

## Isaac T. Yonemoto

### Present Address

18590 Avon Lane  
Saratoga, CA 95070  
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### Education

- Ph.D, Chemistry, The Scripps Research Institute, San Diego, CA, May 2009  
Thesis Topic: Theory, methods, and investigations in amyloid dynamics  
Advisor: Professor William E. Balch  
Co-advisor: Professor Jeffery W. Kelly  
Area of Study: Biophysics and Chemical Biology
- B.A., Mathematics The University of Chicago, Chicago, IL, May 2003

### Research Positions

- **President and Research Lead** 2013-present  
indysci.org “Project Marilyn”  
Scaleup and production of a suite of open-source anticancer compounds  
<http://indysci.org/>  
<http://facebook.com/ProjectMarilyn>
- **Visiting Professor** 2016  
A\*STAR Research Institute, Singapore  
Prototyping Type-II “Unum” computational system in Julia and C  
<http://github.com/ityonemo/unum2-c>
- **Hardware Verification Engineer** 2016  
Rex Computing  
Unit testing and bug squashing on simulated computer chip
- **Research Contractor** 2015-present  
Rex Computing  
Development of a prototype “Unum” computational system in the Julia Programming Language  
<http://github.com/REX-Computing/unumjl>
- **Research Assistant** 2010-2013  
Synthetic Biology Lab, J. Craig Venter Institute  
PI: Hamilton O. Smith  
Reengineering *Alteromonas macleodii* hydrogenase for use in photosynthetic organisms. Development of techniques for prokaryotic genome manipulation.
- **Research Associate** 2009-2010  
Department of Biochemistry, University of Maryland  
PI: Barbara Gerratana  
Development and scaleup of a procedure to isolate a novel anticancer compound.
- **Research Associate** 2004-2009  
Departments of Chemistry and Cell Biology, TSRI  
PI: William E. Balch  
PI: Jeffery W. Kelly  
Development of methods to synthesize amyloid peptides and studies on biophysical properties of amyloid peptides.
- **Research Associate** 2004  
Departments of Cell Biology, TSRI

PI: Phillip E. Dawson  
Total Synthesis of Ubiquitin

• **Research Assistant**

Departments of Chemistry, University of Chicago

2004

PI: Milan Mrksich

Synthesis of alkanethiol monolayer compounds

**Refereed Journal  
Articles**

- Designed Surface Residue Substitutions in [NiFe] Hydrogenase that Improve Electron Transfer Characteristics. **IT Yonemoto**, HO Smith, PD Weyman *Int. J. of Molecular Sciences* 16 (1), 2020-2033
- A broad survey reveals substitution tolerance of residues ligating FeS clusters in [NiFe] hydrogenase. **IT Yonemoto**, BR Clarkson, HO Smith, PD Weyman *BMC Biochemistry* 15 (1), 10
- Dual organism design cycle reveals small subunit substitutions that improve [NiFe] hydrogenase hydrogen evolution. **IT Yonemoto**, CW Matteri, TA Nguyen, HO Smith, PD Weyman *J. Biol. Eng* 7 (17), 13
- Mutasynthesis of a Potent Anticancer Sibiromycin Analogue. **IT Yonemoto**, W Li, A Khullar, N Reixach, B Gerratana *ACS Chemical Biology* 7 (6), 973-977
- Cloning the *Acholeplasma laidlawii* PG-8A genome in *Saccharomyces cerevisiae* as a yeast centromeric plasmid. BJ Karas, C Tagwerker, **IT Yonemoto**, CA Hutchison III, HO Smith *ACS Synthetic Biology* 1 (1), 22-28
- Importance of single molecular determinants in the fidelity of expanded genetic codes. AK Antonczak, Z Simova, **IT Yonemoto**, M Bochtler, A Piasecka, Honorata Czapińska, Andrea Brancale, Eric M Tippmann *Proceedings of the National Academy of Sciences* 108 (4), 1320-1325
- The 8 and 5 kDa fragments of plasma gelsolin form amyloid fibrils by a nucleated polymerization mechanism, while the 68 kDa fragment is not amyloidogenic. JP Solomon, **IT Yonemoto**, AN Murray, JL Price, ET Powers, WE Balch, JW Kelly *Biochemistry* 48 (48), 11370-11380
- A general strategy for the bacterial expression of amyloidogenic peptides using BCLXL1/2 fusions. **IT Yonemoto**, MR Wood, WE Balch, JW Kelly. *Protein Science* 18 (9), 1978-1986
- Amylin Proprotein Processing Generates Progressively More Amyloidogenic Peptides that Initially Sample the Helical State. **IT Yonemoto**, GJA Kroon, HJ Dyson, WE Balch, JW Kelly. *Biochemistry* 47 (37), 9900-9910

**Refereed Journal  
Reviews**

- The juggernauts of biology. **IT Yonemoto**, EM Tippmann *Bioessays* 32 (4), 314-321

**Media**

- The Man on a Quest to Open-Source Cancer Research. Robert McMillan *Wired* 9/25/14  
<http://www.wired.com/2014/09/man-quest-open-source-cancer-research/>

**Computer  
Skills**

Languages: C(99), x86 assembly, Javascript, Ruby, Python, Mathematica, Julia