

# Eric Chown

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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-Present      **Bowdoin College**      Brunswick, ME  
Associate Professor of Computer Science  
Department Chair, 2004-2007  
*Honors:* Samuel S. Butcher Professor of the Natural Sciences

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

### 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.
- 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*
- 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.
- 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. & Boots\*, B. (2008). Learning cognitive maps: Lessons for robotics. In Jefferies, M., & Yeap, W.K. (eds) *Robotic and cognitive approaches to spatial mapping.*

### 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). Entrant into U.S. Open RoboCup competition, four-legged league. See <http://academic.bowdoin.edu/computerscience/robotics/robocup/>

Northern Bites (2006). Entrant into U.S. Open RoboCup competition, entrant into World Championship RoboCup competition, four-legged league. See <http://studorgs.bowdoin.edu/robocup/>

Northern Bites (2006). Entrant into World Championship RoboCup competition, four-legged league. Top 12 finish. See <http://www.robocup2006.org/start?lang=en>

Northern Bites (2007). Entrant into German. Open RoboCup competition, four-legged league. 3<sup>rd</sup> place. See <http://www.robocup-german-open.de/en>

Northern Bites (2007). Entrant into World Championship RoboCup competition, four-legged league. World champions. See <http://www.robocup-us.org/>

Northern Bites (2008). Entrant into German. Open RoboCup competition, four-legged league. 2<sup>nd</sup> place. See <http://www.robocup-german-open.de/en>

Northern Bites (2008). Entrant into U.S.. Open RoboCup competition, four-legged league. 1<sup>st</sup> place. See <http://www.robocup-us-open.de/>

Northern Bites (2008). Entrant into World Championship RoboCup competition, four-legged league. 3<sup>rd</sup> place. See <http://www.robocup-cn.org/>

Northern Bites (2008). Entrant into World Championship RoboCup competition, Standard Platform League. 5<sup>th</sup> place. See <http://www.robocup-cn.org/>

Northern Bites (2009). Entrant into U.S. Open RoboCup competition, standard platform. 4<sup>th</sup> place. See <http://www.robocup-us.org/>

Northern Bites (2009). Entrant into World Championship RoboCup competition, Standard Platform League. 2<sup>nd</sup> place. See <http://www.robocup2009.org/299-0-teams>

## 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

## Other Grants and Awards

2006 – Received \$100,000 anonymous donation for RoboCup program  
2007 – Named the Samuel S. Butcher Professor of the Natural Sciences  
2007 – RoboCup team won World Championship  
2008 – RoboCup team won U.S. Open

## Professional Activities

### Program Committees:

FLAIRS 2004, 2005, 2006, 2007, 2009, Artificial Intelligence Education track.  
AAMAS 2008, Robotics track

Co-Chair: RoboCup Symposium, 2010.

Technical Committee: RoboCup Standard Platform League, 2008.

Organizer: RoboCup U.S. Open 2009

League Organizing Chair: RoboCup Standard Platform League 2010.

Grant Reviewer: NSF CAREER Program, 2001, 2005, plus multiple ad hoc NSF reviews

Legal Consultant: Pierce Atwood LLP., 2008

External Tenure Reviewer: Reed College, 2008

External Promotion Reviewer: Willamette University, 2006, 2007

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

## Invited Talks

(1999). Fitting Parameters to Ecosystem Models Using Surface Data. *1999 NASA Workshop on Data Mining and Data Fusion*

(2000). Gateways: An approach to parsing spatial domains. *ICML-2000 Workshop on Machine Learning of Spatial Knowledge*.

(2000). Cognitive Maps in Robots and Men. Colby College Psychology Department

## **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.popsoci.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

### 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

### Masters Committee Membership

2000 Russ Tedrake, University of Michigan

### Doctoral Committee Membership

2009 Chee Kit Wong, Auckland University of Technology

## **Courses Taught**

101 Introduction to Computer Science  
210 Data Structures  
250 Programming Languages  
280 Projects in Computer Science  
289 Theory of Computation  
320 Robotics  
355 Cognitive Architecture  
370 Artificial Intelligence  
390 Advanced Seminar in Robotics

## **Collaborators**

### Other collaborators in past 48 months

Stephen Kaplan, University of Michigan  
Bob Cochrane, Drexel University  
Frank Lee, Drexel University  
Marc Hetherington, Vanderbilt University  
Byron Boots, Carnegie Mellon University

## **Outreach – Robotics Demonstrations**

2002	Hosted Toddy Pond Elementary School Robotics class.
2003-2009	Hosted Bowdoin College Children Center classes.
2003-2009	Hosted Miscellaneous Small Student Groups
2006	Hosted Mt. Ararat Junior High Science Club

## **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

## **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-ongoing	Advisor, Bowdoin RoboCup team
2005-2007	Trustee IT Advisory Committee
2006-2007	Classroom Committee
2007	Bowdoin Science Experience
2009-ongoing	Curriculum and Educational Policy Committee