Bahmed, Ph.D., 2010-2012

Graduate students:

Norman Tran, Mentor/host Mitacs Globalink Research Award Scholar, 2020  
Agnieszka Kendrick, 2011-2016  
Michael Holliday, 2011-2016  
Jasmina Redzic, 2008-2012  
Jennifer Schlegel, 2007-2009

Undergraduate students:

Anna Gilstrap, Regis University, Fall-present 2021  
Sakthi Asokan, UCD Sophomore, Summer 2021  
Danielle Wills, GEM, Howard University, Summer 2019  
Chi Huynh, UCD Sophomore, Summer 2009-Summer 2011.  
John Jay, Denver Metro Undergraduate, Spring 2010.  
Jessica Martinez, UCD Sophomore, Summer 2009-Fall 2010.  
Brenda Zunigaparedes, UCD Senior, Spring 2009  
Mateo Romero, UCD Senior, Fall 2009

Professional research scientists:

Logan Meeks, Professional Research Assistant, 2020  
Lucas Ryan, Professional Research Assistant, 2020  
Natasia Paukovich, Professional Research Assistant, 2016-2019  
James Elder, Professional Research Assistant, 2017  
Thomas Roberts, Professional Research Assistant, 2016  
Johnathon Schafer, Professional Research Assistant, 2014-2017  
Johnathon Abbott, The Scholars for Knowledge in Learning and Leadership  
Mathematics Science Partnership (SKILLS MSP), Summer 2009  
Darin Brown, Professional Research Assistant, 2006-2008

Rotation students supervised:

Seth Noone, Winter 2006  
Tara Dobson, Fall 2007  
Carly Willenborg, Fall 2007  
Jennifer Schlegel, Spring 2008  
Jasmina Redzic, Spring 2008  
Van Willis, Spring, 2008  
Melanie Blevins, Winter 2009  
Hannah Johnston, Winter 2011  
Michael Holliday, Spring 2011  
Sarah Martin, Spring 2011  
Agnieszka Kendrick, Spring 2011  
Ryan Hill, Spring 2012  
Skyler Lee, Fall 2016  
Michael Olenak, Winter 2016  
Christal Davis, Winter 2017  
Cassandra Smith, Spring 2017

Gabrielle Lee, Spring 2017  
 Claire M Gillete, Spring 2018  
 Carolyn Nicole Brown, Spring 2020

Graduate student thesis committees:

Ying-Chih Chi	PI: C. Lui, 2008-2012	
Andrew Jacobson	PI: C. Lui, 2008-2014	Chair
James Whitehurst	PI: J. Kieft, 2008-2012	
Aaron Krueger	PI: R. Zhao, 2008-2013	
Amanda Crunk	PI: U. Christians, 2008-2012	
Sten Wie	PI: L. Krushel, 2008-2010	
Amanda Youts Keel	PI: J. Kieft, 2008-2011	
Ziqings Jiang	PI: R. Hodges, 2008-2012	Chair
Robert A. Hom	PI: T. Kutateladze, 2008-2011	Chair
James Kovacs	PI: M. Holers, 2007-2010	
Douglas C. Donham	PI: M. Churchill, 2007-2010	
Alice Bradley	PI: D. Jones 2008-2010	
John D. Laughlin	PI: D. Jones, 2008-2008	
Melanie Blevins	PI: R. Zhao 2009-2017	
Katherine Singleton	PI: L. Heasley 2010-2013	
Hao Yumeng	PI: J. Kieft 2010-2013	
Marisa Ruehle	PI: J. Kieft 2010-2014	Chair
Alexandra Antonioli	PI: M. Holers, 2012-2015	
Ryan Walsh	PI: K. Hansen 2012-2014	
Zane Jaffar	PI: J. Kieft 2012-2017	
Joshua Abbot	PI: D. LaBarbera 2015-2020	
Jenny M Samson	PI: M. Fujita 2014-2020	
Alexandra Born	PI: B. Vogeli 2016-2021	
Dylan Iverson	PI: N. Ahn 2020-present	
Hamish Pike	PI: D. Pollock 2018-present	
Rachel Hill	PI: A. D'Alessandro 2018-present	
Emma Sheriff	PI: B. Duerkop 2021-present	

## Grant Support

### Current grants:

National Institute of Health R01GM139892 (PI: Elan Eisenmesser)  
 09/15/21-06/30/25 \$200,000/year direct costs  
 Title: *The global regulation of dynamics and structure mediated by a single hydride in a family of reductases.*

National Science Foundation NSF1807326 (PI: Elan Eisenmesser)  
*Determining the role of dynamics in BLVRB function.*  
 08/01/2018 – 07/31/2021 (No Cost Extension, 07/31/2022) \$100,000/year direct costs

Title: *Determining the role of dynamics in BLVRB function*

National Institute of Health/NIAID R21AI146295 (PI: Elan Eisenmesser)  
12/19/2020 – 11/30/2021 (No Cost Extension, 07/31/2022) \$125,000/yr-1, \$150,000/yr-2  
Title: *Determining how the giant Streptococcus Pneumoniae IgA1 protease cleaves its host IgA1 substrate and how this interaction can be blocked.*

National Institute of Health/NCI R56CA230069 (PI: Elan Eisenmesser)  
09/08/2020 – 09/07/2021 (No Cost Extension, 87/31/2022) \$150,000 direct costs  
Title: *Identifying the missing link in inflammatory signaling.*

National Institute of Health/NIAID R01AI015614 (PI: Dinarello)  
10/21/2021 – 08/31/2026 \$10,000/year direct costs  
NIH/NIAID  
Title: *Pathogenesis of fever in man.*

Previous grants:

Golfers Against Cancer (PI: Elan Eisenmesser)  
10/01/19-09/30/20 \$50,000 total direct costs  
Title: *TIR domains and cancer.*

National Institute of Health R01GM107262 (PI: Elan Eisenmesser)  
05/01/14-04/30/18 \$200,000/year direct costs  
Title: *Combining chemical shift-based and experimental approaches to study enzyme dynamics.*

National Institute of Health R01GM096019 (PI: Elan Eisenmesser)  
04/01/11-03/31/16 \$190,000/year direct costs  
Title: *EMMPRIN: from biology to molecular mechanism.*

National Institute of Health/NCI R03CA219743 (PI: Elan Eisenmesser)  
07/01/2017 – 06/30/2019 \$50,000/year direct costs  
Title: *Interleukin-37: The molecular basis of the atypical interleukin-1 family dimer.*

Wendy Will Case Cancer Fund, Inc. AWK-110845 (PI: Elan Eisenmesser)  
01/01/11-11/31/11 \$30,000  
Title: *Characterizing the dual role of CD147 in cancer progression.*

National Science Foundation MCB-0820567 (PI: Elan Eisenmesser)  
9/1/08-8/31/11 \$92,000/year direct costs  
Title: *Probing dynamics within an enzyme family.*

Milheim Foundation for cancer prevention (PI: Elan Eisenmesser)  
7/1/08-6/30/09 \$10,000  
Title: *Characterizing the CD147 receptor and its cyclophilin ligand interactions.*

Cancer League of Colorado (PI: Elan Eisenmesser)  
7/1/08-6/30/09 \$30,000  
Title: *Characterizing the CD147 receptor and its cyclophilin ligand interactions.*

American Cancer Society/University of Colorado Cancer Center Seed Grant (PI: Elan Eisenmesser)  
6/1/07-6/30/08 \$20,000  
Title: *Characterizing the CD147 receptor and its cyclophilin ligand interactions.*

#### Mentored Awards:

National Institute of Health/NCI F31CA183206 (PI: Michael Holliday, mentor Elan Eisenmesser)  
9/1/14-8/30/16 \$58,392 total direct costs  
Title: *Developing Novel Methods to Identify Functionally Relevant Dynamics Sites of Proteins for Therapeutic Targeting.*

Program in Mol. Biol. 5T32GM008730-13 (Michael Holliday, mentor Elan Eisenmesser)  
07/01/12-06/31/14 \$20,000/year direct costs

National Institute of Health/NCI F31CA180392 (PI: Aga Kendrick, mentor Elan Eisenmesser)  
08/01/13-07/31/16 \$85,308 total direct costs  
Title: *The activity and molecular interactions of extracellular EMMPRIN.*

Thorkildsen Postdoctoral Fellowship (PI: Karim Bahmed, mentor Elan Eisenmesser)  
04/01/12-03/31/13 \$40,000/year direct costs  
Title: *The role of cyclophilin-A in pancreatic cancer.*

Department of Dermatology T32 AR 007411 (Karim Bahmed, mentor Elan Eisenmesser)  
02/01/11-03/30/12 \$50,000/year direct cost

#### **Current collaborators**

##### University of Colorado Denver affiliates (SOM)

Hongin Zheng, Department of Biochemistry & Molecular Biology  
Natalie Ahn, Department of Chemistry (UC Boulder)  
Angelo D'Alessandro, Department of Biochemistry & Molecular Biology  
James DeGregori, Department of Biochemistry & Molecular Biology  
Charles Dinarello, Division of Infectious Disease  
Kirk Hansen, Department of Biochemistry & Molecular Biology  
Michael V. Holers, Integrated Department of Immunology  
Edward Janoff, Division of Infectious Disease  
David Jones, Department of Pharmacology  
Jeffrey Kieft, Department of Biochemistry & Molecular Biology  
Tem Morrison, Department of Immunology & Microbiology  
David Pollock, Department of Biochemistry & Molecular Biology  
Mercedes Rincon, Department of Immunology & Microbiology  
Beat Vogeli, Department of Biochemistry & Molecular Biology

Rui Zhao, Department of Biochemistry & Molecular Biology

Outside the University of Colorado

Pratul Agarwal, Oklahoma State University

Wadie Bahou, Stony Brook University

Vladimir Chechetkin, TRINITI, Moscow, Russia

Antonio Javier Martin Galianco, Instituto de Salud Carlos III, Spain

Leo Joosten, Radboud University, Netherlands

Curtis Henry, Emory University

Donald Hammelberg, Georgia State University

Todd Holyoak, Waterloo University

Leo Joosten, Radboud University, Netherlands

Ruben Lopez-Vales, Insituto de Neurociencias, Spain

Stefania Madonna, Insitute of Dermatology Immaculate (IRCCS), Italy

Nikolai Sluchanko, Lomonosov Moscow State University, Moscow, Russia

Robert Thorne, Cornell University

Frank van de Veerdonk, Radboud University, Netherlands

Michele Vendruscolo, University of Cambridge, England

## 10. Bibliography

Peer reviewed publications prior to faculty appointment.

1. **Eisenmesser EZ**, Post CB "Insights into tyrosine phosphorylation control of protein-protein association from the NMR structure of a band 3 peptide inhibitor bound to glyceraldehyde-3-phosphate dehydrogenase" *Biochemistry* (1998) 37:867-77.
2. Post CB, Gaul BS, Eisenmesser EZ, Schneider ML "NMR structure of phosphotyrosine signaling complexes" *Med Res Rev* (1999) 19:295-305.
3. Pomes R, **Eisenmesser EZ**, Post CB, Roux B "Calculating excess chemical potentials using dynamic simulations in the fourth dimension" *J Chem Phys* (1999) 111:3387-95.
4. **Eisenmesser EZ**, Kapust RB, Nawrocki JP, Mazzulla MJ, Pannell LK, Waugh DS, Byrd RA "Expression, purification, refolding, and characterization of recombinant human interleukin-13: utilization of intracellular processing" *Protein Expr Purif* (2000) 20:186-95.
5. **Eisenmesser EZ**, Zabell AP, Post CB "Accuracy of bound peptide structures determined by exchange transferred nuclear Overhauser data: a simulation study" *J Biomol NMR* (2000) 17:17-32.
6. Kingston RL, Fitzon-Ostendorp T, **Eisenmesser EZ**, Schatz GW, Vogt VM, Post CB, Rossmann MG "Structure and self-association of the Rous sarcoma virus capsid protein" *Structure* (2000) 8:617-28.
7. **Eisenmesser EZ**, Horita DA, Altieri AS, Byrd RA "Solution structure of interleukin-13 and insights into receptor engagement" *J Mol Biol.* (2001) 310:231-41.
8. Eisenmesser EZ, Horita DA, Byrd RA "Secondary structure and backbone resonance assignments for human interleukin-13" *J Biomol NMR* (2001) 19:93-4.
9. Bosco DA, **Eisenmesser EZ**, Pochapsky S, Sundquist WI, Kern D "Catalysis of



- cis/trans isomerization in native HIV-1 capsid by human cyclophilin A" *Proc Natl Acad Sci U S A.* (2002) 99:5247-52.
10. **Eisenmesser EZ**, Bosco DA, Akke M, Kern D "Enzyme dynamics during catalysis" *Science* (2002) 295:1520-3.
  11. Wolf-Watz M, Thai V, Henzler-Wildman K, Hadjipavlou G, **Eisenmesser EZ**, Kern D "Linkage between dynamics and catalysis in a thermophilic-mesophilic enzyme pair". (2004) *Nat Struct Mol Biol.* 11:945-9.
  12. **Eisenmesser EZ**, Millet O, Labeikovsky W, Korzhnev DM, Wolf-Watz M, Bosco DA, Skalicky JJ, Kay LE, Kern D "Intrinsic dynamics of an enzyme underlies catalysis" *Nature* (2005) 438:117-21.
  13. Kern D, **Eisenmesser EZ**, Wolf-Watz M "Enzyme dynamics during catalysis measured by NMR spectroscopy" *Methods Enzymol.* (2005) 394:507-24.

Peer reviewed publications after faculty appointment.

14. Labeikovsky W, **Eisenmesser EZ**, Bosco D, Kern D "Structure and dynamics of pin1 by NMR" *J Mol Biol.* (2007) 367:1370-81.
15. Thai V, Renesto P, Fowler CA, Brown D, Davis T, Gu W, Pollock DD, Kern D, Raoult D, **Eisenmesser EZ**. "Structural, biochemical, and in vivo studies of the first virally encoded cyclophilin from the Mimivirus" (2008) *J Mol Biol.* 378: 71-86.
16. Davis T, Walker J, Ouyang H, Mackenzie F, Newman E, **Eisenmesser EZ**, Dhe-Paganon S "The Crystal Structure of Human WD40-Repeat Domain Peptidyl-Prolyl Isomerase" *FEBS* (2008) 275: 2283-95.
17. Kovacs JM, Hannan JP, **Eisenmesser EZ**, Holers VM. Mapping of the C3D ligand binding site on complement receptor 2 (CR2/CD21) using nuclear magnetic resonance and chemical shift analysis " *J. Biol Chem.* (2009) 284: 9513-9520.
18. Schlegel J, Armstrong G, Redzic JS, Zhang F, and **Eisenmesser EZ**. "Characterizing and controlling the inherent dynamics of cyclophilin-A" *Protein Science* (2009) 18: 811-824.
19. Schlegel J, Redzic JS, Porter CC, Yurchenko V, Bukrinsky M, Armstrong GS, Zhang F, Isern NG, DeGregori J, Hodges R, **Eisenmesser EZ**. "Solution characterization of the extracellular region of EMMPRIN/CD147 and its interaction with its enzyme ligand cyclophilin-A". *J Mol Biol.* (2009) 18: 518-535.
20. Clarkson MW, Lei M, **Eisenmesser EZ**, Labeikovsky W, Redfield A, Kern D "Mesodynamics in the SARS nucleocapsid measured by NMR field cycling" *J. Biomol. NMR* (2009) 45:217-225.
21. Gardino AK, Villali J, Kivenson A, Lei M, Liu CF, Steindel P, Eisenmesser EZ, Labeikovsky W, Wolf-Watz M, Clarkson MW, Kern D. "Transient non-native hydrogen bonds promote activation of a signaling protein." (2009) *Cell* 11:139(6):1049-1051.
22. Yurchenko V, Constant S, Eisenmesser EZ, Bukrinsky M. "Cyclophilin-CD147 interactions: a new target for anti-inflammatory therapeutics." *Clin Exp Immunol.* (2010) 160(3):305-317.
23. Kovacs JM, Hannan JP, **Eisenmesser EZ**, Holers VM. " Biophysical investigations of complement receptor 2-ligand interactions reveal amino acid contacts unique to each receptor-ligand pair. " *J. Biol Chem.* (2010) 285(35): 27251-8.
24. Davis TL, Walker JR, Campagna-Slater V, Finerty PJ, Paramanathan R, Bernstein G,

- MacKenzie F, Tempel W, Ouyang H, Lee WH, **Eisenmesser EZ**, Dhe-Paganon S. "Structural and biochemical characterization of the human cyclophilin family of peptidyl-prolyl isomerases." *PLoS Biol.* (2010). 8(7):e1000439
25. Bosco DA, **Eisenmesser EZ**, Clarkson MW, Wolf-Watz M, Labeikovsky W, Millet O, Kern D. "Dissecting the microscopic steps of the cyclophilin A enzymatic cycle on the biological substrate HIV capsid by NMR." *J. Mol Biol.* (2010) 403(5):723-738.
26. Redzic JS, Armstrong GS, Isern NG, Jones DN, Kieft JS, **Eisenmesser EZ**. "The retina-specific CD147 Ig0 domain: from molecular structure to biological activity". *J Mol Biol.* (2011) 411(11):68-82.
27. Bahmed K, Henry C, Holliday M, Redzic JS, Ciobanu M, Zhang F, Weekes C, Sclafani RA, Degregori J, **Eisenmesser EZ**. "Extracellular cyclophilin-A stimulates ERK1/2 phosphorylation in a cell dependent manner but broadly stimulates nuclear factor kappa B." *Cancer Cell Int.* (2012) 12(1):19.
28. Chi YC, Armstrong GS, Jones DN, **Eisenmesser EZ**, Liu CW. "Residue histidine 50 plays a key role in protecting  $\alpha$ -synuclein from aggregation at physiological pH" *J. Biol. Chem.* (2014) 289(22):15474-81.
29. Krueger AB, Drasin DJ, Lea WA, Patrick AN, Patnaik S, Backos DS, Matheson CJ, Hu X, Barnaeva E, Holliday MJ, Blevins MA, Robin TP, **Eisenmesser EZ**, Ferrer M, Simeonov A, Southall N, Reigan P, Marugan J, Ford HL, Zhao R. "Allosteric inhibitors of the Eya2 phosphatase are selective and inhibit Eya2-mediated cell migration" *J. Biol. Chem.* (2014) 289(23):16349-61.
30. Holliday M, Zhang F, Isern NG, Armstrong GS, **Eisenmesser EZ**. "<sup>1</sup>H, <sup>13</sup>C and <sup>15</sup>N backbone and side chain resonance assignments of thermophilic *Geobacillus Kaustophilus* cyclophilin-A." *Biomolecular NMR Assignments* (2014) 8(1): 23-27.
31. Kendrick AA, Holliday MJ, Isern NG, Zhang F, Camilloni C, Huynh C, Vendruscolo M, **Eisenmesser EZ**. "The dynamics of interleukin-8 and its interaction with human CXCR1 receptor I peptide." *Protein Sci.* (2014) 23(4):464-80.
32. Camilloni C, Sahakyan AB, Holliday MJ, Isern NG, Zhang F, **Eisenmesser EZ**, Vendruscolo M. "Cyclophilin A catalyzes proline isomerization by an electrostatic handle mechanism" (2014) 111(28):10203-8.
33. **Eisenmesser EZ**, Capodagli GC, Armstrong GS, Holliday MJ, Isern NG, Zhang F, Pagan SD. "Inherent dynamics within the Crimean-Congo Hemorrhagic fever virus protease are localized to the same region as substrate interactions." *Protein Science* (2015) 24(5):651-660.
34. Holliday MJ, C, Armstrong GS, **Eisenmesser EZ**. "Determination of the Fully Catalytic Cycle among Multiple Cyclophilin Family Members and Limitations on the Application of CPMG-RD in Reversible Catalytic Systems". *Biochemistry* (2015) 54(38): 5815-27.
35. Doshi U, Holliday MJ, **Eisenmesser EZ**, Hamelberg D. "Dynamical network of residue-residue contacts reveals coupled allosteric effects in recognition, catalysis, and mutation". *Proc Natl Acad Sci* (2016) 113(17):4734-40.
36. Holliday MJ, Camilloni C, Armstrong GS, Vendruscolo M, **Eisenmesser EZ**. "Networks of Dynamic Allostery Regulate Enzyme Function". *Structure* (2017) 25(2): 276-286.
37. Cavalli, G, Justic, JN, Boyle, KE, D'Alessandro, A, **Eisenmesser EZ**, Herrera, JJ, Hansen, KC, Nemkov, T, Stienstra, R, Garlanda, C, Mantovani, A, Seals, DR, Dagna, L, Joosten, LAB, Ballak, DB, Dinarello, CA. "Interleukin 37 reverses the metabolic cost

of inflammation, increases oxidative respiration and improves exercise tolerance.” PNAS (2017) 114(9):2313-2318.

38. Redzic JS, Kindrick AA, Bahmed K, Dahl KD, Pearson CG, Robinson WA, Robinson SE, Graner MW, **Eisenmesser EZ**. “Extracellular Vesicles Secreted from Cancer Cell Lines Stimulate Secretion of MMP-9, IL-6, TGF- $\beta$ 1, and EMMPRIN.” PLoS One (2013) 8(8):e71225.
39. Kendrick AA, Shafer J, Dzieciatkowska M, Nemkov T, Alessandaro AD, Neelakantan D, Ford HL, Pearson CG, Weekes CD, Hansen KC, **Eisenmesser EZ**. “CD147: a small molecule transporter ancillary protein at the crossroad of multiple hallmarks of cancer and metabolic reprogramming”. Oncotarget (2017) 8(4):6742-6762.
40. Rajiv C, Jackson SR, Cocklin S, **Eisenmesser EZ**, Davis TL. “The spliceosomal proteins PPIH and PRPF4 exhibit bi-partite binding”. Biochem. J. (2017) 474(21):3689-3704.
41. Chi YC, Rahkola JT, Kendrick AA, Holliday MJ, Paukovich N, Roberts TS, Janoff EN, **Eisenmesser EZ**. “Streptococcus pneumonia IgA1 protease: A metalloprotease that can catalyze in a split manner in vitro.” Protein Sci. (2017) 26(3):600-610.
42. Mercurio L, Morelli M, Scarponi C, **Eisenmesser EZ**, Doti N, Pagnanelli G, Gubinelli E, Mazzanti C, Cavani A, Ruvo M, Dinarello CA, Albanesi C, and Madonna S. “IL-38 has an anti-inflammatory action in psoriasis and its expression correlates with disease severity and therapeutic response to anti-IL-17A treatment”. Cell Death Dis. (2018) 9(11):1104.
43. Paukovich, N, Xue M, Elder JR, Redzic JS, Blue A, Pike H, Miller BG, Pitts TM, Pollock DD, Hansen K, D'Alessandro A, **Eisenmesser EZ**. “Biliverdin reductase B dynamics are coupled to coenzyme binding”. JMB (2018) 430: 3234-3235.
44. Salmon L, Stull F, Sayle S, Cato C, Akgül Ş, Foit L, Ahlstrom LS, **Eisenmesser EZ**, Al-Hashimi HM, Bardwell JCA, Horowitz S. “The Mechanism of HdeA Unfolding and Chaperone Activation”. J. Mol. Biol. (2018) 430(1):33-40.
45. D'Alessandro A, Hansen KC, **Eisenmesser EZ**, Zimring JC. “Protect, repair, destroy or sacrifice: a role of oxidative stress biology in inter-donor variability of blood storage?” Blood Transfus. (2019) 17(4):281-288.
46. **Eisenmesser EZ**, Gottschlich A, Redzic JS, Paukovich N, Nix JC, Azam T, Zhang L, Zhao R, Kieft JS, The E, Meng X, Dinarello CA. “Interleukin-37 monomer is the active form for reducing innate immunity”. Proc Natl Acad Sci (2019) 116(12):5514-5522.
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