

Murat Acar

Professor
Department of Basic Medical Sciences
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EDUCATION

- Postdoc **California Institute of Technology, Pasadena, CA**
Center for Biological Circuit Design & Division of Biology (Nov. 2007 – Oct. 2011)
CBCD Fellow in Prof. Michael Elowitz's and Prof. Frances Arnold's Laboratories
- Ph.D. **Massachusetts Institute of Technology, Cambridge, MA**
Physics (June 2002 – June 2007)
Thesis Advisor: Prof. Alexander van Oudenaarden
- B.S. **Bogazici University, Istanbul, Turkey**
Physics (June 2000)

APPOINTMENTS

- 02/2023 – present **Professor, Koç University**
Department of Basic Medical Sciences
School of Medicine
- 07/2022–01/2023 **Research Professor, Koç University**
School of Medicine
- 11/2011–06/2022 **Faculty Member, Yale University**
Department of Molecular Cellular & Developmental Biology (primary appointment)
Promoted from Assistant Professor to Associate Professor (07/2017)
Department of Physics (01/2015–12/2020, secondary appointment)
Yale Systems Biology Institute
- 11/2007–10/2011 **Postdoctoral Scholar, California Institute of Technology**
Division of Biology and Center for Biological Circuit Design
- 06/2007–10/2007 **Research Assistant, Massachusetts Institute of Technology**
Physics Department
- 06/2002–05/2007 **Graduate Student, Massachusetts Institute of Technology**
Physics Department
- 08/2000–05/2002 **Graduate Student, University of Iowa**
Department of Physics and Astronomy

FELLOWSHIPS, DISTINCTIONS, and AWARDS

- 2014 NIH Director's New Innovator Award
- Yale Junior Faculty Fellowship (2014-2015 Academic Year)
- 2013 New Scholar in Aging Award, by the Ellison Medical Foundation
- CBCD Fellow, Center for Biological Circuit Design, Caltech (Nov. 2007 – Nov. 2011)
- BioX Senior Fellow, BioX Fellow Program, Stanford University (May 2007, declined)
- "Synthetic Biology 2.0" Conference Travel Grant (May 2006)
- MIT Presidential Fellowship, Praecis Pharmaceuticals Fellow (June 2002 – June 2003)

GRANT/FUNDING SUPPORT (COMPLETED)

- R01 Research Grant (PI: Acar)
National Institutes of Health, NIGMS
Project Title: Microfluidics-enabled quantitative systems biology approaches to construct gene networks regulating yeast lifespan and genetic noise dynamics during aging
06/01/2018 – 6/30/2022
\$1,492,216 in total costs, over 4 years; \$892,527 in direct costs, over 4 years
- U54 center grant to launch Cancer Systems Biology @ Yale (Co-investigator: Acar)
National Institutes of Health (National Cancer Institute)
Project Title: Systems analysis of phenotypic switch in control of cancer invasion
08/08/2016 – 07/31/2021
Yale Systems Biology Institute: \$9,500,000 in total costs, over 5 years
- 2014 NIH Director's New Innovator Award (PI: Acar)
National Institutes of Health
Project Title: Quantitative real-time characterization of single-cell aging: from phenotypes to lifespan
10/01/2014 – 05/31/2019
\$2,497,500 in total costs, over 5 years; \$1,500,000 in direct costs, over 5 years
- 2013 New Scholar in Aging Award (PI: Acar)
Ellison Medical Foundation
08/01/2013 – 09/30/2017
\$399,995 in total costs, over 4 years; \$371,883 in direct costs, over 4 years
- Microsoft Azure Research Award (PI: Acar)
Microsoft Corporation
02/15/2016 – 02/03/2017
\$20,000 direct-cost credit over 1 year for utilizing Microsoft Azure high-performance computing clusters
- Endowed Postdoctoral Fellowship Awards
Yale University
Three separate 1-year awards to use for Acar Lab postdocs
- AWS Cloud Credits for Research Program (PI: Acar)
Amazon Web Services (AWS), an Amazon Company
\$30,000 direct-cost AWS credits for utilizing AWS high-performance cloud-computing clusters
12/1/2016 – 11/30/2017
- Pilot Research Funding from Yale Systems Biology Institute (coPI: M. Acar; coPI: G. Wagner)
\$15,000 direct-cost funding to be used for a collaborative project between the Acar and Wagner laboratories.
06/01/2017 – 12/31/2017

PEER-REVIEWED PUBLICATIONS (* corresponding author)

1. E. Santiago, D.F. Moreno, and M. Acar*. "Phenotypic plasticity as a facilitator of microbial evolution". *Environmental Epigenetics* 8(1), 1-9 (2022)
2. D.F. Moreno and M. Acar*. "Phenotypic selection during laboratory evolution of yeast populations leads to a genome-wide sustainable chromatin compaction shift". *Frontiers in Microbiology* 13:974055 (2022)
3. E. Santiago, D.F. Moreno, and M. Acar*. "Modeling aging and its impact on cellular function and organismal behavior". *Experimental Gerontology* 155, 111577 (2021)
4. G. Urbonaite, J.T.H. Lee, P. Liu, G. Parada, M. Hemberg*, and M. Acar*. "A yeast-optimized single-cell transcriptomics platform elucidates how mycophenolic acid and guanine alter global mRNA levels". *Communications Biology* 4, 822 (2021)
5. D.F. Moreno and M. Acar*. "Chromatin regulatory genes differentially interact in networks to facilitate distinct *GAL1* activity and noise profiles". *Current Genetics* 67, 267-281 (2021)
6. X. Luo, R. Song, D.F. Moreno, H.-Y. Ryu, M. Hochstrasser, and M. Acar*. "Epigenetic mechanisms contribute to evolutionary adaptation of gene network activity under environmental selection". *Cell Reports* 33, 108306 (2020)
7. P. Liu, E.A. Sarnoski, T.T. Olmez, T.Z. Young, and M. Acar*. "Characterization of the impact of GMP/GDP synthesis inhibition on replicative lifespan extension in yeast". *Current Genetics* 66, 813-822 (2020)
8. T.Z. Young, P. Liu, G. Urbonaite, and M. Acar*. "Quantitative insights into age-associated DNA-repair inefficiency in single cells". *Cell Reports* 28, 2220-2230 (2019)
9. R. Song and M. Acar*. "Stochastic modeling of aging cells reveals how damage accumulation, repair, and cell-division asymmetry affect clonal senescence and population fitness". *BMC Bioinformatics* 20:391 (2019)
10. G.L. Elison, Y. Xue, R. Song, and M. Acar*. "Insights into bidirectional gene expression control using the canonical *GAL1/GAL10* promoter". *Cell Reports* 25, 1-12 (2018)
11. R. Song, E.A. Sarnoski, and M. Acar*. "The systems biology of single-cell aging". *iScience* 7, 154-169 (2018)
12. E.A. Sarnoski, R. Song, E. Ertekin, N. Kooence, and M. Acar*. "Fundamental characteristics of single-cell aging in diploid yeast". *iScience* 7, 96-109 (2018)
13. X. Luo, R. Song, and M. Acar*. "Multi-component gene network design as a survival strategy in diverse environments". *BMC Systems Biology* 12:85 (2018)
14. Y. Xue and M. Acar*. "Live-cell imaging of chromatin condensation dynamics by CRISPR". *iScience* 4, 216-235 (2018)
15. G.L. Elison and M. Acar*. "Scarless genome editing: progress towards understanding genotype-phenotype relationships". *Current Genetics* 64, 1229-1238 (2018)
16. Y. Xue and M. Acar*. "Mechanisms for the epigenetic inheritance of stress response in single cells". *Current Genetics* 64, 1221-1228 (2018)
17. M. Chatterjee and M. Acar*. "Heritable stress response dynamics revealed by single-cell genealogy". *Science Advances* 4, e1701775 (2018)
18. P. Liu and M. Acar*. "The generational scalability of single-cell replicative aging". *Science Advances* 4, eao4666 (2018)

19. E.A. Sarnoski, P. Liu, and M. Acar*. "A high-throughput screen for yeast replicative lifespan identifies lifespan-extending compounds". *Cell Reports* 21, 2639-2646 (2017)
20. P. Liu, R. Song, G.L. Elison, W. Peng, and M. Acar*. "Noise reduction as an emergent property of single-cell aging". *Nature Communications* 8:680 (2017)

Manuscripts in preparation, submission or review:

21. T.T. Olmez, D.F. Moreno, P. Liu, and M. Acar*. "Microfluidics-enabled high-precision measurement of yeast replicative lifespan uncovers novel lifespan outcomes and characterizes noise in single-cell lifespan". (*under revision after peer-review*)
22. D.F. Moreno, E. Santiago, T.T. Olmez, and M. Acar*. "IMD2 regulates yeast replicative lifespan in a dose-dependent manner". (*in preparation*)

Papers published before promotion to the Associate Professor position at Yale University:

23. G.L. Elison, R. Song, and M. Acar*. "A precise genome editing method reveals insights into the activity of eukaryotic promoters". *Cell Reports* 18, 275-286 (2017)
24. W. Peng, R. Song, and M. Acar*. "Noise reduction facilitated by dosage compensation in gene networks". *Nature Communications* 7:12959 (2016)
25. R. Song, W. Peng, P. Liu, and M. Acar*. "A cell size- and cell cycle-aware stochastic model for predicting time-dynamic gene network activity in individual cells". *BMC Systems Biology* 9:91 (2015)
26. P. Liu, T. Z. Young, and M. Acar*. "Yeast Replicator: a high-throughput multiplexed microfluidics platform for automated measurements of single-cell aging". *Cell Reports* 13, 634-644 (2015)
27. W. Peng, P. Liu, Y. Xue, and M. Acar*. "Evolution of gene network activity by tuning the strength of negative-feedback regulation". *Nature Communications* 6:6226 (2015)
28. R. Song, P. Liu, and M. Acar*. "Network-dosage compensation topologies as recurrent network motifs in natural gene networks". *BMC Systems Biology* 8:69 (2014)
29. M. Acar*, B. F. Pando, F. H. Arnold, M. B. Elowitz, and A. van Oudenaarden. "A general mechanism for network-dosage compensation in gene circuits". *Science* 329, 1656-1660 (2010)
30. M. Acar, J. Mettetal, and A. van Oudenaarden*. "Stochastic switching as a survival strategy in fluctuating environments". *Nature Genetics* 40, 471-475 (2008)
31. M. Acar, A. Becskei, and A. van Oudenaarden*. "Enhancement of cellular memory by reducing stochastic transitions". *Nature* 435, 228-232 (2005)
32. W.Y. Lu, M. Acar, and P.D. Kleiber*. "Photodissociation Spectroscopy of Al⁺-Acetaldehyde". *Journal of Chemical Physics* 116, 4847-4852 (2002)

PATENT APPLICATIONS

- **International non-provisional patent application filed by the Office of Cooperative Research at Yale**
Application Title: "Compositions and methods for scarless genome editing". Filed on Nov. 8th, 2017.
Inventors: Murat Acar, Gregory L. Elison.
- **International non-provisional patent application filed by the Office of Cooperative Research at Yale**
Application Title: "Compounds and compositions for extending lifespan of a subject, and methods of identifying same". Filed on June 18th, 2018. Inventors: Murat Acar, Ethan A. Sarnoski.

TEACHING ACTIVITIES at YALE

- **Spring 2020 MCDB 461:** Concepts and Applications in Systems Biology
- **Spring 2020 MCDB 903:** Advanced Graduate Seminar
- **Fall 2019 MCDB 902:** Advanced Graduate Seminar
- **Spring 2019 MCDB 461:** Concepts and Applications in Systems Biology
- **Spring 2019 MCDB 903:** Advanced Graduate Seminar
- **Fall 2018 MCDB 902:** Advanced Graduate Seminar
- **Spring 2017 MCDB 461:** Concepts and Applications in Systems Biology
- **Fall 2016 MCDB 202:** Genetics
- **Spring 2016 MCDB 461:** Concepts and Applications in Systems Biology
- **Spring 2014 MCDB 261:** Systems Modeling in Biology
- **Fall 2013 MCDB 202:** Genetics
- **Spring 2013 MCDB 361:** Systems Modeling in Biology
- **Fall 2012 MCDB 202:** Genetics

ADVISORSHIP, MENTORSHIP and TRAINING ACTIVITIES at YALE

Graduated PhD Students and Former Postdoc Members of the Acar Laboratory:

Meenakshi Chatterjee: Graduate Student, **received PhD in Electrical Engineering**
Acar lab membership period: June 2012 – April 2017

Ethan Sarnoski: Graduate Student, **received PhD in Molecular Cellular Developmental Biology**
Acar lab membership period: June 2014 – May 2018

Gregory Elison: Graduate Student, **received PhD in Molecular Cellular Developmental Biology**
Acar lab membership period: May 2014 – July 2018

Ruijie Song: Graduate Student, **received PhD in Comput. Biol. & Bioinformatics Grad. Program**
Acar lab membership period: June 2013 – December 2018

Thomas Young: Graduate Student, **received PhD in Molecular Cellular Developmental Biology**
Acar lab membership period: July 2013 – March 2019

Xinyue Luo: Graduate Student, **received PhD in Molecular Cellular Developmental Biology**
Acar lab membership period: May 2014 – August 2019

Guste Urbonaite: Graduate Student, **received PhD in Molecular Cellular Developmental Biology**
Acar lab membership period: May 2015 – December 2020

Weilin Peng: Postdoctoral Associate
Acar lab membership period: October 2012 – September 2016

Yuan Xue: Postdoctoral Associate and Associate Research Scientist
Acar lab membership period: May 2014 – April 2019

Ping Liu: Postdoctoral Associate and Associate Research Scientist
Acar lab membership period: October 2012 – January 2021

Tolga Tarkan Olmez: Postdoctoral Associate
Acar lab membership period: December 2017 – June 2022

David Moreno Fortuno: Postdoctoral Associate
Acar lab membership period: July 2019 – June 2022

Graduate Rotation Students Trained in the Acar Laboratory at Yale:

1. **Emerson Santiago:** 1st-year Graduate Student in BBS Program (2018-2019 Academic Year)
2. **Noelle Koonce:** 1st-year Graduate Student in BBS Program (2017-2018 Academic Year)
3. **Shuke Xiao:** 1st-year Graduate Student in BBS Program (2016-2017 Academic Year)
4. **Guste Urbonaite:** 1st-year Graduate Student in BBS Program (2015-2016 Academic Year)
5. **Koen Vanderschuren:** 1st-year Graduate Student in BBS Program (2014-2015 Academic Year)
6. **Victor Bass:** 1st-year Graduate Student in BBS Program (2014-2015 Academic Year)
7. **Mengting Gu:** 1st-year Graduate Student in BBS Program (2013-2014 Academic Year)
8. **Ethan Sarnoski:** 1st-year Graduate Student in BBS Program (2013-2014 Academic Year)
9. **Xinyue Luo:** 1st-year Graduate Student in BBS Program (2013-2014 Academic Year)
10. **Gregory Elison:** 1st-year Graduate Student in BBS Program (2013-2014 Academic Year)
11. **Nur-Taz Rahman:** 1nd-year Graduate Student in BBS Program (2012-2013 Academic Year)
12. **Mohammed Khan:** 1nd-year Graduate Student in BBS Program (2012-2013 Academic Year)
13. **Ruijie Song:** 1nd-year Graduate Student in BBS Program (2012-2013 Academic Year)
14. **Thomas Young:** 1nd-year Graduate Student in BBS Program (2012-2013 Academic Year)
15. **Cong Liang:** 1nd-year Graduate Student in BBS Program (2012-2013 Academic Year)
16. **Junyi Jiao:** 1nd-year Graduate Student in BBS Program (2012-2013 Academic Year)
17. **Namita Gupta:** 1nd-year Graduate Student in BBS Program (2011-2012 Academic Year)

Undergraduate Students Advised at Yale:

1. **Michael Ai,** Senior at Yale College (MCDB Department)
2. **Joshua Yue,** Junior at Yale College (MCDB Department)
3. **Grant Young,** Junior at Yale College (MCDB Department)
4. **Christopher Woodhead,** Junior at Yale College (MCDB Department)
5. **Amalia Ono,** Freshman at Yale College (Ezra Stiles College)
6. **Tyler Sady-Kennedy,** Freshman at Yale College (Ezra Stiles College)
7. **Colin Hill,** Freshman at Yale College (Ezra Stiles College)
8. **Ellis Burgoon Miskell,** Freshman at Yale College (Ezra Stiles College)
9. **Jessica Tordoff,** Senior at Yale College (MCDB Department, Computational Biology track)

Visiting Students Trained in the Acar Laboratory at Yale:

1. **Ahmet Hincer** (Summer 2019)
2. **Ege Ertekin** (Spring/Summer 2017)
3. **Onur Atan** (Summer 2012)
4. **Onur Sinan Koksaldi** (Summer 2012)
5. **Muhammed Omer Sayin** (Summer 2012)

UNIVERSITY SERVICE

Service at Yale for the MCDB and Physics Departments, and for Systems Biology Institute:

2019-2020 academic year:

1. Graduate Student Admissions Committee Member (BQBS Track of the BBS Program)

2018-2019 academic year:

1. MCDB IT and Computing Committee Member
2. Graduate Student Admissions Committee Member (BQBS Track of the BBS Program)
3. Moderator for one session of the Responsible Conduct of Research course (May 28, 2019)

2017-2018 academic year:

Associate Professor leave of absence.

2016-2017 academic year:

1. MCDB Faculty Search Committee Member for the Quantitative Biology Area Faculty Search
2. Committee Member on the MCDB Committee on Diversity and Professional Climate
3. Graduate Affairs Committee Member at the MCDB Department
4. Graduate Student Admissions Committee Member (MCGD Track of the BBS Program)
5. Advisory Committee Member of the Yale Systems Biology Institute
6. MCDB IT and Computing Committee Member

2015-2016 academic year:

1. MCDB Faculty Search Committee Member for the Broad Area Faculty Search
2. Faculty Search Committee Member for the joint search between the Systems Biology Institute and the Physics Department
3. Committee Member on the MCDB Committee on Diversity and Professional Climate
4. Committee Member on the Integrated Life Sciences Track Planning Committee
5. Graduate Affairs Committee Member at the MCDB Department
6. Advisory Committee Member of the Yale Systems Biology Institute

2014-2015 academic year (*on leave*):

1. Graduate Affairs Committee Member at the MCDB Department
2. Chair of the MCDB retreat organization committee for the retreat held in Woods Hole
3. Advisory Committee Member of the Yale Systems Biology Institute

2013-2014 academic year:

1. Faculty Search Committee Member for the joint search between the Systems Biology Institute and the Biomedical Engineering Department
2. Co-designer of the MCDB undergraduate track in Quantitative Biology
3. Faculty Representative at the 2013 Annual Biomedical Research Conference for Minority Students held in Nashville, TN.
4. Graduate Student Admissions Committee Member (MCGD Track of the BBS Program)
5. Search Committee Member for the search for a Manager for the West Campus Microscopy Core

2012-2013 academic year:

1. Graduate Student Admissions Committee Member (MCGD Track of the BBS Program)
2. Co-designer of the MCDB undergraduate track in Quantitative Biology

Service in Thesis or Qualifying Exam Committees at Yale:

1. **Jeremy Jacox:** Graduate Student, MD-PhD Program
(Qualifying Exam and Thesis Committee Member, Spring 2012 to Spring 2016)
2. **Victor Wong:** Graduate Student, MCDB Department
(Qualifying Exam and Thesis Committee Member, Spring 2012 to Spring 2016)
3. **Carina Gerveshi:** Graduate Student, Genetics Department
(Qualifying Exam Committee Member, Fall 2013)
4. **Mohammed Khan:** Graduate Student, MCDB Department
(Qualifying Exam and Thesis Committee Member, Summer 2014 to Spring 18)
5. **Victor Bass:** Graduate Student, MCDB Department
(Qualifying Exam and Thesis Committee Member, Fall 2015 to Fall 2020)
6. **Margaret Elise Bullock:** Graduate Student, Biomedical Engineering Department
(Thesis Committee Member, Fall 2018 to Spring 2022)

Service through Formal Programmatic Affiliations at Yale:

1. Faculty Member, Microbiology Track, BBS Graduate Program (since Sep. 2018)
2. Faculty Member, BQBS Track, BBS Graduate Program (since Sep. 2017)
3. Center Faculty, Yale Center for Research on Aging (Sep. 2016 – Dec. 2021)
4. Core Program Faculty, Comp. Biol. & Bioinformatics Track, BBS Grad. Program (Sep. 2014 – Sep. 2018)
5. Core Faculty Member, Yale Systems Biology Institute (since Jan. 2012)
6. Faculty Member, Integrated Graduate Program on Physical and Engineering Biology (since Jan. 2012)
7. Faculty Member, BBSB Track, BBS Graduate Program (Jan. 2012 – Sep. 2014)
8. Faculty Member, MCGD Track, BBS Graduate Program (since Jan. 2012)

Service Experience as a Physics Graduate Student at MIT:

1. Committee Member on MIT Institute Committee on Undergraduate Admissions and Financial Aid (09/05-05/07).
2. Committee Member on the MIT Institute Committee on Graduate School Programs (09/04-07/06).
3. Founding Member of the MIT Physics REFS Program in Conflict Mediation (01/06-10/07).
4. Vice President of the MIT Turkish Students Association (03/06-03/07).
5. Graduate Student Representative for the Biophysics Division at the MIT Department of Physics (09/04-09/06).
6. Co-organizer of the Graduate Student Seminar Series at the MIT Department of Physics (02/04-06/04).
7. Physics Department Representative at the MIT Graduate Students Council (03/03-10/03).
8. President and Founding Member of the MIT Physics Graduate Student Council (07/03-08/04).

EXTERNAL PROFESSIONAL SERVICE ACTIVITIES

- **Manuscript reviewer for the following journals:**
Science, Nature Communications, Cell Reports, iScience, PNAS, Molecular Systems Biology, ACS Synthetic Biology, PLOS Computational Biology, Biophysical Journal, Journal of Statistical Physics, Scientific Reports.
- **Grant reviewer:**
 - Panelist at the NSF/NIH joint review panel for the DMS/NIGMS initiative to support research at the interface of the biological and mathematical sciences. Winter 2019.
 - External Reviewer for a grant proposal submitted to the Netherlands Organisation for Scientific Research (NWO, the Dutch Research Council). 2019.
 - External Reviewer for a grant proposal submitted to the U.S.-Israel Binational Science Foundation (BSF). 2020.
 - Panelist at the 2020 DOE-BER Secure Biosystems Design SFA Review Panel. Biological and Environmental Research Program (BER), Office of Science, U.S. Department of Energy. Summer 2020.
- **Scientific committee member:**
4th International Congress on Biomaterials and Biosensors.
May 12-18, 2019, Oludeniz, Turkey
- **Session chair:**
The Fifth Annual Northeastern Glenn Symposium on the Biology of Aging.
November 6, 2019. University of Connecticut Health Center, Farmington, CT.
- **Division evaluation committee member, for tenure evaluation of a junior faculty:**
Yale-NUS College, Summer and Fall 2019.
The committee is tasked with reviewing the promotion dossier of a Junior Faculty, suggesting names of external reviewers, and preparing a report for the Dean of Faculty and the Appointments Committee for the consideration of the case.
- **Editorial Board Member:**
Editorial Board Member at the Cell-Press journal *iScience*. Serving term started in January 2020.
- **Organizing Committee member for U.S. NASEM-administered workshop:**
The U.S. National Academies of Sciences, Engineering, and Medicine (NASEM). Organizing committee member for the workshop, “Integrating the Science of Aging and Environmental Health Research”, was held virtually in Washington, D.C. on June 9-10, 2020.

CONFERENCE AND SEMINAR TALKS

1. Virtual seminar at the Molecular Biology, Genetics and Bioengineering Program, **Sabanci University**, April **2022**, Istanbul, Turkey.
2. Invited virtual talk at the **Gordon Research Conference** on Stochastic Physics in Biology, October **2021**, Ventura, CA.
3. Virtual seminar at the **Acibadem University**, August **2021**, Istanbul, Turkey.

4. Invited virtual talk at the **Bilkent University Synthetic Biology Day '21 Conference**, April **2021**, Ankara, Turkey.
5. Virtual seminar at the Department of Molecular Biology and Genetics, **Bilkent University**, April **2021**, Ankara, Turkey.
6. Virtual seminar at the Department of Molecular Biology and Genetics, **Koc University**, April **2021**, Istanbul, Turkey.
7. Virtual seminar at the **John B. Pierce Laboratory**, November **2020**, New Haven, CT.
8. Virtual seminar at the **Chan Zuckerberg Biohub**, September **2020**, San Francisco, CA.
9. U.S. **National Academies of Sciences Engineering and Medicine** virtual workshop, June 9, **2020**.
10. **23rd Evolutionary Biology Meeting at Marseilles**, September **2019**, Marseille, France.
11. Systems Biology of Aging Meeting, **the Jackson Laboratory**, September **2019**, Farmington, CT.
12. Systems Biology Institute and CaSB@Yale Symposium, **Yale Univ.**, June **2019**, West Haven, CT.
13. **4th International Congress on Biomaterials and Biosensors**, May **2019**, Oludeniz, Turkey.
14. Institut National de la Recherche Scientifique (**INRS**), April **2019**, Québec, Canada.
15. Computational Systems Biology Seminar Series, **University of Cincinnati**, April **2019**, Cincinnati, OH.
16. Department of Physics, **Bogazici University**, December **2018**, Istanbul, Turkey.
17. Systems Biology Institute and CaSB@Yale Symposium, **Yale Univ.**, May **2018**, West Haven, CT.
18. Center for Computational Biology, **UC Berkeley**, May **2018**, Berkeley, CA.
19. Department of Biological Sciences, **Columbia University**, April **2018**, New York, NY.
20. School of Medicine, **Koc University**, December **2017**, Istanbul, Turkey.
21. Department of Chemistry, **SUNY Albany**, October **2016**, Albany, NY.
22. Laufer Center for Physical and Quantitative Biology, **Stony Brook University**, April **2016**, Stony Brook, NY.
23. Mechanical Engineering Department, **Bilkent University**, December **2015**, Ankara, Turkey.
24. Computational Biology Seminar Series, **Duke University**, November **2015**, Durham, NC.
25. **Second Annual Turkish Medical World Conference**, October **2015**, Istanbul, Turkey.
26. Division of Aging Biology, **National Institute on Aging**, June **2015**, Bethesda, MD.
27. Icahn School of Medicine at **Mount Sinai**, May **2015**, New York, NY.
28. **Yale Systems Biology Institute Retreat**, August **2013**, Mystic, CT.
29. Sackler Discussion Group, **Yale University**, April **2013**, New Haven, CT.
30. Department of Physics, **Yale University**, March **2013**, New Haven, CT.
31. Department of Physics, **Yale University**, January **2012**, New Haven, CT.
32. Systems Biology Symposium, **Yale University**, September **2011**, West Haven, CT.
33. Department of Bioengineering, **UC Berkeley**, April **2011**, Berkeley, CA.
34. Department of Molecular, Cellular, and Developmental Biology, **Yale University**, March **2011**, New Haven, CT.
35. Division of Biological Sciences, **UC San Diego**, February **2011**, La Jolla, CA.
36. Department of Physics, **Cornell University**, February **2011**, Ithaca, NY.
37. Department of Physics, **University of Illinois at Urbana-Champaign**, February **2011**, Urbana, IL.
38. Department of Physics, **University of Pennsylvania**, January **2011**, Philadelphia, PA.
39. Department of Ecology and Evolution, **University of Chicago**, January **2011**, Chicago, IL.
40. Division of Physics, **Caltech**, April **2009**, Pasadena, CA.

41. Department of Electrical Engineering, **Columbia University**, March **2009**, New York, NY.
42. Department of Systems Biology, **Harvard University**, July **2008**, Cambridge, MA.
43. Bio-X Fellows Program, **Stanford University**, February **2007**, Stanford, CA.
44. Center for Biological Circuit Design, **Caltech**, February **2007**, Pasadena, CA.
45. Rowland Junior Fellows Program, **Rowland Institute, Harvard University**, February **2007**, Boston, MA.
46. Department of Molecular Biology and Genetics, **Bilkent University**, August **2006**, Ankara, Turkey.
47. Department of Chemistry, **Middle East Technical University**, August **2006**, Ankara, Turkey.
48. Department of Physics, **MIT**, May **2006**, Boston, MA.
49. Bauer Center Seminars, **Harvard University**, April **2006**, Boston, MA.
50. March Meeting, **American Physical Society**, March **2006**, Baltimore, MD.
51. 6th International Conference on Systems Biology, **Harvard University**, October **2005**, Boston, MA.

POSTER PRESENTATIONS

1. **Center for Biological Circuit Design Poster Session**, January 2009, Pasadena, CA.
2. **Synthetic Biology 2.0 Conference, University of California-Berkeley**, May 2006, Berkeley, CA.
3. **Physics Department Annual Poster Session, MIT**, March 2006, Boston, MA.
4. **6th International Conference on Systems Biology, Harvard University**, Oct. 2005, Boston, MA.