Arthur Prindle

University of California, San Diego
2224A Pacific Hall, 9500 Gilman Drive, La Jolla, CA 92093-0347
Office: (858) 534-0039 / Cell: (650) 796-1998
abprindle@gmail.com ; http://abprindle.ucsd.edu

Education

9/2009 – 4/2014   Ph.D., Bioengineering, University of California, San Diego, CA
9/2005 – 6/2009   B.S., Chemical Engineering, *with honors*, California Institute of Technology, Pasadena, CA

Research Positions & Training

9/2014 – current   Postdoctoral Fellow, University of California, San Diego
Advisor: Prof. Gürol Süel (Molecular Biology)
Topic: The Bacterial Brain: Electrical principles of collective organization

9/2009 – 4/2014   Graduate Student, University of California, San Diego
Advisor: Prof. Jeff Hasty (Bioengineering)
Thesis: Designer gene circuits for basic science, engineering and medicine

6/2008 – 6/2009   Undergraduate Student, California Institute of Technology
Advisor: Prof. Richard Murray (Bioengineering)
Thesis: Optimization of a gene oscillator using transcriptional time delay

Publications

15. Liu J, Martinez-Corral R, **Prindle A**, Gabalda-Sagarra M, Garcia-Ojalvo J, Süel G. Coupling between distant biofilms and emergence of nutrient time-sharing. *Science* (in revision).

14. Humphries, J, Xiong L, Liu J, **Prindle A**, Yuan F, Arjes HA, Tsimring L, Süel G. Species-independent attraction to biofilms through electrical signals. *Cell* (2017).
   • Commentary: Huang KC. Staying in touch while on the go. *Cell* (2017).

13. Din MO, Danino T, **Prindle A**, Skalak M, Selimkhanov J, Allen K, Julio E, Atolia E, Tsimring L, Bhatia SN, Hasty J. Synchronized cycles of bacterial lysis for in vivo delivery. *Nature* (2016).
   • Commentary: Zhou S. Bacteria synchronized for drug delivery. *Nature* (2016).

12. **Prindle A**, Liu J, Asally M, Ly S, Garcia-Ojalvo J, Süel G. Ion channels enable electrical communication in bacterial communities. *Nature* (2015).
   • Commentary: Beagle SD, Lockless SW. Electrical signalling goes bacterial. *Nature* (2015).
   • Commentary: Nunes-Alves C. Electrifying long-range signalling. *Nature Reviews Microbiology* (2015).
   • Commentary: Chang S. An eye on bacterial communication. *Physics Today* (2015).

11. Liu J, **Prindle A**, Humphries J, Gabalda-Sagarra M, Asally M, Lee D, Ly S, Garcia-Ojalvo J, Süel G. Metabolic co-dependence gives rise to collective oscillations within biofilms. *Nature* (2015).
   • Commentary: Tan J. Rhythm of prosperity. *Cell* (2015).
   • Commentary: Attar N. Oscillations relieve the siege. *Nature Reviews Microbiology* (2015).

10. Danino T, **Prindle A**, Kwong G, Skalak M, Li H, Allen K, Hasty J, Bhatia SN. Programmable probiotics for detection of cancer in urine. *Science Translational Medicine* (2015).
   • Commentary: Ray K. Programmed probiotics light up liver cancer in urine. *Nature Reviews Gastroenterology & Hepatology* (2015).
   • Recommended by F1000

9. **Prindle A**, Selimkhanov J, Li H, Razinkov I, Tsimring L, Hasty J. Rapid and tunable post-translational coupling of genetic circuits. *Nature* (2014).
- Commentary: Solé R, Macía J. Biocircuits in synchrony. *Nature* (2014).
- Commentary: Burgess DJ. Cut up to bring together. *Nature Reviews Genetics* (2014).

8. Danino T, **Prindle A**, Hasty J, Bhatia SN. Measuring growth and gene expression dynamics of tumor-targeted S. typhimurium bacteria. *JoVE* (2013).

7. **Prindle A**. Synthetic biology at all scales. *Trends in Biotechnology* (2013).

6. **Prindle A**, Stanton B. The First Annual Winter q-bio Meeting: Quantitative biology on the Hawaiian Islands. *ACS Synthetic Biology* (2013).

5. **Prindle A**, Hasty J. Making gene circuits sing. *PNAS* (2012).

4. **Prindle A**, Selimkhanov J, Danino T, Samayoa P, Goldberg A, Bhatia SN, Hasty J. Genetic circuits in Salmonella typhimurium. *ACS Synthetic Biology* (2012).

3. Danino T, Lo J, **Prindle A**, Hasty J, Bhatia SN. In vivo gene expression dynamics of tumor-targeted bacteria. *ACS Synthetic Biology* (2012).

2. **Prindle A**, Samayoa P, Razinkov I, Danino T, Tsimring L, Hasty J. A sensing array of radically coupled genetic 'biopixels'. *Nature* (2012).
- Commentary: Voigt CA. Bacteria collaborate to sense arsenic. *Nature* (2012).
- Recommended by F1000

1. **Prindle A**, Hasty J. Stochastic emergence of groupthink. *Science* (2010).

Awards

2016 – 2021	CASI Fellow, Burroughs Wellcome Fund
2015	Aspen Center for Physics Travel Award
2014 – 2017	Simons Foundation Fellow, Helen Hay Whitney Foundation
2014	Damon Runyon Postdoctoral Fellowship (declined)
2014	Best Graduate Research Talk, UCSD Bioengineering Day
2013	SB6.0 Young Researcher Travel Award
2012	Dynamics Days 2012 Travel Award
2011	SB5.0 Young Researcher Travel Award
2010 – 2013	NDSEG Graduate Research Fellowship
2010	Finalist, DOE OSGF Graduate Research Fellowship
2009	Amgen Scholar, Amgen, Inc.
2008	Ernest R. Roberts SURF Fellowship, California Institute of Technology

Talks & Seminars

01/2016	UC Irvine, Biomedical Engineering Dept, Irvine, CA
01/2016	Populations, Evolution & Physics, Aspen Center for Physics, CO
11/2015	Fall Workshop on Biological Timing, Center for Circadian Biology, La Jolla, CA
10/2015	Quarterly Systems-to-Synthesis Meeting, San Diego Center for Systems Biology, La Jolla, CA
09/2015	UCSD-Salk Biology Fall Retreat, Lake Arrowhead, CA
07/2014	Synthetic Biology: Engineering, Evolution & Design, Manhattan Beach, CA
05/2014	UCSD Industrial Advisory Board Meeting, La Jolla, CA
04/2014	UCSD Bioengineering Day, La Jolla, CA
02/2014	The Second Annual Winter q-bio Meeting, Waikoloa Village, HI
07/2013	SB6.0: The Sixth International Meeting on Synthetic Biology, London, UK
02/2013	The First Annual Winter q-bio Meeting, Waikiki, HI
11/2012	Fall Workshop on Biological Timing, Center for Circadian Biology, La Jolla, CA
04/2012	UCSD Jacobs Research Expo, La Jolla, CA

01/2012   Dynamics Days 2012, Baltimore, MD
06/2011   SB5.0: The Fifth International Meeting on Synthetic Biology, Stanford, CA
04/2011   UCSD Jacobs Research Expo, La Jolla, CA

Teaching Experience

SP 2011   Biotechnology Laboratory (teaching assistant, BENG162, UCSD)
WI 2011   Biosystems and Control (teaching assistant, BENG122, UCSD)
SP 2010   Modeling and Computation in Bioengineering (teaching assistant, BENG125, UCSD)