

# Eric Chown

Digital and Computational Studies  
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## Education

- Ph.D. 1994      **University of Michigan**      Ann Arbor, MI  
*Major:*      Computer Science  
*Specialization:*      Artificial Intelligence  
*Advisor:*      Stephen Kaplan  
*Fellowships:*      Rackham Research Fellowship  
                                Nissan Cognitive Science Fellowship  
*Honors.*      Given “Outstanding Teaching Assistant” award.
- M.S 1987      **Northwestern University**      Evanston, IL  
*Fellowships:*      Walter J. Freeman Fellowship
- B.A. 1985      **Northwestern University**      Evanston, IL  
*Major:*      Computer Science  
*Honors:*      Departmental Honors

## Academic Positions

- 1994-1998      **Oregon State University**      Corvallis, OR  
Postdoctoral Assistant in Machine Learning
- 1998-2004      **Bowdoin College**      Brunswick, ME  
Assistant Professor of Computer Science
- 2004-2010      **Bowdoin College**      Brunswick, ME  
Associate Professor of Computer Science  
Department Chair, 2004-2007  
*Honors:* Samuel S. Butcher Professor of the Natural Sciences
- 2010-2019      **Bowdoin College**      Brunswick, ME  
Professor of Computer Science  
Department Chair, 2011-2014
- 2019-Present      **Bowdoin College**      Brunswick, ME  
Sarah and James Bowdoin Professor of Digital and Computational  
Studies  
Program Director, 2011-2019

## **Publications (undergraduate co-authors indicated with \*)**

### Books

- Chown, E., & Nascimento, F. (2023) *Meaning-full Technologies: How Digital Metaphors Change the Way We Think and Live* . Lever Press.
- Chown, E., Ploeger, P., and Ruiz del Solar, J. (eds.) (2011). *RoboCup 2010; Robot Soccer World Cup XIV*. Lecture Notes in Artificial Intelligence. Berlin: Springer.

### Journals

- Chown, E. (1999). Making predictions in an uncertain world: Environmental structure and cognitive maps. *Adaptive Behavior*, 1-17.
- Chown, E., Kaplan, S. & Kortenkamp, D. (1995). Prototypes, Location and Associative Networks (PLAN): Towards a unified theory of cognitive mapping. *Cognitive Science.*, 19, 1-52.
- Hall, C., Chown, E., & Nascimento, F. (2021). A Critical, Analytical Framework for the Digital Machine. *Interdisciplinary Science Review*, 46:4, 458-476
- Kaplan, S., Sonntag, M. & Chown, E. (1991) Tracing recurrent activity in cognitive elements (TRACE): A model of temporal dynamics in a cell assembly. *Connection Science*, 3, 179-206.

### Highly Refereed Conferences

- Chown, E. (2002). Reminiscence and arousal: A connectionist model. In the *Proceedings of the Twenty Fourth Annual Meeting of the Cognitive Science Society*. Gray, W.D. & Schunn, C. (eds.). Lawrence Erlbaum, 202-207.
- Chown, E. & Dietterich, T. G. (2000). A divide and conquer approach to learning from prior knowledge. In *Proceedings of the Seventeenth International Conference on Machine Learning*, Langley, P. (ed.), Morgan Kaufman, 143-150.
- Chown, E., Foil\*, G., Work\*, H., & Zhuang\*, Y. (2006). AiboConnect: A simple programming environment for robotics. *The Proceedings of the 19<sup>th</sup> International FLAIRS conference*.
- Chown, E., Jones, R.M., & Henninger, A.E. (2002). An architecture for emotional decision-making agents. *Proceedings of The First Annual Conference on Autonomous Agents & Multiagent Systems*
- Chown, E. & Lagoudakis, M. (2015). The Standard Platform League. In Bianchi, R.A.C., Levent Akin, H.L, Ramamoorthy, S., & Sugiura, K. (eds.) *RoboCup 2014: Robot Soccer World Cup XVIII*. Lecture Notes in Artificial Intelligence. Berlin: Springer.
- Chown, E., & Yeap, W.K. (2015). Cognitive Robotics, in A. Bikakis and X. Zheng (Eds.): *MIWAI 2015*, LNAI 9426, pp. 294-305. Springer
- Cochrane, B., Lee, F.J., & Chown, E. (2006). Modeling Emotion: Arousal's impact on memory. In the *Proceedings of the 26<sup>th</sup> Annual Meeting of the Cognitive Science Society*.

- Forbell\*, E., & Chown, E. (2000). Lexical contact during speech perception: A connectionist model. In *Proceedings of the Twenty Second Annual Meeting of the Cognitive Science Society*.
- Henninger, A.E., Jones, R.M. & Chown, E. (2003). Behaviors that emerge from emotion and cognition: Implementation and evaluation of a symbolic-connectionist architecture. To appear in *Proceedings of The Second Annual Conference on Autonomous Agents & Multiagent Systems*
- Kortenkamp, D. & Chown, E. (1993). A directional spreading activation network for mobile robot navigation. *From Animals to Animats 2, Proceedings of the Second International Conference on Simulation of Adaptive Behavior*, Meyer, J.-A., Roitblat H. L. and Wilson, S.W. (eds.), MIT-Press.
- Mamantov\*, E., W., Silver, W., Dawson\*, & Chown, E. (2014). RoboGrams: A lightweight message passing architecture for RoboCup soccer. In Bianchi, R.A.C., Levent Akin, H.L, Ramamoorthy, S., & Sugiura, K. (eds.) *RoboCup 2014: Robot Soccer World Cup XVIII*. Lecture Notes in Artificial Intelligence. Berlin: Springer.
- Morrison\*, J., Silver, W., & Chown, E. (2012). Implementing a real-time Hough transform on a mobile robot. In Chen X., Stone P., Sucar L.E., & Van der Zan T. (eds.) *RoboCup 2012; Robot Soccer World Cup XVI*. Lecture Notes in Artificial Intelligence. Berlin: Springer.
- Strom\*, J., Slavov\*, G, & Chown, E. (2009). Omni-Directional Walking using ZMP and Preview Control for the NAO Humanoid Robot. In *RoboCup 2009: Robot Soccer World Cup XIII*, Springer, Berlin.
- Work\*, H., Chown, E., Hermans\*, T., & Butterfield\*, J. (2008). Robust team play in highly uncertain environments. In the Proceedings of the 7<sup>th</sup> International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS 2008). Padgham, Parkes, Muller and Parsons (eds.). May, 2008.
- Work\*, H., Chown, E., Hermans\*, T., & Butterfield\*, J. & McGranaghan, M.(2008). Player positioning in the four-legged league. In *RoboCup 2008: Robot Soccer World Cup XII*, Springer, Berlin.

### Book Chapters

- Chown, E. (1999). Error tolerance and generalization in cognitive maps: Performance without precision. In Golledge, R. (ed.) *Wayfinding Behavior: Cognitive Mapping and Other Spatial Processes.*, 349-369 The Johns Hopkins University Press.
- Chown, E. (2004). Cognitive Modeling. In Tucker, A. (ed.). *CRC Handbook of Computer Science and Engineering*. CRC Press.
- Chown, E. (2013). Spatial Prototypes. In Claramunt, C., and Thenbrink, T. (eds.), *Spatial Behavior and Linguistic Representation*.
- Chown, E. & Boots\*, B. (2008). Learning cognitive maps: Lessons for robotics. In Jefferies, M., & Yeap, W.K. (eds) *Robotic and cognitive approaches to spatial mapping*.
- Chown, E. & Nascinmento, F. (2021). Software and Metaphors: The Hermeneutical Dimensions of Software Development. In Coeckelbergh, M., Romele, A., & Reijers, W (eds.) *Interpreting*

*Technology: Ricoeur on Questions Concerning Ethics and Philosophy of Technology*, Rowman & Littlefield.

Chown, E., & Yeap, W.K. (2015). Cognitive Robotics, in *Multi-Disciplinary Trends in Artificial Intelligence*, Springer.

### Commentaries

Chown, E. (1995). Reverberation reconsidered: On the path to cognitive theory. *Behavioral and Brain Sciences*, 18, 628-629.

Chown, E., Booker, L.B., & Kaplan, S. (2001). Perception, Action Planning, and Cognitive Maps. *Behavioral and Brain Sciences*. 24:5, 878.

Chown, E. & Kaplan, S. (1992). Active symbols, limited storage and the power of natural intelligence. *Behavioral and Brain Sciences*, 15:3, 442-443.

### Other

Chown, E. (1994). Consolidation and Learning: A Connectionist Model of Human Credit Assignment. Doctoral dissertation. The University of Michigan.

Chown, E. (2000). Gateways: An approach to parsing spatial domains. In *ICML-2000 Workshop on Machine Learning of Spatial Knowledge*, 1-6.

Chown, E., Fishman\*, J, Strom\*, J, Slavov\*, G., Hermans\*, T., Dunn\*, N., Lawrence\*, A., Morrison\*, J., & Krob\*, E. (2008). The Northern Bites 2008 Standard Platform Robot Team., <http://www.tzi.de/spl/bin/view/Website/Teams2009>

Henninger, A.E., Jones, R.M., and Chown, E. (2001). A Symbolic Framework for Representing Emotion in Synthetic Forces. In the *Proceedings of the '01 Interservice/Industry Training Simulation and Education Conference (I/ITSEC)*, November 26-29, 2001. Orlando, FL.

Henninger, A.E., Jones, R.M., and Chown, E. (2002). Behaviors that Emerge from Emotion and Cognition: A First Evaluation. In the *Proceedings of the '02 Interservice/Industry Training Simulation and Education Conference (I/ITSEC)*. Orlando, FL.

Hermans\*, T., Strom\*, J., Slavov\*, G., Morrison\*, J., Lawrence\*, A., Krob\*, E., & Chown, E. (2009). Northern Bites 2009 Team Report. To appear at: <http://www.tzi.de/spl/bin/view/Website/Teams2010>

Jones, R.M., Chown, E., & Henninger, A.E. (2001). A hybrid symbolic-connectionist approach to modeling emotions. In *AAAI Fall Symposium Emotional and Intelligent II: The Tangled Knot of Social Cognition*. Technical Report FS-01-02. AAAI Press.

Jones, R.M., Henninger, A.E., & Chown, E. (2002). Interfacing Emotional Behavior Moderators with Intelligent Synthetic Forces, *Proceedings of 11th Computer Generated Forces and Behavior Representation Conference*. Orlando, FL

Work\*, H., Chown, E., Butterfield\*, J., Convery\*, J.F., Costello\*, P., Fishman\*, J., McKay\*, T., Mortimer\*, B., Murchison\*, M., Reeve\*, Q., Slavov\*, G., and Zhuang\*, Y. (2006). **Northern Bites 2006 Team Report.**, <http://www.tzi.de/4legged/bin/view/Website/Teams2006>

### Non traditional works

Northern Bites (2005, 2006, 2008). Entrant into U.S. Open RoboCup competition, four-legged league. Notable results: First place, 2008. See <http://www.robocup-us.org/>

Northern Bites (2006-2016). Entrant into World Championship RoboCup competition, four-legged league. Results: World champions 2007, 3<sup>rd</sup> place 2008, 2<sup>nd</sup> place 2009, quarterfinalists, 2010, 2013. See <http://www.tzi.de/spl/bin/view/Website/History>

Northern Bites (2007, 2008). Entrant into German. Open RoboCup competition, four-legged league. Results: 3<sup>rd</sup> place in 2007, 2<sup>nd</sup> place in 2008.

Northern Bites (2009-2016). Played host to U.S. Open RoboCup competition, four-legged league. Results: 4<sup>th</sup> place 2009, 3<sup>rd</sup> place 2011, 2012, 2<sup>nd</sup> place 2013, 3<sup>rd</sup> place 2014, 2<sup>nd</sup> place 2015, 2<sup>nd</sup> place 2016. See <http://www.robocup-us.org/>

## **Competitive Grants and Awards**

1985-1986 *Walter P. Murphy Fellowship.*

1991 *Nissan Cognitive Science Fellowship*

1991-1992 *Rackham Research Partnership Fellowship* (with Stephen Kaplan)

1995-1997 *NSF CISE Post-Doctoral Associateship in Experimental Science*

1999 *CBB Mellon Grant* (with David Garnick and Clare Congdon)

1999 *NSF Grant* (with Carrie Phillips and Louisa Slowiaczek).

2001-2006 NSF CAREER Grant

2006-2008 Fairchild Semiconductor

2010-2013 NSF RUI Grant

2014 RoboCup Federation travel and research grant

2022 NCH and Google Responsible AI curriculum grant

## **Other Grants and Awards**

2006 – Received \$100,000 anonymous donation for RoboCup program

2007 – Named the Samuel S. Butcher Associate Professor of the Natural Sciences

2007 – RoboCup team won World Championship

2008 – RoboCup team won U.S. Open

2014 – Received \$50,000 donation for RoboCup program

2015 – Received \$50,000 in donations for RoboCup program

2019 – Named the Sarah and James Bowdoin Professor of Digital and Computational Studies

## **Professional Activities**

### Program Committees:

FLAIRS 2004-2007, 2009-20013 AI Education track.

AAMAS 2008, Robotics track

RoboCup Symposium 2009-2016  
Humanoids 2010-2012

Co-Chair: RoboCup Symposium, 2010.

Executive Committee: RoboCup Standard Platform League, 2013-2018

Technical Committee: RoboCup Standard Platform League, 2008.

Organizer: RoboCup U.S. Open 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015

League Organizing Chair: RoboCup Standard Platform League 2010.

Grant Reviewer: NSF CAREER Program, 2001, 2005, plus multiple ad hoc NSF reviews  
WWTF Cognitive Science, 2011

Legal Consultant: Pierce Atwood LLP., 2008

External Tenure Reviewer: Reed College, 2008, Franklin & Marshall, 2015, Harvey  
Mudd, 2017

External Promotion Reviewer: Willamette University, 2006, 2007

External Promotion Committee Member: Spelman College, 2010/11

Founder: Bowdoin, Bates, Colby Computer Science Group: 2000-2012

### **Selected Media Coverage**

(2003) *Artificial Intelligence in Medicine*. Ivanhoe Broadcast News. Aired on local news  
across the country.

(2006) *Bend it like Nimbro*. Popular Science. <http://www.popsci.com/gear-gadgets/article/2006-06/bend-it-nimbro>

(2006) *Programmers Get Their Kicks*. Portland Press Herald, 4/18/06

(2006) *Robo Dogs Don't Exactly 'Bend it like Beckham' But They Get The Job Done*.  
Brunswick Times Record, 4/17/06

(2006) *Robot Soccer Dogs Headed to World Championship*. WMTW TV, Aired 4/26/06.  
<http://www.wmtw.com/news/9015569/detail.html>

(2006) *207*. WCSH6 TV, Aired 5/17/06

(2006) *Drew Carey's Sporting Adventures*. Aired multiple times on The Travel Channel

(2007) *Live Interview*. CNN, Aired 7/7/07

- (2007) *Live Interview on Maine Things Considered*, NPR, Aired 7/9/07
- (2007) *RoboCup Bots Experiment with our Preconceived Notion of Competition*. Engadget (Engadget receives more than one million unique visitors per month). <http://www.engadget.com/2009/05/04/robocup-bots-experiment-with-our-preconceived-notions-of-competi/>
- (2007) *Who won RoboCup 2007?* CNET (CNET receives more than 15 million unique visitors per month). [http://news.cnet.com/8301-10784\\_3-9740729-7.html](http://news.cnet.com/8301-10784_3-9740729-7.html)
- (2007) *Dogged Determination Leads to RoboCup Victory*. CNN.com (CNN receives more than 20 million unique visitors per month) <http://www.cnn.com/2007/TECH/07/25/robocup/>
- (2007) *A look back at RoboCup 2007*. The Future of Things <http://thefutureofthings.com/news/24/a-look-back-at-robocup-2007.html>
- (2007) *Soccer Dogs Chomp Competition at World Championships*. The Daily Galaxy. [http://www.dailygalaxy.com/my\\_weblog/2007/06/northern\\_bites\\_.html](http://www.dailygalaxy.com/my_weblog/2007/06/northern_bites_.html)
- (2008) *The Northern Bites RoboCup Team*. Servo Magazine.
- (2009) *Students Create Robot Soccer Players*. WCSH TV. Aired June, 2009. <http://www.wcsh6.com/news/local/story.aspx?storyid=104206&catid=2>
- (2009) *Daily Planet*. The Discovery Channel Canada, Aired 11/13/09

## **Students**

### Undergraduate Honors Thesis Supervision

- 2000 Eric Forbell, Bowdoin College
- 2000 Anthony Roy, Bowdoin College
- 2001 Doug Vail, Bowdoin College
- 2003 Byron Boots, Bowdoin College
- 2005 Greydon Foil, Bowdoin College
- 2007 Alec Berryman, Bowdoin College
- 2009 Johannes Strom, Bowdoin College
- 2009 Tucker Hermans, Bowdoin College
- 2011 Jack Morrison, Bowdoin College
- 2012 Octavian Neamtu, Bowdoin College
- 2013 Wils Dawson, Bowdoin College
- 2013 EJ Googins, Bowdoin College
- 2013 Elizabeth Mamantov, Bowdoin College
- 2014 Ellis Ratner, Bowdoin College
- 2016 Megan Maher, Bowdoin College
- 2018 Cory Alini, Bowdoin College
- 2019 James Little, Bowdoin College

### Summer Research Supervision

- 2004 Greydon Foil
- 2005 Henry Work, Yi Zhuang
- 2006 Henry Work, Yi Zhuang, Jesse Butterfield, Joho Strom, Jeremy Fishman, Pat Costello, Ferd Convery, Matt Murchison
- 2007 Jesse Butterfield, Joho Strom, Jeremy Fishman, Nick Dunn, Tucker Hermans, Mark McGranaghan, George Slavov
- 2008 Joho Strom, Jeremy Fishman, Nick Dunn, Tucker Hermans, George Slavov, Elise Krob, Jack Morrison, Andrew Lawrence
- 2009 Joho Strom, Tucker Hermans, Elise Krob, Jack Morrison, Andrew Lawrence
- 2010 Jack Morrison, Andrew Lawrence, Nate Merritt, Ben Johnson
- 2011 Jack Morrison, Nate Merrit, Ben Johnson, Octavian Neamtu, Dani McAvoy, Elizabeth Mamantov, EJ Googins, Wils Dawson
- 2012 Octavian Neamtu, Dani McAvoy, Elizabeth Mamantov, EJ Googins, Ben Mende, Wils Dawson, John Visintin, Ellis Ratner, Brian Jacobel, Josh Zalinger
- 2013 Elizabeth Mamantov, EJ Googins, Ben Mende, Wils Dawson, Josh Zalinger, Josh Imhoff, Daniel Zeller, Evan Hoyt
- 2014 Josh Imhoff, Daniel Zeller, Nicole Morin, Megan Maher, Daniel Navarro, Clara Belitz
- 2015 Josh Imhoff, Daniel Zeller, Nicole Morin, Megan Maher, Daniel Navarro, Kote Mushegian, Franco Sasieta, Bella Tumaneng, Cory Alini, Phil Koch, Evan Hoyt
- 2016 Nicole Morin, Megan Maher, Phil Koch, Kote Mushegian, Cory Alini, Bella Tumaneng, Marcus Christensen, James Little
- 2017 Timothy Moran
- 2018 Jack Beckitt-Marshall
- 2019 Jack Bekitt-Marshall
- 2020 Max Freeman
- 2022 Evran Euras

### Masters Committee Membership

- 2000 Russ Tedrake, University of Michigan

### Doctoral Committee Membership

- 2009 Chee Kit Wong, Auckland University of Technology
- 2012 (Anonymous) University of Newcastle, Australia



## **Courses Taught**

### **Computer Science**

The Digital World  
Introduction to Computer Science  
Accelerated Introduction to Computer Science  
Data Structures  
Programming Languages  
Projects in Computer Science  
Mobile Computing  
Theory of Computation  
Robotics  
Cognitive Architecture  
Artificial Intelligence  
Advanced Seminar in Robotics

### **Digital and Computational Studies**

Gateway to the Digital Humanities  
Introduction to Digital and Computational Studies  
Computational Methods  
Data Driven Societies  
Programming with Data  
Digital Privilege  
AI in the World  
Ethics in the Age of Artificial Intelligence  
Cognition in Analog and Digital Environments

## **Outreach – Robotics Demonstrations**

2002	Hosted Toddy Pond Elementary School Robotics class.
2003-2011	Hosted Bowdoin College Children Center classes.
2009-2011	Hosted Miscellaneous Small Student Groups
2006	Hosted Mt. Ararat Junior High Science Club
2009	“Cornerstones in Science” – Brunswick Library
2010	Hosted a robotics booth at the <i>National Science Fair</i>
2010-20011	Served as advisor to 4H Robotics Club
2011	Spoke at Mt. Ararat Junior High
2012	Taught robotics at Woodside Elementary School
2014, 2016	World Science Festival – ran demos with RoboCup team
2016-17	Taught robotics at Woodside Elementary School
2017	Taught computer science to local middle school children

## **Campus Demonstrations and Talks**

2005	Parents Weekend – talk and demonstration
2005	Faculty Seminar – research presentation
2006	Beneath the Pines – talk and demonstration
2006	Parents Weekend – talk and demonstration
2006	Faculty Seminar – research presentation

2007	Trustees Meeting - demonstration
2007	Faculty Seminar – research presentation
2008	Technology and Bowdoin: Campus Excellence and Careers
2008	Parents Weekend –demonstration
2009	Parents Weekend – demonstration
2009	Faculty Seminar – research presentation
2011	Parents Weekend – demonstration
2012	Parents Weekend – demonstration
2013	Parents Weekend – demonstration
2015	Parents Weekend – demonstration
2015	Faculty Seminar – research presentation
2017	Parents Weekend – demonstration
2019	Parents Weekend “Academic Experience” talk
2019	Family Weekend – talk
2021	Endowed chair lecture
2023	Moderator: Beyond Good and Bad: AI in the Context of the Liberal arts – Presidential Inauguration Panel
2024	Moderator: The Common Good: How Relevant is it Today? Class of 1974 Reunion Panel
2024	Panelist: AI Across the Curriculum: An Interdisciplinary, Modular Approach to Bringing AI to the Classroom
2025	Faculty Seminar – research presentation

## College Service

1999-2001	Curriculum and Educational Policy Committee
1999	Advisor, ACM Programming Competition team
2002-2003	Admissions Committee
2004-2007	Department Chair, Computer Science
2004-2007	Academic Computing Committee
2005-2018	Advisor, Bowdoin RoboCup team
2005-2007,	Trustee IT Advisory Committee
2006-2007	Classroom Committee
2007	Bowdoin Science Experience
2009-2012	Curriculum and Educational Policy Committee
2010-2017	Trustee IT Advisory Committee
2011-2014	Department Chair, Computer Science
2012-2014	Steering Committee on Computational Studies
2013-2014	Co-Director, Digital and Computational Studies
2015-2019	Director, Digital and Computational Studies
2017-18	Working Group on Faculty Mentoring
2019	Working Group of Scheduling
2019-2020	Working Group on Quantitative Literacy
2020	Return to Campus Committee
2021-2022	Student Fellowship Committee
2022-2023	Institutional Search Committee
2023	Presidential Inauguration Committee

2023-2024  
2024-  
2024  
2025

Library Committee  
Committee on Teaching and Classroom Practices  
Committee on Appointment, Promotion and Tenure  
Chair, Committee on Appointment, Promotion and  
Tenure