Nicholas Attila Kovacs

BIOINFORMATICIST
NicholasAKovacs | NicholasAKovacs

Education

Ph.D. Bioinformatics — *Atlanta, Georgia*
GEORGIA INSTITUTE OF TECHNOLOGY — *Aug 2013 - Dec 2018*

B.S. Biochemistry and Molecular Biology/Biotechnology — *East Lansing, Michigan*
MICHIGAN STATE UNIVERSITY — *Aug 2008 - May 2012*

Publications

(8) **Kovacs, N. A.**, Penev, P. I., Venapally, A., Petrov, A. S., Williams, L. D. "Circular Permutation Obscures the Universality of a Ribosomal Protein", *J. Mol. Evol.* 86, pgs 581-592 (2018)

(7) Bernier, C.R., Petrov, A. S., **Kovacs, N. A.**, Penev, P. I., Williams, L. D. "Translation: The Universal Structural Core of Life", *Mol. Biol. Evol.* 35, pgs 2065-2076 (2018)

(6) Gómez Ramos, L. M., Degtyareva, N. N., **Kovacs, N. A.**, Holguin, S. Y., Jiang, L., Petrov, A. S., Biesiada M., Hu, M. Y., Purzycka, K. J., Arya, D. P., Williams, L. D. "Eukaryotic Ribosomal Expansion Segments as Antimicrobial Targets", *Biochemistry* 56, pgs 5288-5299 (2017)

(5) **Kovacs, N.A.**, Petrov, A.S., Lanier, K.A., and Williams, L.D. "Frozen in Time: The History of Proteins", *Mol. Biol. Evol.* 34, pgs 1252-1260 (2017)

(4) Gómez Ramos, L.M., Smeekens, J.M., **Kovacs, N.A.**, Bowman, J.C., Wartell, R.M., Wu, R., and Williams, L.D. "Yeast rRNA Expansion Segments: Folding and Function", *J. Mol. Biol.* 428, pgs 4048-4059 (2016)

(3) Petrov, A.S., Gulen, B., Norris, A.M., **Kovacs, N.A.**, Bernier, C.R., Lanier, K.A., Fox, G.E., Harvey, S.C., Wartell, R.M., Hud, N.V., and Williams, L.D. "History of the Ribosome and the Origin of Translation", *Proc. Natl. Acad. Sci. U.S.A.* 112, pgs 15396-15401 (2015)

(2) Petrov, A.S., Bernier, C.R., Hsiao, C., Norris, A.M., **Kovacs, N.A.**, Waterbury, C.C., Stepanov, V.G., Harvey, S.C., Fox, G.E., Wartell, R.M., Hud, N.V., and Williams, L.D. "Evolution of the Ribosome at Atomic Resolution", *Proc. Natl. Acad. Sci. U.S.A.* 111, pgs 10251-10256 (2014)

(1) Sharma, M., Predeus, A.V., **Kovacs, N.A.**, and Feig, M. "Differential Recognition Specificities of Eukaryotic MutSα and MutSβ", *Biophys. J.* 106, pgs 2483-2492 (2014)

Research Experience

ORISE Genomics Analysis Postdoctoral Fellow — *Centers for Disease Control & Prevention*
ADVISER: DR. REBECCA GARTEN KONDOR — *Feb 2019 - Current*
Project: *Structural and Phylogenetic Evolution of Influenza Proteins*

Graduate Research Assistant — *Georgia Institute of Technology*
ADVISER: DR. LOREN WILLIAMS — *Aug 2013 - Dec 2018*
PhD Thesis: *Data Mining the Structure of the Ribosome to Unravel the History of Proteins*

East Asia and Pacific Summer Institutes Fellow — *National Taiwan University*
ADVISER: DR. CHIAOLONG HSIAO — *Jun 2017 - Aug 2017*
Project: The Evolution of Proteins in Eukaryotes: Data Mining the Ribosome Structure

Undergraduate Research Associate — *Michigan State University*
ADVISER: DR. MICHAEL FEIG — *Dec 2012 - May 2012*
Project: Molecular simulations of Mismatch Repair Enzymes MutSα and MutSβ

Molecular Biology Exchange Student — *Heinrich-Heine Universität*
ADVISER: DR. PETER WESTHOFF — *May 2011 - Jul 2011*
Project: DNA-protein interaction of cis-regulatory elements in *Flaveria sp.*

Undergraduate Research Associate — *Michigan State University*
ADVISER: DR. YAIR SHACHAR-HILL — *Sept 2010 - Mar 2011*
Project: Metabolic flux analysis of carbon through *Nanochloropsis sp.*

Undergraduate Research Associate — *Michigan State University*
Adviser: Dr. Yair Shachar-Hill — *Jun 2010 - Jul 2010*
Project: Aquaporin signalling in *Arabidopsis thaliana* gametogensis

Undergraduate Research Associate — *Michigan State University*
Adviser: Dr. Cristoph Benning — *Feb 2010 - May 2010*
Project: Protein-protein interactions in ER to chloroplast lipid trafficking

Awards and Scholarships

NSF East Asia and Pacific Institutes — *National Taipei University*
EAPSI Fellow — *Mar 2017 - Mar 2018*
- **Project**: The Evolution of Proteins in Eukaryotes: Data Mining the Ribosome Structure
- **Adviser**: Dr. Chiaolong Hsiao
- **PI**: Nicholas Attila Kovacs
- Awarded stipend, living allowance, and roundtrip airfare to Taipei, Taiwan

Petit Undergraduate Research Scholars Program — *Georgia Institute of Technology*
Graduate Mentor — *Jan 2017 - Dec 2017*
- Research mentor for undergraduate student
- Monetary award for materials and conference travel

BASF Chemistry Symposium — *Georgia Institute of Technology*
3rd Place — *Apr2017*
- Oral presentation of PhD thesis research to Chemistry Department and science panel from BASF

Presentations

The Evolution of Proteins: Data Mining the Ribosome Structure — *Tokyo, Japan*
Earth and Life Science Institute 6th International Symposium · poster — *Jan 2018*

The History of Proteins — *Charlottesville, VA*
Astrobiology Graduate Student Conference · oral — *Jun 2017*

Eukaryotic Ribosomal Protein Evolution — *Atlanta, GA*
BASF Chemistry Symposium · oral — *Apr 2017*

Frozen in Time: The History of Proteins — *Quy Nhon, Vietnam*
Search for Life: From Early Earth to Exoplanets · oral — *Dec 2016*

Frozen in Time: The History of Proteins — *Atlanta, GA*
Georgia Tech Chemistry Retreat · oral — *Oct 2016*

The History of Protein Folding — *Madison, WI*
Astrobiology Graduate Student Conference · oral — *Jul 2015*

The History of Protein Folding — *Troy, NY*
Astrobiology Graduate Student Conference · poster — *Jul 2014*

Teaching Experience

Graduate Teaching Assistant — *Georgia Institute of Technology*
Professor: Dr. Loren Williams — *Fall 2016*
Course: CHEM 6572 - Macromolecular Structure (half time)

Graduate Teaching Assistant — *Georgia Institute of Technology*
Professor: Dr. Mary Peek — *Fall 2016*
Course: CHEM 4582 - Biochemisty Laboratory II (half time)

Graduate Teaching Assistant — *Georgia Institute of Technology*
Professor: Dr. Pamela Peralta-Yahya — *Summer 2016*
Course: CHEM 3511 - Survey of Biochemistry

Graduate Teaching Assistant *Georgia Institute of Technology*
Professor: Dr. Mary Peek *Spring 2016*
Course: CHEM 4582 - Biochemisty Laboratory II

Graduate Teaching Assistant *Georgia Institute of Technology*
Professor: Dr. Mary Peek *Fall 2015*
Course: CHEM 4582 - Biochemisty Laboratory II

Graduate Teaching Assistant *Georgia Institute of Technology*
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Course: CHEM 4582 - Biochemisty Laboratory II

Graduate Teaching Assistant *Georgia Institute of Technology*
Professor: Dr. Mary Peek *Fall 2013*
Course: CHEM 4582 - Biochemisty Laboratory II