D. Biosketches for leadership and personnel

Dr. Ewa Folta-Stogniew, who serves as the core director, is the only personnel of Biophysics Core.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.

Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Ewa Folta-Stogniew	POSITION TITLE Research Scientist
eRA COMMONS USER NAME EFOLTA	

EDUCATION (Begin with BA or other initial professional education, and include postdoctoral training.)

INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Technical University of Wroclaw, Wroclaw, Poland	MSc	1984	Chemistry
Wesleyan University, Middletown, CT	PhD	1996	Molecular Biophysics
Yale University, New Haven, CT	Postdoc	1998	Genetics

Please refer to the application instructions in order to complete sections A, B, C, and D of the Biographical Sketch.

A. Personal Statement

Briefly describe why your experience and qualifications make you particularly well-suited for your role (e.g. PD/PI, mentor, participaing faculty) in the project that is the subject of the application.

Dr. Folta-Stogniew has broad experience in using biophysical approaches to elucidate sizes and oligomeric states of macromolecular assemblies, enzyme mechanisms and macromolecular interactions using: surface plasmon resonance (Vanderschuren et al., 2022; Wexler et al. 2018, Li. et al., 2011, Pirruccello, et al., 2011, Casuscelli,et al., 2009) isothermal microcalorimetry (Murray, P.B. et al, 2015; Benach, J., et al, 2007), light scattering (Folta-Stogniew E 2021; Hsiao et al., 2020; 2010; Kapoor et al., 2010; Hopes et al., 2010; Das, S., et al., 2008; Crichlow, G. V. et al., 2008), fluorescence and stopped-flow (Bazemore et al.,1997; Folta-Stogniew et al.,2004; Gupta et al.,1999a; Gupta et al.,1999b; Palczewski et al.,1985).

Founded and has served as the Director of the Keck Biophysics Resource since 1998.

Solely responsible for implementation and support for 10 different technologies:

A. Static Light Scattering for determination of molar masses of macromolecular complexes:
   i. stand-alone batch experiments
   ii. in conjunction with HPLC Size Exclusion Chromatography
B. Dynamic Light Scattering for determination of diffusion coefficient and hydrodynamic radius:
C. Fluorescence Spectroscopy

D. Fluorescence Polarization for binding studies
E. Stopped-Flow Spectroscopy for fast kinetics
F. Isothermal Microcalorimetry
G. Surface Plasmon Resonance (BiaCore) analysis of binding interactions
H. Flow Field-Flow fractionation system
I. Matrix Assisted Laser Desorption Ionization Mass Spectrometry Time of the Flight (MALDI/MS-TOF)
J. Circular dichroism spectroscopy

Her effectiveness in technology implementation and method development for diverse research needs is best illustrated by the resource contributions to diverse research projects; data collected in the resource either directly by Dr. Folta-Stogniew or under Dr. Folta-Stogniew guidance contributed to over 100 publications and advanced research of 52 PIs from 27 institutions.

Positions and Honors

Positions and Employment

1984 - 1990 Research Assistant, Technical University of Wroclaw, Wroclaw, Poland

1990 - 1996 Teaching Assistant, Wesleyan University, Middletown, CT

1996 - 1997 Postdoctoral Fellow, Yale University School of Medicine, Department of Genetics, New Haven, CT

1997-1999 Postdoctoral Associate, Yale University School of Medicine, Department of Molecular Biophysics and Biochemistry, New Haven, CT

1999-2010 Associate Research Scientist, Yale University School of Medicine, Department of Molecular Biophysics and Biochemistry, New Haven, CT

2010-present Research Scientist, Yale University School of Medicine, Department of Molecular Biophysics and Biochemistry, New Haven, CT

Honors

1993 Petersson Fellowship Award, Wesleyan University

1996 Brown-Coxe Fellowship Award, Yale University

B. Selected peer-reviewed publications

1. Palczewski, K., Hargrave, P., Folta, E.J. and Kochman, M. (1985) Affinity labeling of rabbit muscle fructose-1,6-bisphosphate aldolase with 5'-[p-(fluorosulfonyl)benzoyl]-1,N^6-ethenoadenosine. Eur. J. Biochem. 146, 309-314. PMID:3967660
2. Folta-Stogniew, E. and Russu, I.M. (1994) Sequence dependence of base-pair opening in a DNA dodecamer containing the CACA/GTGT sequence motif. Biochemistry 33, 11016-11024. PMID:8086418
3. Moe, J.G., Folta-Stogniew, E. and Russu, I.M. (1995) Energetics of base-pair opening in a DNA dodecamer containing an A^3T^3 tract. Nucleic Acids Res. 23, 1984-1989. PMID:7596827
4. Folta-Stogniew, E. and Russu, I.M. (1996) Base-catalysis of imino proton exchange in DNA: effects of catalyst upon DNA structure and dynamics. Biochemistry 35, 8439-8449. PMID:8679602
5. Bazemore, L.R., Folta-Stogniew, E., Takahashi, M. and Radding, C.M. (1997) RecA tests homology at both pairing and strand exchange. Proc. Natl. Acad. Sci. U.S.A. 94, 11863-11868. PMID:9342328
6. Gupta, R.C., Folta-Stogniew, E. and Radding, C.M. (1999) Human Rad51 protein can form homologous joints in the absence of net strand exchange. J. Biol. Chem. 274, 1248-1256. PMID:9880493

7. Folta-Stogniew, E. and Williams, K.R. (1999) Determination of molecular masses of proteins in solution: Implementation of an HPLC size exclusion chromatography/laser light scattering service in a core laboratory. J. Biomolec. Tech., 10, 51-63. PMID:19499008
8. Gupta,R.C., E. Folta-Stogniew, S. O'Malley, M. Takahashi and C.M. Radding (1999) Rapid Exchange of A:T Base Pairs is Essential for Recognition of DNA Homology by Human Rad51 recombination Protein. Mol. Cell, 4, 705-714. PMID:10619018
9. Yernool, D., O. Boudker, E. Folta-Stogniew and E. Gouaux (2003) Trimeric Subunit Stoichiometry of Glutamate Transporters. Biochemistry, 42, 12981-12988. PMID:14596613
10. Folta-Stogniew, E., S. O'Malley, R. Gupta, K. S. Anderson and C. M. Radding (2004) Exchange of DNA Base Pairs that Coincides with Recognition of Homology Promoted by E. coli RecA Protein. *Mol. Cell* 15, 965-975. PMID:15383285
11. Folta-Stogniew, E. (2006) Oligomeric States of Proteins Determined by Size-Exclusion Chromatography Coupled with Light Scattering, Absorbance and Refractive Index Detectors in Methods in Molecular Biology: New and Emerging Proteomics Techniques (Nedelkov, D., and Nelson, R. eds) pp. 97-112 Humana Press, Totowa, NJ PMID:16785643
12. Stone K L, Bjornson R. D., Blasko G. G., Bruce C., Cofrancesco R., Carriero N. J., Colangelo C. M., Crawford J. K., Crawford J. M., daSilva N. C., Deluca J. D., Elliott J. I., Elliott M. M., Flory P. J., Folta-Stogniew E. J., Gulcicek E., Kong Y., Lam T. T., Lee J. Y., Lin A., LoPresti M. B., Mane S. M., McMurray W. J., Tikhonova I. R., Westman S., Williams N. A., Wu T. L., Hongyu Z., and Williams K. R. (2007) Keck Foundation Biotechnology Resource Laboratory, Yale University. *Yale J.Biol.Med.* 80; 195-211 PMID:18449392
13. Benach, J., Swaminathan, S. J., Tamayo, R., Handelman, S., Folta Stogniew, E. Ramos, J. E., Forouhar, F., Neely, H., Jayaraman Seetharaman, J., Camilli, A., and Hunt, J. F., (2007) "The structural basis of cyclic diguanylate signal transduction by PilZ domains", *EMBO J* 26: 5153-5166 PMID:18034161
14. Crichlow, G. V., Zhou, H., Hsiao, H-h., Frederick, K. B.,, Debrosse, M., Yuande Yang, Y., Folta-Stogniew, E. J., Chung, H-J., Chengpeng Fan, C., De La Cruz, E., Levens, D., Lolis, E., and Braddock, D. (2008) "Dimerization of FIR upon FUSE binding suggests a mechanism of c-myc inhibition", *EMBO J* 27: 277-289 PMID:18059478
15. Das S, Stivison E, Folta-Stogniew E, Oliver D. (2008) "Re-examination of the Role of the Amino-Terminus of SecA in Promoting Its Dimerization and Functional State", J Bacteriol. 190, 7302-7307 PMID:18723626[
16. Folta-Stogniew, Ewa J (2009) Light Scattering. In: ENCYCLOPEDIA OF LIFE SCIENCES. John Wiley & Sons, Ltd: Chichester http://www.els.net/ [DOI: 10.1002/9780470015902.a0003143]

17. Casuscelli, J., Schmidt, S., DeGray, B., Petri, E. T., Celic, A., Folta-Stogniew, E., Ehrlich, B. E., and Boggon, T. J. (2009) "Analysis of the cytoplasmic interaction between polycystin-1 and polycystin-2" *Am J Physiol Renal Physiol* 297, 297; F1310-F1315 PMID:19726544
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21. Pirruccello, M., Swan, L.E., Folta-Stogniew, E., De Camilli, P. (2011) Recognition of the F&H motif by the Lowe Syndrome protein OCRL: *Nature Structural Biology,* 18;:789-95 PMID:21666675
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33. Hsiao HT, Crichlow GV, Murphy JW, Folta-Stogniew EJ, Lolis EJ, Braddock DT (2020) Unraveling the mechanism of recognition of the 3' splice site of the adenovirus major late promoter intron by the alternative splicing factor PUF60. PloS one 15 (11):e0242725. doi:10.1371/journal.pone.0242725 (PMID: 33253191 PMCID: PMC7703929)
34. Folta-Stogniew E (2021) Characterization of Protein-Nucleic Acid Complexes by Size-Exclusion Chromatography Coupled with Light Scattering, Absorbance, and Refractive Index Detectors. Methods in molecular biology (Clifton, NJ) 2263:381-395. doi:10.1007/978-1-0716-1197-5_18 (PMID: 33877609)
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36. Vanderschuren K, Arranz-Gibert P, Khang M, Hadar D, Gaudin A, Yang F, Folta-Stogniew E, Saltzman WM, Amiram M, Isaacs FJ (2022) Tuning protein half-life in mouse using sequence-defined biopolymers functionalized with lipids. Proc Natl Acad Sci U S A 119 (4). doi:10.1073/pnas.2103099119 (PMID: 34944490)