

# Nicholas Attila Kovacs

## BIOINFORMATICIST & DATA SCIENTIST

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## Profile

The PMF program will help me transition from biological data science to scientific diplomacy. Relevant experience for the PMF program: team leading experience gained as a laboratory-course teaching assistant, public speaking experience from presentations at international and domestic conferences, project management skills via providing computational analyses for five coworkers' projects during PhD candidacy, mentoring experience through a graduate-undergraduate mentoring program, and written communication skills sharpened through academic journal article and grant writing. Relevant experiences for science diplomacy: conducted summer 2017 research in Taiwan, 2 Korean language courses, and a Modern Korean History course.

## Education

**Ph.D. Bioinformatics** – GPA: 3.47 – GRE: 160 Q / 157 V / 4.5 A

GEORGIA INSTITUTE OF TECHNOLOGY

Aug 2013 - Dec 2018

Atlanta, GA

- Awarded 2017 NSF East Asia and Pacific Summer Institutes Scholarship for Research in Taipei, Taiwan

**B.S. Biochemistry and Molecular Biology/Biotechnology** – GPA: 3.22

MICHIGAN STATE UNIVERSITY

Aug 2008 - May 2012

East Lansing, MI

## Experience

### Graduate Research Assistant

GEORGIA INSTITUTE OF TECHNOLOGY - ADVISOR: DR. LOREN WILLIAMS

Aug 2013 - Current

Atlanta, GA

**Dissertation:** *Data Mining the Atomic Structure of the Ribosome to Unravel the History of Protein Folding*

- **Summary:** The ribosome is present in every cell of life and is the molecular factory that makes protein according to information encoded within DNA sequence. Analyzing the atomic structures of the ribosome has revealed the interrelatedness and origin of life.
- **Results:** One 1<sup>st</sup>-author research article published, 2<sup>nd</sup> recently accepted and 3<sup>rd</sup> in preparation.
- **Funding:** NASA Astrobiology Institute
- **Collaboration:** Computational analysis for coworkers' projects resulted in coauthor of 2 experimental and 3 computational research articles.
- **Communication:** Independently wrote and awarded \$7,000+ NSF grant to support summer research in Taiwan. Oral and poster presentations at 7 domestic and international scientific conferences.
- **Mentoring:** Awarded \$2,500 conference and travel funding for mentoring undergraduate student.
- **Courses:** 4 Biochemistry, 3 Biology, 3 Computer Science, 3 Korean, and 1 Math courses taken or audited. 1 certification for Business course.

### Graduate Teaching Assistant

GEORGIA INSTITUTE OF TECHNOLOGY

Aug 2013 - Dec 2016

Atlanta, GA

- **Biophysical Chemistry Lab(CHEM 4582)** - 6 semesters - Instructed ~8 undergraduate students on experimental and computational protocols.
- **Macromolecular Structure(CHEM 6572)** - 2 semesters - Directed ~25 graduate students on the use of computational modelling programs.
- **Survey of Biochemistry(CHEM 3511)** - 1 semester - Guided ~40 undergraduate students to solve homework problems in weekly recitation.

## Selected Publications and Presentations

3 SELECT PUBLICATIONS FROM A TOTAL OF 8 PUBLICATIONS WITH 153 CITATIONS

- **Kovacs, N. A.**, Penev, P., Venapally, A., Petrov, A. S., Williams, L. D. "Circular permutation obscures universality of a ribosomal protein", Recently accepted at *J. Mol. Evol.*
- **Kovacs, N.A.**, Petrov, A.S., Lanier, K.A., and Williams, L.D. "Frozen in Time: The History of Proteins", *Mol. Biol. Evol.* 34 (2017) – **13 citations**
- 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 (2014) – **72 citations**

SELECT PRESENTATION FROM A TOTAL OF 7

- "Frozen in Time: The History of Proteins" an oral presentation at Search for Life: From Early Earth to Exoplanets - Quy Nhon, Vietnam Dec 2016  
<https://youtu.be/5p0opfZxpDQ>

## Skills & Interests

<b>Clubs</b>	GaTech PhD2Consulting Club, Bioengineering & Bioscience Unified Grad Students, Data Science for Scientists
<b>Computational Acumen</b>	Python, R, SQL, Bash, Perl, MATLAB, Javascript, Git, PySpark, Tableau, Adobe, Alteryx
<b>Computational Sciences</b>	Structural Bioinformatics, Next-Generation Sequencing, Molecular Dynamics, Drug Docking
<b>Data Science</b>	Machine Learning, Network Science, Statistics, Software Engineering
<b>Experimental Sciences</b>	Molecular Biology, Biochemistry, Organic Chemistry, Analytical Chemistry
<b>Personal Interests</b>	Bodyweight Fitness, Yoga, Nutrition, Snowboarding, Guitar, Bachata Dance, Korean Culture