

Associate Professor and Chair of Computer Science  
 Colby College  
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 srtaylor@colby.edu  
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## Education

2008	Ph.D.	U.C. Santa Barbara	Computer Science Emphasis in Computational Science and Engineering Advisor: Linda R. Petzold, Dept. of C.S. Co-Advisor: Francis J. Doyle III, Dept. of Chem. Engr.
1998	B. S.	Gordon College	Mathematics and Computer Science (double major) <i>Summa Cum Laude</i>

## Appointments

2020-	Chair	Computer Science	Colby College
2018-2019	Associate Chair	Computer Science	Colby College
2016-	Associate Professor	Computer Science	Colby College
2008-2016	Clare Boothe Luce Asst. Prof.	Computer Science	Colby College
2005-2006	Adjunct Instructor	Computer Science	Westmont College
2003-2008	NSF IGERT Fellow	Systems Biology	U.C. Santa Barbara
1998-2003	Software Engineer	Research & Development	JEOL, U.S.A.
1996-1998	Paid Student Intern	Research & Development	JEOL, U.S.A.

## Publications (undergraduate co-authors in bold)

### Peer-Reviewed Journal Articles

1. SSL Don, JA Mas-Rosario, H-H Lin, MN Nguyen, SR Taylor\*, ME Farkas\*, Macrophage Circadian Rhythms are Differentially Affected Based on Stimuli, submitted. (\* indicates senior authorship)
2. H-H Lin, SR Taylor\*, ME Farkas\*, Circadian Alterations Increase with Progression in a Patient-Derived Cell Culture Model of Breast Cancer, *Clocks & Sleep*, 2021. (\* indicates senior authorship)
3. SR Taylor, Delays are Self-Enhancing: An Explanation of the East-West Asymmetry in Recovery from Jetlag, *J. Biol. Rhythm.*, 2021.
4. SSL Don, KL Robertson, H-H Lin, C Labriola, ME Harrington\*, SR Taylor\*, ME Farkas\*, Nobiletin Affects Circadian Rhythms and Oncogenic Characteristics in a Cell-Dependent Manner, *PLoS ONE*, 2020. (\* indicates senior authorship)
5. SSL Don, H-H Lin, JJ Furtado, **M Qraitem**, SR Taylor\*, ME Farkas\*, Circadian Oscillations Persist in Low Malignancy Breast Cancer Cells, *Cell Cycle*, 2019. (\* indicates senior authorship)

6. H-H Lin, **M Qraitem**, **Y Lian**, SR Taylor\*, ME Farkas\*, Analyses of Bmal1 and Per2 Oscillations in a Model of Breast Cancer Progression Reveal Changes with Malignancy, *Integrative Cancer Therapies*, 18, 2019. (\* indicates senior authorship)
7. SR Taylor, TJ Wang, D Granado-Fuentes, ED Herzog, Resynchronization dynamics reveal that the ventral entrains the dorsal suprachiasmatic nucleus, *J. Biol. Rhythm.*, 32:35-47. 2017.
8. NJ Kingsbury, SR Taylor, MA Henson, Inhibitory and excitatory networks balance cell coupling in the suprachiasmatic nucleus: a modeling approach, *J. Theor. Biol.*, 397:136-144, 2016.
9. PC St John, SR Taylor, JH Abel, FJ Doyle III, Amplitude metrics for cellular circadian bioluminescence reporters, *Biophys. J.*, 107:2712-2722, 2014.
10. SR Taylor, **A Cheever**, **SM Harmon**, Velocity response curves demonstrate the complexity of modeling entrainable clocks, *J. Theor. Biol.*, 363:307-317, 2014.
11. AB Webb\*, SR Taylor\*, KA Thoroughman, FJ Doyle III, ED Herzog, Weakly Circadian Cells Improve Resynchrony, *PLoS Comput. Biol.*, 8:e1002787, 2012 (\*Equal contribution)
12. H Mirsky, SR Taylor, RA Harvey, J Stelling, FJ Doyle III, Distribution-Based Sensitivity Metric for Highly-Variable Biochemical Systems, *IET Syst. Biol.*, 5:50-57, 2011
13. SR Taylor, AB Webb, **K Smith**, LR Petzold, FJ Doyle III, Velocity Response Curves Support the Role of Continuous Entrainment in Circadian Clocks, *J. Biol. Rhythm.*, 25:138-49, 2010
14. SR Taylor, FJ Doyle III, LR Petzold, Oscillator Model Reduction Preserving the Phase Response: Application to the Circadian Clock, *Biophys. J.*, 95:1658-1673, 2008
15. N Bagheri\*, SR Taylor\*, K Meeker, LR Petzold, FJ Doyle III. Synchrony and Entrainment Properties of Robust Circadian Oscillators, *J. R. Soc. Interface*, 5:S17-28, 2008 (\*Equal contribution)
16. SR Taylor, R Gunawan, LR Petzold, and FJ Doyle III. Sensitivity Measures for Oscillating Systems: Application to Mammalian Circadian Gene Network, *IEEE Trans. Automat. Contr.*, 153:177-188, 2008
17. MN Zeilinger\*, EM Farre\*, SR Taylor, SA Kay, and FJ Doyle III. A novel computational model of the circadian clock in *Arabidopsis* that incorporates PRR7 and PRR9. *Mol. Syst. Biol.* 2:58, 2006 (\* Equal contribution)

### Invited Publications

1. H-H Lin, KL Robertson, SSL Don, SR Taylor\*, ME Farkas\*, Chemical Modulation of Circadian Rhythms and Assessment of Cellular Behavior via Indirubin and Derivatives, *Methods in Enzymology*, 639:115-140, 2020. (\* indicates senior authorship)
2. SR Taylor, How to Get Oscillators in a Multicellular Clock to Agree on the Right Period, *Biophys. J.*, 106:1839-40, 2014.
3. H Mirsky, J Stelling, R Gunawan, N Bagheri, SR Taylor, E Kwei, JE Shoemaker, FJ Doyle III. "Automatic Control in Systems Biology" in *Handbook of Automation*, ed. SY Nof, Springer-Verlag, Berlin Heidelberg 2009
4. JE Shoemaker, PS Chang, EC Kwei, SR Taylor, and FJ Doyle III. "Robustness and Sensitivity Analysis in Cellular Networks" in *Control Theory and Systems Biology*, eds. B Ingalls and P Iglesias, MIT Press, 2009

5. SP Hildebrandt, N Bagheri, R Gunawan, HP Mirsky, J Shoemaker, SR Taylor, LR Petzold, and FJ Doyle III. "Systems Analysis of Biological Networks" in *Systems Biomedicine: Concepts and Perspectives*, eds. ET Liu, GP Nolan, DA Lauffenburger, Academic Press, 2009

### Refereed Conference Publications

1. SR Taylor, U Wolz, Towards a More Inclusive Tech Culture: Promoting Professionalism in CS Classrooms and Labs, SIGCSE 2019 (ACM Special Interest Group on Computer Science Education), Minneapolis, MN Feb 2019 (Birds of a Feather session).
2. P Barry, M Minnes, SR Taylor, Assessing writing in CS: A hands-on workshop, SIGCSE 2019 (ACM Special Interest Group on Computer Science Education), Minneapolis, MN Feb 2019 (Workshop).
3. M Minnes, BA Maxwell, SR Taylor, P Barry, Writing in CS: Why and How?. SIGCSE 2018 (ACM Special Interest Group on Computer Science Education), Baltimore, MD Feb 2018 (Panel session).
4. BA Maxwell & SR Taylor, Comparing Outcomes Across Different Contexts in CS1. SIGCSE 2017 (ACM Special Interest Group on Computer Science Education), Seattle, WA Mar 2017 (acceptance rate 30%).
5. SR Taylor\*, N Bagheri\*, K Meeker, LR Petzold, FJ Doyle III. Robust Timekeeping in Circadian Networks: From Genes to Cells. FOSBE 2007 (Foundations of Systems Biology in Engineering), Stuttgart, Germany, Sep 2007 (\*Equal contribution)
6. N Bagheri, SR Taylor, FJ Doyle III, and J Stelling, A Finite Differences Approach to Phase-Based Sensitivity Analysis of Biological Oscillators, FOSBE 2005 (Foundations of Systems Biology in Engineering), U.C. Santa Barbara, Santa Barbara, CA, Aug 2005

### Posters and Abstracts

1. SR Taylor, Y Shan, Y Li, M Izumo, JS Takahashi, JH Abel, A Mechanistic Model Reconciling AVP and VIP Neurotransmission, 2020 Meeting of the Society for Research on Biological Rhythms, virtual, June 2020
2. SR Taylor, H-H Lin, ME Farkas, Quantifying circadian characteristics of human breast cancer cells, 2018 Meeting of the Society for Research on Biological Rhythms, Amelia Island, FL, May 2018
3. NJ Kingsbury, SR Taylor, and MA Henson, The Differential Roles of GABA and VIP in Synchronization and Entrainment of the Suprachiasmatic Nucleus: A Mathematical Modeling Study, AICHe Annual Meeting, Atlanta, GA, Nov 2014
4. SR Taylor, Understanding the network of oscillators in the mammalian circadian clock, 2014 SIAM Annual Meeting, Chicago, IL, Jul 2014 (**oral presentation**)
5. SR Taylor, **D Cormack**, T Wang, SCN network inference, 2014 Meeting of the Society for Research on Biological Rhythms, Big Sky, MT, Jun 2014
6. SR Taylor, **Z Cecere**, **R Gheorghe**, Mathematical modeling of synchronization in the SCN, Gordon Research Conference on Chronobiology, Newport, RI, Jul 2013
7. **Z Cecere** and SR Taylor, Slow and Steady: Increasing oscillation amplitude in rhythmic cells decreases their sensitivity, Maine Biological and Medical Science Symposium, Salisbury Cove, ME, Mar 2013

8. SR Taylor, AB Webb, **D Quigley**, Linking phase and amplitude dynamics in an SCN network model allows heterogeneous neurons to period-synchronize with realistic phase differences, 2012 Meeting of the Society for Research on Biological Rhythms, Sandestin, FL, May 2012
9. SR Taylor, AB Webb, Modeling Circadian Entrainment and Synchronization, Workshop on Robustness in Biological Systems, Mathematical Biosciences Institute at OSU, Columbus, OH, Feb 2012
10. SR Taylor, Modeling Entrainment and Synchronization, Gordon Research Conference on Chronobiology, Lucca, Italy, Jun 2011
11. SR Taylor, AB Webb, R Harang, Tracking Phase in a Network of Heterogeneous SCN Cells, Third World Congress of Chronobiology, Puebla, Mexico, May 2011 (**oral presentation**)
12. **SM Harmon, AM Cheever**, SR Taylor, Velocity response curve analysis of *Drosophila melanogaster* circadian clock models, Maine Biological and Medical Science Symposium, Salisbury Cove, ME, Apr 2011
13. AB Webb, SR Taylor, LR Petzold, FJ Doyle III, and ED Herzog. Origins and consequences of heterogeneous neurons in a molecular oscillator model of the mammalian circadian clock, International Workshop on Timing and Dynamics in Biological Systems, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, Sep 2010
14. H Mirsky, SR Taylor, J Stelling, and FJ Doyle III. A Distribution-Based Sensitivity Analysis Metric for Highly Variable Biochemical Systems, ICSB 2009 (The Tenth International Conference on Systems Biology), Stanford, CA, Aug 2009
15. SR Taylor, AB Webb, FJ Doyle III, and LR Petzold. Velocity Response Curves Support the Theory of Continuous Circadian Entrainment, Foundations of Systems Biology in Engineering 2009, Denver, CO, Aug 2009
16. SR Taylor, FJ Doyle III, and LR Petzold. Phase Response-Based Model Reduction Improves Analysis of Clock Models, Society for Research on Biological Rhythms 11th Biennial Meeting, Sandestin, FL, May 2008
17. PS Chang, SR Taylor, S An, ED Herzog, LR Petzold, and FJ Doyle III, Phase Dependent Gating of the Vasoactive Intestinal Polypeptide Signaling Pathway in the Suprachiasmatic Nucleus, ICSB 2007 (The Eighth International Conference on Systems Biology), Long Beach, CA, Oct 2007
18. SR Taylor, R Gunawan, F J Doyle III, and LR Petzold. Analyzing Phase Dynamics of Limit Cycle Systems with Application to the Circadian Clock, Meeting of the National Centers of Integrative and Systems Biology 2007, Boston/Cambridge, MA, Jun 2007
19. SR Taylor, R Gunawan, FJ Doyle III, and LR Petzold. Analyzing Phase Dynamics of Limit Cycle Systems with Application to the Circadian Clock, Stanford 50: State of the Art and Future Directions of Computational Mathematics and Numerical Computing, Palo Alto, CA, Mar 2007
20. SR Taylor, R Gunawan, FJ Doyle III, and LR Petzold. Phase Sensitivity Analysis of Circadian Clocks, SIAM Conference on Computational Science and Engineering 2007, Costa Mesa, CA, Feb 2007 (**oral presentation**)
21. HP Mirsky, R Gunawan, SR Taylor, and FJ Doyle III, Sensitivity Analysis of Mammalian Circadian Clocks, AIChE Annual Meeting, San Fransisco, CA, Nov 2006

22. SR Taylor, FJ Doyle III, and LR Petzold, Analyzing the Phase Behavior of the Circadian Clock in *Arabidopsis thaliana*, The First Annual Graduate Student Conference, Dept of CS, U.C. Santa Barbara, Oct 2006 (**oral presentation**)
23. SR Taylor, FJ Doyle III, and LR Petzold, Sensitivity Analysis in Systems Biology, 2006 IGERT Project Meeting, Arlington, VA, May 2006
24. SR Taylor, N Bagheri, R Gunawan, and F J Doyle III, Capturing Phase Dynamics of Circadian Clocks, 2006 ICB Army-Industry Collaboration Conference, U.C. Santa Barbara, Santa Barbara, CA, May 2006
25. R Gunawan, SR Taylor, and FJ Doyle III, Sensitivity Analysis in Biological Modeling: an Application in the Model Development of Staphylococcal Enterotoxin B Pre-Apoptotic Pathways, AIChE Annual Meeting, Cincinnati, OH, Nov 2005
26. SR Taylor, R Gunawan, and FJ Doyle III, BioSens : Sensitivity Analysis Toolkit for Bio-SPICE, 2005 ICB Army-Industry Collaboration Conference, U.C. Santa Barbara, Santa Barbara, CA, Apr 2005

### External Grants Received

Year	PIs	Title	Agency	Budget
2011–2015	Frank Doyle Erik Herzog Mike Henson Linda Petzold Stephanie Taylor	<i>Mechanisms and Modeling of Networked Circadian Pacemaker Synchronization</i>	NIH NIGMS	\$953,370
2016–2020	Erik Herzog Mike Henson Ioannis Kevrekidis Stephanie Taylor (third party code evaluator)	<i>Multiscale Modeling of the Mammalian Circadian Clock: The Role of GABA Signaling</i>	NIH NIGMS	\$1,809,385
2019–2022	Kristina Striegnitz Bruce Maxwell Valerie Barr Nick Webb Ying Li Stephanie Taylor (co-PI)	CUE Ethics: Collaborative Research: Evaluating Frameworks for Incorporating Computing Across the Curriculum	NSF IUSE	\$76,338.00

**Unfunded External Grants**

Submitted	PIs	Title	Agency	Budget
Oct 2019	Michelle Farkas Stephanie Taylor	<i>Chemical Modulation of Circadian Rhythms for Cancer Study and Treatment</i>	American Cancer Society	\$55,000 to Colby
Feb 2019	Eva Farré Stephanie Taylor	<i>The circadian clock in the stramenopile <i>Nannochloropsis salina</i></i>	NSF	\$41,000 to Colby
Oct 2017	Michelle Farkas Stephanie Taylor	<i>Chemical Modulation of Circadian Rhythms for the Study and Treatment of Cancer</i>	NIH NCI	\$156,000 to Colby

**Mathematical Software**

Title	Authors	Description	My Responsibilities
DASPKAdjoint	Shengtai Li Linda R. Petzold	Sensitivity analysis solver for differential algebraic equation (DAE) systems using the adjoint method	Provided user access to adjoint variable, added support for building on Cygwin, added example programs. Years involved: 2006–2007
BioSens	Stephanie R. Taylor Rudiyanto Gunawan Kapil Gadkar Francis J. Doyle III	A general purpose sensitivity analysis toolkit with a Matlab graphical user interface with DASPK as the sensitivity analysis computational engine	Chief architect and developer. Years involved: 2005–2008

**Awards**

Year	Award
2008 – 2016	Clare Boothe Luce Program of the Henry Luce Foundation, Colby College
2003 – 2008	Integrative Graduate Education and Research Traineeship Fellowship, UCSB
2006	Second Place Poster, Institute for Collaborative Biotechnologies Army-Industry Collaboration Conference
1998	Inducted into Phi Alpha Chi (Gordon College's honor society)
1997 – 1998	Wood Memorial Scholarship in the Natural Sciences, Gordon College
1994 –1998	Dean's Scholarship, Gordon College

**Invited Presentations***Research*

Year	Title	Location
2021	A theoretical study of east-west asymmetry in recovery from jetlag	Weekly Meeting of the Analytic and Modeling Unit at Brigham and Womens Hospital/Harvard Medical School (virtual)
2021	Modeling Entrainment in the Mammalian Circadian Clock	SIAM Conference on Applications of Dynamical Systems (virtual)
2020	Why is it easier to recover from jetlag after traveling west than after traveling east?	Colby College Science Division Lunch, Waterville, ME
2020	East-West Asymmetry in Recovery from Jetlag	Weekly Meeting of Hanspeter Herzl's Lab at the Institute of Theoretical Biology at Humboldt University Berlin (virtual)
2020	Determining circadian effects of breast cancer and of anti-cancer drugs	Weekly Meeting of the Analytic and Modeling Unit at Brigham and Womens Hospital/Harvard Medical School Boston, MA
2018	Circadian Time-Keeping in Human Breast Cancer Cells	Bowdoin Women in CS Brunswick, ME
2017	How are human cancer cells like algae?	Colby College Science Division Lunch, Waterville, ME
2017	Using Augmented Phase-Amplitude Oscillators to Infer Directed Connections between Regions of the Mouse Circadian Clock	Association for Women in Mathematics Research Symposium 2017 Los Angeles, CA
2016	Computational Models are Critical to Understanding Circadian Clock Networks	CS Dept., Williams College, Williamstown, MA
2016	Using Augmented Phase-Amplitude Oscillators to Infer Directed Connections between Regions of the Mouse Circadian Clock	Fall Eastern Sectional Meeting of the American Mathematical Society at Bowdoin College Brunswick, ME
2013	When weaker is better: A computational study of the mammalian circadian clock	Math CS Dept., Gordon College, Wenham, MA
2013	Computational models reveal strategies for synchrony in the mammalian circadian clock	Bigelow Laboratory for Ocean Sciences, East Boothbay, ME
2012	Computational models unlock the secrets of our internal clocks	Noontime Faculty Forum, Colby College
2012	Points of sensitivity in circadian cells and networks	Mathematical Biosciences Institute at OSU, Columbus, OH
2012	When weaker is better: A computational study of the mammalian circadian clock	CS Dept., Carleton College, Northfield, MN
2011	Do you have the time? Yes, you do!: Network Complexity in the Mammalian Circadian Clock	Colby College Science Division Lunch, Waterville, ME
2011	Tracking Phase in a Network of Heterogeneous SCN Cells	Third World Congress of Chronobiology, Puebla, Mexico

*Research (cont.)*

Year	Title	Location
2010	Clarifying the Role of Damped Oscillators in the Mammalian Circadian Clock	Maine Biological and Medical Science Symposium, Salisbury Cove, ME
2009	The Best Made Clocks of Mice and Men	Math Dept., Bowdoin College, Brunswick, ME
2009	Panelist for a session titled "Computational biology: Trends and Careers"	Grace Hopper Celebration of Women in Computing, Tucson, AZ
2009	Optimization-based Model Reduction of Circadian Clock Models	SIAM Conference on Applications of Dynamical Systems, Snowbird, UT
2008	Circadian Clock Model Reduction or: All the Precision at 20% the Cost	CS Dept., Bowdoin College, Brunswick, ME
2008	Plant Circadian Clock Model	The iPlant Collaborative Mechanistic Modeling Grand Challenge Workshop, Oracle, AZ
2007	Timing is Everything: Using Computer Science to Understand Circadian Clocks	CS Dept., Colby College, Waterville, ME
2007	Analyzing Circadian Networks with Parametric Impulse Phase Response Curves	2007 Biomedical Engineering Society Fall Meeting, Hollywood, CA
2006	Plants, Clocks, Math, and Computers	Natural and Behavioral Sciences Seminar, Westmont College, Santa Barbara, CA
2006	Numerical Analysis in Systems Biology	Math and CS Grad. Seminar, Cal. State Channel Islands, Camarillo, CA

*Education*

Year	Title	Location
2021	Open-ended Assignments in CS at Colby College	U Washington CS Education Seminar
2018	Panelist for WEC in Science and Engineering	Writing Enriched Curriculum Institute at UMN
2016	Teaching Systems Biology of the Circadian Clock with Journal Articles and Matlab	International Symposium on Biomathematics and Ecology Education and Research Charleston, SC



## Departmental Service Activities

I have been an active member of the computer science department at Colby since the fall of 2008. Because we are a small department, we all contribute when we see needs. Below, I summarize my contributions to several major departmental endeavors.

- *Increasing participation of women and minorities.* My contributions include individual mentoring, hiring female research assistants, hosting social events, and organizing trips to conferences for women and minorities.
- *Mentoring junior faculty.* My department has 2 full-time tenured professors and 5 untenured professors. We do a lot of team teaching and work closely with junior faculty. This provides lots of informal opportunities to mentor, almost daily.
- *Managing teaching assistants.* My contributions include hiring and scheduling student teaching assistants, responding to feedback from both teaching assistants and the students they are assisting, and managing student graders.
- *Managing student graders for multiple classes.* The grading manager for a course writes the guidelines for grading, sends out the grading assignments to 3-8 graders, then reads the grading files to check for consistency before sending them out to students.
- *Organizing departmental events.* My contributions include contacting students and handling the advertising for departmental social gatherings and colloquia. Two of these events merit additional comments:
  - In 2013, we held our first annual celebration of computer science at Colby: we invite 6-8 recent alumni to spend the day at Colby running career-advice sessions for current students. The day ends with a banquet and panel discussion. My role was to participate in scheduling, to invite several alumni, and to handle follow-up communication with them.
  - Each year, we hold a dinner for our graduating seniors. My role has been either to organize it at a restaurant or host it at my house.
- *Enhancing writing within the discipline.* In the summer of 2015, we submitted a Writing in the Disciplines grant proposal to the Colby Writing Program, which was accepted. I am the department liaison, which means I wrote the proposal, write reports, and am organizing the activities necessary for carrying out the work in the grant.
- *Increasing visibility of Colby CS.* We have been making a concerted effort to be more visible participants in the national conversation about c.s. education. At the main computer science education conference in recent years, Bruce and I have presented on pedagogy (2017), writing (2018 and 2019), and inclusion (2019). (in some cases, he presents, and in others I do, but we both worked on all submissions). I have also participated in a panel about writing at the WEC meeting at UMN and in a workshop hosted by CMU on handling growth in course enrollment (2017).

**Institutional Service Activities**

Year	Activity	Description
2021	Search Committee	search for inaugural director of the Davis AI Center
2020–2021	Chair of Search Committee	search for two VAPS in comp. sci.
2019–	Center for Teaching and Learning Faculty Advisory Board	advise director of CTL
2019–2020	Search Committee	search for two tenure-track profs in comp. sci.
2017–2019	Presidential Task Force on Free Ex- pression and Free Inquiry	determine community values and develop policy to reflect them
2016–2019	Distribution Requirements Task Force	evaluate the distribution requirements
2018–2019	Search Committee	search for a tenure-track prof in comp. sci.
2017–2018	Search Committee	search for a tenure-track asst. prof. in statistics
2017–2018	Search Committee	search for two tenure-track profs in comp. sci.
2017–2018	Colby ACM-W Student Chapter	faculty sponsor
2016–2017	Search Committee	search for a tenure-track asst. prof. in statistics
2016–2017	Search Committee	search for a tenure-track prof. in comp. sci.
2012–2017	Independent Study Committee	Co-chair
2016	Search Committee	search for multilingual writing specialist
2016	Search Committee	search for a visiting asst. prof. in theater and dance
2016	Search Committee	search for new Chief Information Officer
2015–2016	Search Committee	search for a tenure-track asst. prof. in statistics
2015–2016	Search Committee	search for a visiting asst. prof. in comp. sci.
2009–2016	Course Evaluation Committee	appointed as a statistician
2014–2015	Search Committee	search for a tenure-track asst. prof. in comp. sci
2013–2014	Search Committee	search for a tenure-track asst. prof. in physics
2012–2013	Search Committee	search for a visiting asst. prof. in comp. sci.
2012, 2014	Recruitment of Presidential Scholars	co-led natural sciences workshop
2010–2011	Search Committee	search for a visiting asst. prof. in comp. sci.
2009–2011	Colby Juggling Club	faculty advisor
2009–2010	Library Strategic Planning Committee	member
2009–2010	Search Committee	search for a visiting asst. prof. in psychology
2009–2010	Search Committee	search for a visiting asst. prof. in biology
2009–2010	Search Committee	search for an HHMI Post-doc in CS

**Disciplinary Service Activities**

Year	Activity	Organization
2021	Poster Session Judge	SIAM Conference on Applications of Dynamical Systems 2021
2017	Invited Session Co-organizer	Association for Women in Mathematics Research Symposium 2017
2014, 2016, 2017	Member	Poster Committee for the Grace Hopper Celebration of Women in Computing
2015	Poster Session Co-Chair	Foundations of Systems Biology in Engineering 2015
2015	Member	Faculty Track Committee for the Grace Hopper Celebration of Women in Computing
2014	Poster Session Coordinator	Organizing committee of the New England Undergraduate Computing Symposium
2014	Session chair	2014 Meeting of the Society for Research on Biological Rhythms
2009, 2013, 2014, 2015	Judge	ACM Student Research Competition at the Grace Hopper Celebration of Women in Computing
2010	Judge	New England Undergraduate Computing Symposium

**Reviewing**

Years	Conference or Journal
2021 –	PLoS Computational Biology
2018 –	Mathematical Biosciences and Engineering
2017 –	Processes
2017–	Nature Communications
2016–	ACM Special Interest Group on Computer Science Education (SIGCSE) Conference
2013–	Biophysical Journal
2013–	Bioinformatics
2010–	American Control Conference
2010–	SIAM Journal on Scientific Computing
2009–	Journal of Biological Rhythms

## Courses Taught

The introductory and 200-level courses have both lectures and labs, usually with one professor teaching the lab and the other the lecture. In that sense, when I am teaching such a course, I have a co-teacher. I list the co-teachers below.

Semester	Title	Enrollment	Co-teacher
Fall 2021	CS232: Computer Organization (Lab) A	9	Ying Li
	CS232: Computer Organization (Lab) B	8	Ying Li
	CS232: Computer Organization (Lab) C	12	Ying Li
	CS232: Computer Organization (Lab) D	10	Ying Li
	CS341: CS251: Data Analysis & Vis (Lecture)	22	Hannen Wolfe
	CS333: Programming Languages	26	
	CS483: Honors Research	4	
	CS484: Honors Research	1	
CS491: Independent Study	2		
Spring 2021	CS251: Data Analysis & Vis (Lecture) A	18	Hannen Wolfe, Oliver Layton
	CS251: Data Analysis & Vis (Lecture) B	24	Hannen Wolfe, Oliver Layton
	CS441: Systems Biology II A	13	
	CS441: Systems Biology II B	13	
	CS483: Honors Research	1	
	CS491: Independent Study	6	
Fall 2020	CS125: Intro to R A	12	
	CS125: Intro to R B	9	
	CS125: Intro to R C	11	
	CS232: Computer Organization (Lab) A	11	Ying Li
	CS232: Computer Organization (Lab) B	14	Ying Li
	CS232: Computer Organization (Lab) C	14	Ying Li
	CS232: Computer Organization (Lab) D	14	Ying Li
CS341: Systems Biology I	39		
Spring 2020	CS484: Honors Research	1	
Fall 2019	CS483: Honors Research	1	
Spring 2019	CS231: Data Structs/Algorithms B	22	Oliver Layton, Eric Aaron
	CS251: Data Analysis & Visualization (Lecture)	20	Z Codabux, B Maxwell
	CS333: Programming Languages	18	
	CS484: Honors Research	1	
	CS491: Independent Study	7	
Jan Plan 2019	CS291: Independent Study	4	
Fall 2018	CS151: Computational Thinking (Lab) A	21	Oliver Layton
	CS151: Computational Thinking (Lab) B	19	Oliver Layton
	CS232: Computer Organization (Lab) A	14	Bruce Maxwell
	CS232: Computer Organization (Lab) B	11	Bruce Maxwell
	CS232: Computer Organization (Lab) C	14	Bruce Maxwell
	CS333: Programming Languages A	14	
	CS333: Programming Languages A	23	
	CS483: Honors Research	1	
	CS491: Independent Study	3	

Semester	Title	Enrollment	Co-teacher
Spring 2018	CS251: Data Analysis & Visualization (Lecture)	38	Z Codabux, C Eaton, B Maxwell
	CS336: Parallel/Dist Processing	21	
	CS441: Systems Biology II A	6	
	CS441: Systems Biology II B	10	
	CS484: Honors Research	1	
	CS492: Independent Study	4	
Jan Plan 2018	CS291: Independent Study	4	
	CS484: Honors Research	1	
Fall 2017	CS231: Data Structs/Algorithms (Lecture)	23	Zadia Codabux, Caitrin Eaton
	CS341: Systems Biology I	20	
	CS481: Minor Capstone	2	
	CS484: Honors Research	2	
	CS491: Independent Study	4	
Spring 2017	CS151: Computational Thinking (Lecture) A	40	Ying Li
	CS152: Computational Thinking (Lab) A	8	Dale Skrien
	CS152: Computational Thinking (Lab) B	14	Dale Skrien
	CS251: Data Analysis & Visualization (Lecture)	34	Bruce Maxwell, Zadia Codabux
	CS484: Honors Research	2	
Jan Plan 2017	CS291: Independent Study	2	
	CS483: Honors Research	2	
Fall 2016	CS152: Computational Thinking (Lecture)	37	Bruce Maxwell
	CS231: Data Structs/Algorithms (Lab) A	18	Bruce Maxwell
	CS231: Data Structs/Algorithms (Lab) B	19	Bruce Maxwell
	CS231: Data Structs/Algorithms (Lab) C	15	Bruce Maxwell
	CS231: Data Structs/Algorithms (Lab) D	7	Bruce Maxwell
	CS232: Computer Organization (Lab) A	8	Ying Li
	CS232: Computer Organization (Lab) B	7	Ying Li
	CS483: Honors Research	2	
	CS491: Independent Study	3	
Spring 2016	CS251: Data Analysis & Visualization (Lecture)	31	Bruce Maxwell
	CS336: Parallel/Dist Processing	18	
	CS441: Systems Biology II A	7	
	CS441: Systems Biology II B	12	
	CS484: Honors Research	2	
Jan Plan 2016	CS090: Internship	1	
	CS291: Independent Study	1	
	CS483: Honors Research	2	
Fall 2015	CS151: Computational Thinking (Lab) A	17	Bruce Maxwell
	CS151: Computational Thinking (Lab) B	23	Bruce Maxwell
	CS151: Computational Thinking (Lab) C	21	Bruce Maxwell
	CS151: Computational Thinking (Lab) D	20	Bruce Maxwell
	CS342: Systems Biology I	25	
	CS483: Honors Research	1	
Spring 2015	CS151: Computational Thinking (Lecture) A	39	Bruce Maxwell
	CS151: Computational Thinking (Lecture) B	40	Bruce Maxwell
	CS251: Data Analysis & Visualization (Lecture)	36	Bruce Maxwell
	CS482: Minor Capstone	1	
	CS492: Independent Study	1	
Jan Plan 2015	CS090: Internship	2	
	EC090: Independent Study	1	

Semester	Title	Enrollment	Co-teacher
Fall 2014	CS151: Computational Thinking (Lab) A	20	Dale Skrien
	CS151: Computational Thinking (Lab) B	19	Dale Skrien
	CS231: Data Structs/Algorithms (Lab) A	15	Dale Skrien
	CS231: Data Structs/Algorithms (Lab) B	12	Dale Skrien
	CS231: Data Structs/Algorithms (Lab) C	19	Dale Skrien
	CS333: Programming Languages	21	
	CS481: Minor Capstone	1	
	CS491: Independent Study	2	
Spring 2014	CS232: Computer Organization (Lab) A	14	Kyle Burke
	CS232: Computer Organization (Lab) B	12	Kyle Burke
	CS251: Data Analysis & Visualization (Lecture)	36	
	CS251: Data Analysis & Visualization (Lab) A	18	
	CS251: Data Analysis & Visualization (Lab) B	18	
	CS336: Parallel/Dist Processing	15	
	CS484: Honors Research	1	
	CS492: Independent Study	2	
Jan Plan 2014	CS090: Internship	2	
	CS091: Independent Study	1	
	CS291: Independent Study	1	
Fall 2013	CS151: Computational Thinking (Lecture)	38	Kyle Burke
	CS231: Data Structs/Algorithms (Lecture)	30	Kyle Burke
	CS483: Honors Research	1	
	CS491: Independent Study	2	
Spring 2013	CS151: Computational Thinking (Lab) A	10	Dale Skrien
	CS151: Computational Thinking (Lab) B	13	Dale Skrien
	CS151: Computational Thinking (Lab) C	15	Dale Skrien
	CS151: Computational Thinking (Lab) D	13	Dale Skrien
	CS251: Data Analysis & Visualization (Lecture)	15	Bruce Maxwell
	CS441: Systems Biology II	6	
	CS484: Honors Research	1	
Jan Plan 2013	CS090: Internship	1	
	CS483: Honors Research	1	
Fall 2012	CS151: Computational Thinking (Lecture)	38	Bruce Maxwell
	CS341: Systems Biology I	6	
Spring 2011	CS151: Computational Thinking (Lecture) A	21	Bruce Maxwell
	CS151: Computational Thinking (Lecture) B	13	Bruce Maxwell
	CS336: Parallel/Dist Processing	4	
	CS492: Independent Study	3	
Fall 2010	CS484: Honors Research	1	
	CS491: Independent Study	2	
Spring 2010	CS151: Computational Thinking (Lecture) A	23	Bruce Maxwell
	CS151: Computational Thinking (Lecture) B	16	Bruce Maxwell
	CS441: Systems Biology II	10	
	CS483: Honors Research	1	
	CS492: Independent Study	2	
Jan Plan 2010	CS291: Independent Study	1	

Semester	Title	Enrollment	Co-teacher
Fall 2009	CS151: Computational Thinking (Lab) A1	13	Dale Skrien
	CS151: Computational Thinking (Lab) A2	3	Dale Skrien
	CS151: Computational Thinking (Lab) B1	9	Dale Skrien
	CS151: Computational Thinking (Lab) B2	5	Dale Skrien
	CS341: Systems Biology I	15	
	CS491: Independent Study	2	
Spring 2009	CS151: Computational Thinking (Lecture) A	30	Bruce Maxwell
	CS151: Computational Thinking (Lecture) B	25	Bruce Maxwell
Fall 2008	CS151: Computational Thinking (Lab) A	8	Dale Skrien
	CS151: Computational Thinking (Lab) B	13	Dale Skrien
	CS231: Data Structs/Algorithms (Lab)	9	Dale Skrien
	CS336: Parallel/Dist Processing	7	

## Supervised Projects

### *Honors Projects*

Year	Student	Project
2021–2022 Academic Year	Nelson Wu	Self-enhancing delays in Clock Models
2021–2022 Academic Year	Brendan Martin	Period of Ensemble of Oscillators Depends on Phase Dispersion
2021–2022 Academic Year	Tyler Hansen	Sentiment Analysis in Video Games
2021–2022 Academic Year	Di Luo	Summarizing Videos of Soccer Games
2021	Dhruv Joshi	Game Theory and ML with Kuhn Poker
2019–2020 Academic Year	Rayne Wang	Phase-Determining Factors of Circadian Oscillators
2018–2019 Academic Year	Douglas Abrams	An Assessment of methodologies for resolving UMI mutations and indels in Single Cell RNA-sequencing (scRNA-seq)
2017–2018 Academic Year	Victoria Chistolini (Honors)	Computational models for SMD data
2016–2017 Academic Year	Ryan Salerno	Understanding Malicious use of the Domain Name System (DNS), co-advised with Dan Siff
2016–2017 Academic Year	Michael Remondi	Developing, Deploying, and Analyzing the use of a New Restaurant Ratings App
2016–2017 Academic Year	Vivek Sah	Deep Learning
2015–2016 Academic Year	William Kearney	Genetic Algorithms to Evolve Artificial Neural Networks
2015–2016 Academic Year	Jack Walpuck	Convolutional Neural Networks
2013–2014 Academic Year	Devon Cormack	Network inference of the mammalian circadian clock
2012 Summer – 2013 Spring	Zachary Cecere	Synchronization of clock networks
2009–2010 Academic Year	Andrew Cox	Multi-oscillator model of the mammalian circadian clock

*Independent Study and Summer Projects*

Year	Student	Project
Fall 2022	Tyler Hansen	Linking Story with Visual
Fall 2022	Matt Welch	Parallel Programming (projects from CS336)
Spring 2021	Stjepan Vrbic	Operating Systems
Spring 2020	Haemi Lee, Deka Popov, Dylan Walsh	Mobile Game Development
Spring 2020	Adjoa Tettey-Fio	Web Platform to Help Students Share Mental Health Info
Spring 2019	Xiaoyue (Mike) Zheng	Measurement of Fitting Quality of a Damped Oscillator
Spring 2019	Cole Turner	ML in iOS
Spring 2019	Lucas Degraw	Comparing iOS vs Android Native Development Process
Spring 2019	Iris Liu	Developing Games in 3 Environments
Spring 2019	Jonathan Allard	ML for plant identification
Fall 2018	Will Reynolds, Scott Schibli	Using ML to Predict Lobster Catch
Fall 2018	Jason Gurevitch	Data Analysis on Asexual Community Census
Summer 2018	Iris Lian	Machine Learning to Understand Effects of Cancer on Circadian Clock
Summer 2018	Peisen Zhou	Interacting Signals in the Circadian Multi-oscillator
Spring 2018	Makoto Kinoshita	Designing an Efficient Mechanism for Managing Personal Knowledge
Summer 2017	Maan Qraitem	Estimating a non-stationary period from Circadian data
Summer 2017	Lucia Wang and Iris Lian	Understanding Entrainment of the Circadian Multi-oscillator
2016 Summer	Neil Sefah and Makoto Kinoshita	Understanding Entrainment of the Circadian Multi-oscillator
Fall 2016	Carl-Philip Majgaar	Deep Learning To Identify Empty Parking Spaces
Fall 2016	Robert Campbell	Support Vector Machines
2015 Summer	Itrat Akhter & Joseph Malionek	Modeling the core and shell of the mammalian clock
2014 Summer	Olivia Lang	Improving a model of the fly circadian clock
2014 Summer	Itrat Akhter	Network inference of the mammalian circadian clock
2013–2014 Academic Year	Audrey Lyman	Analysis of circadian clock and Zetaproteobacteria data
2013 Summer	Roxana Gheorghe	Network inference of the mammalian circadian clock
2013 Summer	Olivia Lang	Improving a model of the fly circadian clock
2011 Summer and Fall	David Quigley	Period determination in clock networks
2011 Spring	Allyson Cheever and Sarah Harmon	Comparative phase analysis of fly circadian clock



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Year	Student	Project
2011 Spring	Nathan Katsiaticas	Learning Matlab
2010 Summer and Fall	Allyson Cheever	Phase analysis of fly circadian clock
2009–2010 Academic Year	Sarah Harmon	Human-Robot interaction
2009–2010 Academic Year	Hannah Coulson	Analysis of mammalian circadian clock model
2009 Summer	Katherine Smith	Theory of entrainment for circadian clocks
	Olena Marchenko	Augmenting a model of the plant circadian clock

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**Workshops and Conferences Attended**

Date	Location	Title
May 2021	virtual	SIAM Conference on Applications of Dynamical Systems
Feb 2020	Boston, MA	Academic Impressions Conference for Department Chairs
Feb 2019	Minneapolis, MN	ACM Technical Symposium on Computer Science Education (SIGCSE)
Feb 2018	Baltimore, MA	
Mar 2017	Seattle, WA	
Mar 2015	Kansas City, MO	
Mar 2013	Denver, CO	
Mar 2009	Chattanooga, TN	
May 2018	Amelia Island, FL	Society for Research on Biological Rhythms Biennial Meeting
May 2016	Tampa, FL	
Jun 2014	Big Sky, MT	
May 2012	Sandestin, FL	
May 2008	Sandestin, FL	
Apr 2018	Minneapolis, MN	Writing Enriched Curriculum Institute at UMN
Oct 2017	Pittsburgh, PA	CS Education Summit: Addressing the challenges of increasing interest in computing at the undergraduate level through institutional transformation
Jul 2017	Stowe, VT	Gordon Research Conference: Chronobiology
Jul 2013	Newport, RI	
Jun 2011	Lucca (Barga), Italy	
Apr 2017	Los Angeles, CA	Association for Women in Mathematics Research Symposium 2017
Mar 2017	Portland, ME	New England Celebration of Women in Computing
Oct 2016	Charleston, SC	International Symposium on Biomathematics and Ecology Education and Research
Sep 2016	Brunswick, ME	Fall Eastern Sectional Meeting of the American Mathematical Society
Oct 2015	Houston, TX	Grace Hopper Celebration of Women in Computing
Oct 2014	Phoenix, AZ	
Oct 2013	Minneapolis, MN	
Oct 2012	Baltimore, MD	
Sep 2009	Tucson, AZ	
Oct 2008	Keystone, CO	
Oct 2006	San Diego, CA	
Aug 2015	Boston, MA	
Aug 2009	Denver, CO	
Aug 2005	Santa Barbara, CA	
Apr 2015	Boston, MA	New England Undergraduate Computing Symposium
Apr 2010		
Oct 2014	Worcester, MA	Clocks Club of New England
Jun 2014		

**Workshops and Conferences Attended (cont.)**

Date	Location	Title
Apr 2013 Apr 2011 Apr 2010	Salisbury Cove, ME	Maine Biological and Medical Science Symposium
Feb 2013	La Jolla, CA	UCSD Center for Chronobiology 2013
Feb 2012	Columbus, OH	Workshop on Robustness in Biological Systems, Mathematical Biosciences Institute
Jan 2012	Fairfield, CT	Performance, Science, and Science Education: Cultivating Ensembles in STEM Education and Research
May 2011	Puebla, Mexico	Third World Congress of Chronobiology
May 2009	Snowbird, UT	SIAM Conference on Applications of Dynamical Systems
Mar 2009	Chattanooga, TN	CRA-W Managing the Academic Career for Faculty Women at Undergraduate Computer Science and Engineering Institutions Workshop
Nov 2008	Biosphere 2, Oracle, AZ	The iPlant Collaborative Mechanistic Modeling Grand Challenge Workshop
Sep 2007	Hollywood, CA	Biomedical Engineering Society (BMES) Fall Meeting
Jul-Aug 2007	Santa Barbara, CA	Biological Switches and Clocks Program, Kavli Institute for Theoretical Physics
Jun 2007	Boston/Cambridge, MA	Meeting of the National Centers of Integrative and Systems Biology
Mar 2007	Palo Alto, CA	Stanford 50: State of the Art and Future Directions of Computational Mathematics and Numerical Computing
Feb 2007	Costa Mesa, CA	SIAM Conference on Computational Science and Engineering
May 2006	Santa Barbara, CA	Institute for Collaborative Biotechnologies Army-Industry Collaboration Conference
May 2005	Tokyo, Japan	SBML Hackathon
Jan 2005	Menlo Park, CA	Bio-SPIICE Engineering Product Development Task Force Hackathon

**Professional Affiliations**

Society for Research on Biological Rhythms	Regular Member since 2010
Association for Computing Machinery	Member since 2008
Society of Industrial and Applied Mathematics	Member since 2005

**Recent Collaborators**

Dr. Eva Farré            Michigan State University  
Dr. Michelle Farkas    University of Massachusetts, Amherst